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Disclaimer

The text and drawings presented in this report are developed in the course of the planning process and should be considered as work in progress and not representing a final position or determination unless otherwise explicitly stated.

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1. INTRODUCTION AND PROCEDURE

1.1 Introduction

This report presents the operational risk analysis (ORA) for the Fehmarnbelt Fixed Link Tunnel. The ORA combines the frequency estimation (ref. [1]) with the consequence estimation (this report) to calculate the risk and then compares the risk with the acceptance criteria from ref. [28].

1.2 Procedure

The operational risk analysis procedure is described in details in the ORA Accident Frequencies Report ref. [1].

1.3 Event overview and affected safety targets

All background information needed in order to setup risk modelling in the ORA has been presented in the ORA Accident Frequencies Report, ref. [1].

In Table 1-1 all the identified events are shown together with the affected safety targets; fatalities on road, fatalities on rail (both passengers and employees), disruption on road, disruption on rail and repair cost. The numbers in the table are references to sections in this report. If there are numbers opposite a given event, it means that the event has an effect on the relevant safety targets. The consequences are described in more details in the referred sections. A corresponding table containing references to sections containing descriptions of frequencies for each of the risk are given in the ORA Accident Frequencies Report (ref. [1]).

Initiating events	Fatalities Road	Fatalities/inju ries Rail (both passengers and employees)	Disruption Road	Disruption Rail	Repair cost
Ordinary road accide	ents				
Ordinary road traffic accident	4.3.1.1		4.3.1.2		4.3.1.2
Road accident involve	ving DG				
Ammonia	4.3.2.1.1		4.3.2.1.2		4.3.2.1.2
Chlorine	4.3.2.2.1		4.3.2.2.2		4.3.2.2.2
Corrosives	4.3.2.3.1		4.3.2.3.2		4.3.2.3.2
Explosives	4.3.2.4.1	4.3.2.4.1	4.3.2.4.2	4.3.2.4.2	4.3.2.4.2
Fire – road					
Car	4.3.3.1.2		4.3.3.2, 4.3.3.3	4.3.3.2	4.3.3.2, 4.3.3.3
Bus	4.3.3.1.2		4.3.3.2, 4.3.3.3	4.3.3.2	4.3.3.2, 4.3.3.3
HGV (excl. DG)	4.3.3.1.2		4.3.3.2, 4.3.3.3	4.3.3.2	4.3.3.2, 4.3.3.3
DGV	4.3.3.1.2		4.3.3.2, 4.3.3.3	4.3.3.2	4.3.3.2, 4.3.3.3
Ordinary rail accide	nts		1131313		1101010
Train collisions		4.4.2.1	4.4.2.2.3	4.4.2.2.2	4.4.2.3
Train derailment		4.4.2.1	4.4.2.2.3	4.4.2.2.1	4.4.2.3
Train object collision		4.4.2.1	4.4.2.2.3	4.4.2.2.2	4.4.2.3
Fire – rail	•				
Passenger train		4.4.5	4.4.5.1	4.4.5.1, 4.4.5.2	4.4.5.1, 4.4.5.2
Freight train excl. DG		4.4.5	4.4.5.1	4.4.5.1, 4.4.5.2	4.4.5.1, 4.4.5.2
Rail accidents involv	ving DG				
Ammonia	_	4.4.3.1.1		4.4.3.1.2	4.4.3.1.2
Chlorine		4.4.3.2.1		4.4.3.2.2	4.4.3.2.2
Corrosives		4.4.3.3.1		4.4.3.3.2	4.4.3.3.2
Explosives	4.4.3.4	4.4.3.4	4.4.3.4	4.4.3.4	4.4.3.4
External events					
Flooding			4.5.1	4.5.1	4.5.1
Dropped and dragged anchor	4.5.4	4.5.4	4.5.4	4.5.4	4.5.4
Grounding ship	4.5.5	4.5.5	4.5.5	4.5.5	4.5.5
Fire in transformer	-1.515		4.5.3	4.5.3	4.5.3
room	4 5 2	4 5 2			
Sunken ship Multiple simultaneous events (fire/toxic release and accident causing congestion)	4.5.2	4.5.2	4.5.2 *	4.5.2	<u>4.5.2</u> *

 Table 1-1 Events distributed on safety targets with references to relevant sections. *Disruption and repair costs are assessed under fire and toxic release respectively.

The frequency report (ref. [1]) also contains a section with description of how each topic in TSI SRT (ref. [32]) is handled in the ORA.



2. SUMMARY

This report details the operational risk assessment for the design of the Fehmarnbelt Fixed Link Tunnel. Within this report the following safety targets are considered:

- Individual risk to road and rail users (both passengers and employees)
- Third party risk
- Societal risk
- Risk of disruption (including repair cost)
- Environmental risk
- Risk to maintenance/inspection personnel

For all safety targets the risk is estimated. In all analysed cases the risk is considered acceptable.

2.1 Individual risk

In Table 2-1 the risk figures are presented for the year 2025 and 2045 as well as the corresponding acceptable risk level. The risks are presented for the following safety targets:

- Road users (fatalities)
- Rail passengers (FWSI)
- Rail employees (FWSI)
- Others (FWSI)

		2025		2045		
	Individu al Risk	Acceptab le Risk	Fraction of acceptab le risk	Individu al Risk	Acceptab le Risk	Fractio n of accep- table risk
Road fatalities	0.17	0.22	74.0%	0.13	0.17	75.1%
Rail - FWSI - passengers	2.60·10 ⁻³	0.0031	84.2%	2.78·10 ⁻³	0.00309	90.0%
Rail - FWSI – employees	8.81·10 ⁻⁴	0.0109	8.0%	1.22·10 ⁻³	0.01486	8.2%
Rail - FWSI – Others	1.15·10 ⁻⁵	0.0035	0.3%	1.72·10 ⁻⁵	0.00346	0.5%

 Table 2-1 Individual risk (the number of fatalities and FWSI per billion person passages) and acceptable

 risk on road and rail in 2025 and 2045

It is noted that are risk figures are below the acceptance criteria, i.e., the risk is considered acceptable.

In the estimation of the risk to employees it is seen that the risk only contributes a small part of the acceptance criteria. In the modelling no risk model for harm to maintenance personal due to rolling stock has been carried out. Clearly, there must be "room" for the risk in the acceptance criteria. With only 8% used, it is assessed that the risk for maintenance personal including FWSIs due to rolling stock is considered acceptable.

Finally, it is seen that the risk for Others only constitute 0.3% of the acceptance criteria. This is simply due to the low impact the railway has on the surroundings. Regarding Others it is underlined that the risk to persons in cars, buses etc. that have been stopped outside the tunnel due to an accident in a railway tube must to investigated further. They may be at risk if smoke from a fire or a toxic release is ventilated to this area.

2.2 Third party risk

No third party risks have been identified.

In previous versions of the ORA the scope was chosen to be the enclosed tunnel part. In this case no unauthorized persons are expected to enter the tunnel, as they will have to pass several physical barriers, and the surveillance system will make sure that persons entering the area would be seen and possibly stopped. Hence, persons entering the tunnel are persons who deliberately choose to pass the physical barriers and they are considered similar to train-surfers etc. who are omitted in a similar way as people committing suicide. However, considering the free road and railway passages on the landsides there may be a risk that people will cross the road and railway areas unauthorized, see ref. [33]. These stretches are, however, not different from any other highway or railway in Denmark/Germany where crossing is not permitted, so there is no argument for that the risk should be intolerable. Considering the location in the country-side and that the area is partly closed, the risk is assessed not to be higher than similar stretches in Denmark/Germany. Due to the above descriptions third party risk is not included in the analysis.

2.3 Societal risk (section to be updated autumn 2014)

The societal risk is the sum of the individual risk on road and rail and third party risk. The results are presented in Table 2.2 in comparison to the acceptance criteria. The societal risk is considered acceptable in both 2025 and 2045.

	Societal Risk	Acceptable	Societal Risk	Acceptable
	2025	Risk 2025	2045	Risk 2045
Fatalities per year	0.18	1.64	0.15	2.70

Table 2-2 Societal risk and acceptable risk in 2025 and 2045

2.4 Risk of disruption

The calculated disruption risk for road and rail individually and simultaneously is presented in Table 2-3 and is considered acceptable. It is conservatively assumed, that the disruption covers both tubes for road and rail respectively.

	2025	2045	Acceptable Disruption
Road tunnel disruption (days per year)(road alone*)	0.60	0.96	6.50
Rail tunnel disruption (days per year) (rail alone*)	0.13	0.15	
Simultaneous road and rail disruption (days per year)	0.41	0.46	0.60

Table 2-3 Tunnel disruption in days per year (* does not include simultaneous disruption)

From Table 2-3 it is seen that it is acceptable to disrupt the railway 0.6 days a year. This disruption may come from an event disrupting the rail alone or an event giving a simultaneous disruption.

2.5 Environmental risk

No environmental risks have been identified.

In general all spillage (from e.g. trains/vehicles with dangerous goods) will be collected in the drainage system from where it will be pumped to vehicles and handled in a proper way. A scenario where the environment could be affected by e.g. dangerous goods is if the tunnel collapses (e.g. caused by explosion). In this case some, considering the case, relative small amount of substances will be able to flow into the sea. However, considering all other consequences of a tunnel collapse, which will happen extremely rare, this consequence will be relative low. The tunnel is high safety class and can withstand a very high overpressure.

2.6 Maintenance risk

Railway maintenance personal is included in the acceptance criteria for rail employees, which is a group of persons defined in relation to the railway system in the CST and NRV's.



Persons carrying out maintenance work according to strict procedures. The following hazards that may occur have been identified:

- 1) Person(s) injured/killed by electrocution by the overhead catenary system
- 2) Person(s) injured/killed by falling e.g. on stairs
- 3) Person(s) injured/killed due to train in motion
- (1) Is not different than any other railway section/line in Denmark/Germany with an overhead catenary system, and the work is carried out under legislation such as the High Voltage Directive (The National Electrical Code Standard Handbook).
- (2) Workers doing maintenance work will walk and use stairs. The risk of falling is of course present. Stairs will, however, be designed following standard health and safety legislation, e.g. Consolidation act on the Working Environment (*In Danish: Arbejdsmiljøloven*).
- (3) Is not covered by the quantitative risk model.

Because no quantitative risk model is carried out for 3), it is important that there is some "room" for risk in relation to maintenance personal in the acceptance criteria for employees.

For a detailed list of hazards, see ref. [33].

2.7 Unauthorized persons on railway premises

Unauthorized persons are a group of persons defined in relation to the railway system in the CST and NRV's.

Unauthorized persons are persons that deliberately gain access to the railway part of the system without being authorized. One can imagine the following situations:

- 1) On or more persons "surf" on the outside of the train. The person can e.g. get access to this on a station near the tunnel.
- 2) Graffiti painters.
- 3) One or more persons choose to enter the railway area and follow the track in order to walk to the other side of the tunnel using the railway track.
- 4) Persons that cross the railway track on the landsides.

The area around the tunnel will have a fence and signs, etc. so no persons will enter the area without knowing that it is not allowed.

Train surfers (1) and graffiti-painters (2) that deliberately choose to go into the system knowing very well the danger of the actions they do. Other persons along the track (3) will be similar to (1) and (2).

A detailed list of hazards can be found in ref. [33].

Considering the location of the tunnel far away from larger cities, it is assessed that the likelihood of occurrence of the identified hazards are less than in other/similar railway sections/lines in Denmark/Germany. Hence, the risk for these types of events is considered not worse than the average safety level in Denmark/Germany.

2.8 "Others"

"Others" is a group of persons defined in relation to the railway system in the CST and NRV's. For this railway system the users of the road part will be considered as "others". An explosion in the railway part is an example of an event, where people in the road part may be affected.

Neighbors are considered to be so far away from the tunnel portals that they will not be affected by accidents with dangerous goods (toxic gasses or smoke) in the tunnel.

Cars which are stopped outside the tunnel in case of an accident in the tunnel will be stopped by barriers approximately 400 m outside the tunnel on the German side and approximately 250 m outside the tunnel on the Danish side. It is assumed, that procedures will ensure that no people in the cars will be affected by accidents with dangerous goods (toxic gasses or smoke) in the tunnel even though a large toxic release inside the tunnel probably can affect people 250 m outside the tunnel.

This means that only people on the road part of the system will be included in the risk assessment of "others".

3. SAFETY TARGETS AND RISK ACCEPTANCE CRITERIA

The consequences of each of the selected hazards and accidents are assessed against a number of key criteria. These are presented and described in detail in ref. [3] and shown in Table 3-1.

Safety target	Measure	Related to
1. Individual risk to road users	FAT/Year	Road
2. Individual risk to rail passengers (NRV1.1)	FWSI/Year	Rail
3. Individual risk to rail employees (NRV 2)	FWSI/Year	Rail
4. Risk to level crossing users (NRV 3)	FWSI/Year	Rail
5. Risk to others (NRV 4)	FWSI/Year	Rail
6. Risk to unauthorised persons on premises (NRV 5)	FWSI/Year	Rail
7. Third party risk	FWSI/Year	Road and rail
8. Societal risk (composed of 1 to 7)	FAT/Year,	Road and Rail
	F-N representation	
9. Risk of disruption	Days/Year	Road and Rail
	F-N representation	
10. Environmental risk	Euro/Year	Road and Rail

Table 3-1 Safety targets

where:

Furthermore, for all hazards the repair cost has been estimated. However, no risk acceptance criteria have been setup with respect to cost.

3.1 FAT to FWSI conversion factors

In previous versions of the ORA, the risk has been estimated as a number of fatalities. However, railway safety targets are measured in terms of Fatalities and Weighted Serious Injuries (FWSI) per year. The connection between fatalities (FAT), FWSI and serious injuries (SI) can be estimated on basis of data for accidents, showing a number of fatalities and serious injuries.

The following relation illustrates the connection:

 $FWSI = FAT + w_1 \cdot SI$ $SI = w_2 \cdot FAT$

Based on the above relations between FWSI and FAT, a conversion factor can be estimated for each of the safety targets relating to rail, so that conversion can be summarized in a single factor:

$$FWSI \cong C \cdot FAT$$

 W_1 is defined in ref. [30] and ref. [31] to 0.1, i.e. 10 seriously injured weights as 1 fatality. W_2 differs for each of the safety targets relating to rail and have been estimated in ref. [29]. The resulting conversion factors are shown in Table 3-2.

Safety target	Abbreviation	Conversion factor
Passengers	C _{passenger}	1.4
Employees	C _{employee}	1.4
Level crossing users	Clevel crossing	1.05
Unauthorized persons	Cunauthorized	1.04
Other persons	C _{others}	1.1

 Table 3-2 FAT to FWSI conversion factors for rail, ref. [29]

The conversion factors will be used to estimate the number of FWSI based on FAT.

For road users the corresponding W_2 is found from ref. [5], and the resulting conversion factor is shown in Table 3-3.

Safety target	Abbreviation	Conversion factor
Raod users	C _{road}	1.6

Table 3-3 FAT to FWSI conversion factors for road

3.2 Quantified acceptance criteria

Detailed calculations for establishing quantified acceptance criteria have been presented in ref. [3]. The results are summarized in Table 3-4.

Risk Acceptance Criteria	2025	2045
Risk to road users (FAT/passage)	0.223	0.174
Risk to rail passengers (FWSI/year)	3.09·10 ⁻³	3.09·10 ⁻³
Risk to employees (FWSI/year)	1.09·10 ⁻²	1.49·10 ⁻²
Risk to level crossing users (FWSI/year)	-	-
Risk to others (FWSI/year)	3.67·10 ⁻³	4.98·10 ⁻³
Risk to unauthorized persons on premises (FWSI/year)	0.136	0.185
Third party risk (FWSI/year)	-	-
Societal risk (FAT/year)	1.64	2.70
Risk of disruption to road (days/year)	6.5	6.5
Risk of disruption to road (days/year)	0.6	0.6
Risk of simultaneous disruption (days/year)	0.6	0.6
Environmental risk (Euro/year)	-	-

Table 3-4 Overview of the risk acceptance criteria

3.3 Cost of safety targets

According to the latest recommendations from the Danish Ministry of Finance ("Høringsversion af vejledning til samfundsøkonomisk analyse fra Finansministeriet") the value of a statistical life (VSL) is 16 million DKK or approximately 2.1 million Euros in 2007 prices. This corresponds to 2.3 million Euros in 2009 prices.

The value from "Høringsversion af vejledning til samfundsøkonomisk analyse fra Finansministeriet" is recommended as the preference value to be used for fatalities. This corresponds to 2025 and 2045 values in 2025 prices as given in Table 3-5.

	2025	2045
Cost of one fatality, Million Euro	3.1	4.3

Table 3-5 Cost of fatalities in million Euros in 2025 prices

The cost of disruption relates to the extra cost for the society and the owners loss due to the

disruption. The societal cost is described by the extra time and distance that the users of the Link are subject to in case of shorter or larger disruptions.

The basic assumption is that the traffic (both road and rail) will be lead over the route of the Great Belt Bridge in case of closure of the Fehmarnbelt Fixed Link. The traffic is for simplicity assumed to go through Copenhagen and Hamburg. Possible remedial transport in case of very long disruptions is disregarded when assessing the cost values.

The calculated disruption costs are calculated based on unit prices for traffic economy issued by the Danish Ministry of Transport, see ref. [11]. In general there is an initial cost for an event causing disruption. This "start-up" cost is indicated in Table 3-6.

	Road		Rail		Entire link	
	2025	2045	2025	2045	2025	2045
Initial start-up cost Per event (€m)	0.08	0.14	0.06	0.12	0.14	0.26

Table 3-6 Initial cost of an event causing disruption of part of or the entire link in million Euros in 2025prices

Having an initial cost per disruption implies that longer disruptions are less expensive per day, than shorter disruptions. In Table 3-7 are indicated the disruption costs for a day, a week, a month, six months and a year.

Societal disruption	Road		Rail		Entire link	
cost Million Euros	2025	2045	2025	2045	2025	2045
Per day	1.66	3.13	0.71	1.27	2.37	4.4
Per week	11.14	21.07	4.54	8.24	16.96	30.87
Per month	47.45	89.74	14.31	28.47	66.79	124.51
Six Months	288.43	545.815	116.86	211.82	439.48	799.43
A year	576.43	1,090.23	171.46	342.7	810.98	1,511.97

Table 3-7 Societal cost of disruption of part of or the entire link in million Euros in 2025 prices

It is seen that closing the entire link is relatively more costly than closing either the road or the rail individually. This is because some transport originally planned for the closed part, can use the non-closed part instead e.g. road tunnel users can go by train or freight can be transported by road instead of rail.

The owners' loss due to disruption is calculated on basis of the expected income for 2025 (1871 million DKK) from ref. [12], and it is extrapolated to 2045 based on ref. [11].

Expected owners loss	Road part		Railway part		Entire link	
2025 in €m (ex VAT)	2025	2045	2025	2045	2025	2045
Per day	0.560	0.836	0.129	0.192	0.662	1.060

Table 3-8 Owner loss due to disruption of part of or the entire link in million Euros in 2025 prices

Owners' loss is assumed to be linearly dependent on time; hence the owners' loss per week equals 7 times the loss for one day. In case of disrupting the entire link the owners' loss in 2025 and 2045 has been scaled similarly to the societal costs.

In addition to the owner's loss the cost of repairing after an accident must be assessed. The costs are completely dependent on the type of accident, and hence these repair cost considerations are described in the sections covering the consequences of the different accidents.

Environmental damage is assumed related to clearing and cleanup of an oil spill. The SAFEDOR values ref. [10] which is also used in the Fehmarnbelt Fixed Link Navigational Studies ref. [8] is recommended used. This will also provide consistency in the assessments. Thus, a cost of 13,100 USD in 2006 prices equal to 9,200 \in per spilled tonne of oil will be used. Other spills will - if relevant - be related to oil spill prices.

A rough extrapolation of this cost of environmental damage is presented in Table 3-9. Please note that the number in principle only covers the cleanup cost.

	2025	2045
Clean up cost per tonne , Euros	13,200	17,900

 Table 3-9 Environmental damage in Euros in 2025 prices

4. CONSEQUENCE MODELLING

The following chapter describes the calculations and assessments carried out in order to assess the consequences of different events.

In order to assess the consequences of a given event, some issues are important to address, namely:

- Which safety target is affected by the accident?
 - Road users (fatalities)
 - Rail users (fatalities)
 - o Disruption
 - Road part (alone)
 - Rail part (alone)
 - Simultaneous disruption of rail and road
 - Repair costs
- Population at the accident site
 - What is the traffic intensity at the time of the accident (e.g. difference between day and night)
 - Rush hour traffic (peak our traffic)
 - For train accidents, the number of passengers on the train(s) are important
- Location where has the accident occurred?
 - \circ On the landsides
 - \circ $\,$ In the enclosed tunnel
 - For railway accidents, evacuation procedures will be slightly different in the two railway tubes
 - Distance to emergency exits

4.1 **Population distributions**

In the event of an incident it is important to identify the population at the time of the accident and this is especially important when there is an ongoing risk to life safety such as a fire or toxic release. In the following sections the figures for road and railway are presented.

4.1.1 Road

The road tunnel population as defined by ref. [27] is shown in Table 4-1.

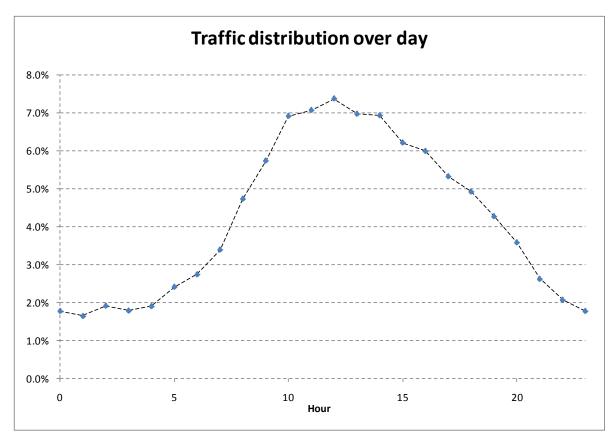
Road Traffic	2025	2045
Annual average daily traffic (AADT) [vehicles/day]	11723	19288
Cars	9819	15221
Cars (professional activities) 30%	2946	4566
Cars (private use) 70%	6873	10655
Lorries	1751	3851
Buses	153	215
Average person per vehicle		2.4
Cars (professional activities)		1.2
Cars (private use)		2.9
Lorries		1.0
Buses	3	5.0
Average load per lorry in tons	1	5.5

Table 4-1 Road tunnel traffic forecast and population

These figures for daily traffic flow and number of occupants per vehicle are average values. In the event of an incident the average occupancy is taken and sensitivity studies assessing higher or lower occupancy loading has not been considered at this time.

4.1.1.1 Average number of people in the road tubes in case of an road accidents

The traffic data forms the basis of the estimated number of passengers within the road tunnel in case of an accident. At first a representative average number of vehicles are estimated from the day, night and peak hour traffic on Scandlines ferries between Rødby and Puttgarden. The statistics from Scandlines (see Figure 4-1) show that there is peak hour traffic intensity for 5 hours a day, daytime traffic intensity for 12 hours and night time traffic intensity for 7 hours. The distributions are presented in Table 4-2.



		2025		20	45
Traffic	Percentage	Vehicles	Average value per hour	Vehicles	Average value per hour
Day time traffic (excl. Peak hour) 6-9, 13-22	52%	5723	504	9416	829
Peak hour traffic 10-15	35%	4129	826	6793	1359
Night time traffic 0-5, 23	13%	1871	221	3079	364
Total	100%	11723		19288	

 Table 4-2 Traffic distribution on road

Choosing the middle of the tunnel as a representative location for accidents the number of cars upstream of accident in the tunnel can be estimated. The estimate is based on the assumption of an average speed of 90 km/h.



Furthermore it is assumed that the traffic into the tunnel will be stopped after 2 minutes. The estimated time to have the traffic stopped is short, but is based on the presence of the traffic management system and VAID system to be provided in the tunnels.

Assuming that accidents occur at the middle of the tunnel on average the number of vehicles in a queue is calculated by the following formula:

$$N_{v} = \frac{A_{0}(t_{0} + t_{s})}{3600}$$

 N_V : vehicles in a queue

t_s: time to stop traffic in case of an accident (120 s)

 $t_{\scriptscriptstyle 0}{:}$ time to drive to the middle of the tunnel at average speed, (364 s)

 A_0 : vehicles per hour per tube

If the stopping time is taken as 2 minutes and the traffic volume is taken as average daytime traffic, the number of vehicles and persons in the queue is presented in Table 4-3.

Vehicles in queue	Passengers per vehicle	Number of vehicles	People in the tunnel – Average of 2025 and 2045
Cars	2.4	72.7	173.9
Buses	35.0	1.1	39.7
Lorries	1.0	13.0	13.0
		Total	226.5

Table 4-3 Average number of vehicles and occupants in a queue in 2 tubes in case of an accident

4.1.2 Rail

The rail tunnel population as defined by ref. [27] is shown in Table 4-4.

Rail Traffic	2025	2045	
Average number of freight trains per day	87	132	
Average number of passenger trains per day	40	40	
Passengers per passenger train	95		
Operators/workers on passenger train	2		
Operators/workers on freight train		1	
Average load per freight wagon (ton)	1	7.7	
Number of wagons per freight train	30		

Table 4-4 Rail tunnel forecast and number of passengers per train

These figures for daily traffic flow and number of occupants per train are average values. In the event of an incident the average occupancy is taken and sensitivity studies assessing higher or lower occupancy loading has not been considered at this time, as the acceptance criterion is defined with the average number of trains and persons.

4.1.2.1 Circumstances given a large accident

Considering a large accident in the modelling, e.g., explosion, grounding ship and other events that may lead to tunnel collapse, it is important to know the circumstances for the accident. In order to estimate the number of fatalities it is important to know how many cars and trains (and the corresponding number of passengers) are expected to be present in the tunnel at the time of the accident.

Analysing the train schedule for 2025, which is described in ref. [21], it is possible to estimate how many persons are present in a single railway tube at a given time, when the number of persons per train from Table 4-4 is used. The result is shown in Table 4-5.

Trains present in a single tube		Average number of passengers	Fraction of time
3 trains in tube	0	0	0
2 trains (Freight-Freight)	2	0	1,78%
2 trains (Freight-Pass. or PassFreight)	3	95	0,60%
2 trains (PassPass.)	4	190	0,05%
1 train (Freight)	1	0	34,70%
1 train (Pass.)	2	95	11,44%
Total time with trains in tube	-	-	48,56%
Time without trains in tube	0	0	51,44%

Table 4-5 Fraction of time with different train scenarios

If the accident is caused by an external factor (e.g. a grounding ship leading to tunnel leakage/flooding) the number of persons (both passengers and employees) in the railway part can be estimated using the table.

Assuming (conservatively) that in these "catastrophic" scenarios that 95% of the persons in the tunnel will be fatalities, a distribution for the expected number of fatalities for passengers are given in Table 4-6 and Table 4-7.

	Passer	ngers						
Mean	0	1	3	10	30	100	300	Total
21,83	87,92%	0%	0%	0%	0,96%	5,91%	5,21%	100,00%

Table 4-6 Distribution of 95% of the expected number of passengers on railway in both railway tubes

	Emp	loyees						
Mean	0	1	3	10	30	100	300	Total
1,20	53,17%	20,14%	23,88%	2,81%	0%	0%	0%	100,00%

Table 4-7 Distribution of 95% of the expected number of employees on railway in both railway tubes

It is seen that on average over time 21.8 railway passengers are present at the same time in the tunnel, while the corresponding number on average for employees is 1.2.

Whenever a specific train is involved in the accident, i.e., if an explosion is caused by a freight train carrying dangerous goods then, this information is taken into account. Knowing that one freight train is already present in the tunnel the conditional probabilities that one or more train is present can be estimated on basis of Table 4-5. Furthermore, it is taken into account if the accident is a derailment or a collision. Finally, the possible dangerous goods restriction is also taken into account and the impact it has on the presence of passengers when there is a large accident.

4.2 Fatalities on road and rail

The number of fatalities (and hence FWSIs using the relations in section 3.1) for a given event is modelled based on a scale from zero through to the maximum number of occupants. The majority of ordinary road accidents will lead to no fatalities. Conversely for a large toxic release the probability of there being fatalities is higher. For all distributions for all the modelled events see Appendix D.

As an example, ordinary accidents are assessed by means of the numbers presented in Table 4-8.

Individual risk [fatalities]	0	1	3	10	30	100	300
Probability	95.68%	4.22%	0.10%	0%	0%	0%	0%

Table 4-8 Example scale used for assessing number of fatalities and the distribution

In general these assessments are carried out on the basis of statistics, whenever available, and when no information has been available, best engineering judgements have been made. In the example given in Table 4-8 there is – given an accident - 95.7% chance that there are no fatalities, 4.2% of 1 fatality, 0.1% of 3 fatalities etc. This gives an average of 0.019 fatalities per accident.

For each accident scenario the probabilities in Table 4-8 are assessed for both road and rail, respectively. The reason for assessing the distribution, and not only using the average value, is to be able to represent the results by means of FN-curves, see e.g. ref. [4].

4.2.1 Disruption road and rail

Disruption times on road and rail in the event of an incident are assessed in a similar way to fatalities with an example shown in Table 4-9.

Disruption time [days per year]	0	1	7	14	30	180	365
Probability	75%	20%	4%	1%	0	0	0

Table 4-9 Example scale used for assessing the distribution of disruption time

In the example given in Table 4-9 the average disruption time is about 0.6 days per year corresponding to about 15 hours. The tables are assessed for both road and rail.

4.2.2 Repair costs

Besides assessing the disruption time, the costs of repairing the tunnel after an accident must be assessed. This is measured on similar scales as fatalities and disruption; presented in Table 4-10.

Repair cost [Euro]	10 ³	10 ⁴	10 ⁵	10 ⁶	10 ⁷	10 ⁸	10 ⁹
Probability	0%	20%	70%	10%	0%	0%	0%

 Table 4-10 Example scale used for assessing the repair cost distribution

The distribution in Table 4-10 leads to an average cost of $1.72 \cdot 10^5$ Euro.

4.3 Road

In the following sections the consequences of all events occurring in the road part of the tunnel are presented, these are:

- Ordinary traffic accidents
- Ordinary accidents involving dangerous goods
- Fire

For each of the accidents the following parameters are assessed (if applicable):

- The distribution of fatalities
- The distribution of disruption time
 - Road part alone
 - Simultaneously disruption of road and rail
- Repair costs

It is underlined that these distributions are assessed based on statistics available and best engineering judgements. All assumptions made, are presented in the suitable sections.

4.3.1 Ordinary road accidents

Ordinary road accidents are for example colliding cars and normal traffic accidents. In the modelling these accidents have been divided into accidents involving cars, buses and trucks respectively. The latter leads to different consequences depending on if dangerous goods are involved; this is dealt with in section 4.3.2.

In general it is assumed that ordinary accidents (not leading to fires, explosions or release of dangerous goods) are relevant for the individual risk on road, disruption risk on road and on repair costs. Hence, the accidents do neither lead to fatalities nor disruption of the railway part.

4.3.1.1 Individual risk road

Data for fatalities on motorways has been collected from 1998 to 2009 by the Danish Road Directorate. However, the statistics include accidents that are not representative for the Fehmarnbelt Fixed Link tunnel. By using the VIS-database a range of accidents have been excluded, namely those including the following objects:

- Accidents as an example include pedestrians, horses and mopeds
- Turning accidents
- Accidents in crossings
- Accidents that occurs with opposite traffic
- Accidents that occurs because of slippery roads caused by snow or ice

When these accidents were excluded from normal motorway accidents it resulted in a 12.6 percentage lower fatality rate per accident. The resulting fatality rates are shown in Table 4-11.

	2025	2045
Average number of fatalities per accident	0.029	0.019
Average number of fatalities per accident	0.029	0.0

Table 4-11 Distribution of fatalities in ordinary road accidents on Fehmarnbelt Fixed Link Tunnel

The values have been distributed according to different types of accidents with assumptions made for larger accidents which are typically not seen in the statistics.

It is underlined that statistics for accidents involving different vehicles types, such as cars, buses and trucks were investigated in order to see if there was any difference in the average number of fatalities in an accident. However, there was a small tendency that when a larger vehicle (bus or truck) was involved the average number of fatalities was slightly and not significantly larger. Hence, for simplicity the same fatality distribution has been used in the consequence modelling for cars, buses and trucks.

4.3.1.2 Disruption risk and repair costs

In general there is not data available about for how long a time an ordinary accident will disrupt the link and therefore engineering judgement has been made. Similarly values for the repair costs are not readily available and have been assumed.

In general it is assumed that ordinary traffic accidents (not leading to fires, explosions or release of dangerous goods) may lead to some downtime but do not lead to significant repair costs as shown in Table 4-12.

Vehicle type	Mean disruption time [min]	Mean repair costs [Euro]
Car	60	2500
Truck	90	5000
Bus	120	5000

 Table 4-12 Average disruption time for a traffic accident

It is noted that the values are average values for all accidents; some accidents will only disrupt the traffic for a few minutes taking the vehicle(s) to the emergency lanes while other accidents will lead to longer disruption times.

4.3.2 Road accidents involving dangerous goods

A fraction of the traffic accidents involve vehicles transporting dangerous goods. This implies that some of the accidents will lead to release of toxic, flammable or explosive materials. In order to assess the consequences of a release of such materials, CFD-modelling has been carried out for representative substances. This includes dispersion analyses of LPG, chlorine and ammonia. The consequences of selected release sizes are computed by means of the air-concentrations at given locations of the given substances in the tubes. The results of the modelling are presented in ref. [3].

Comparing the release characteristics with the population at the accident time and location in the tunnel estimation of the number of fatalities can be carried out.

The persons at risk when there is a release can be divided into three groups:

- The truck driver
- People downstream the release
- People upstream the release

In general people downstream are supposed to drive out of the tunnel (with a significantly higher speed than the release propagates).

People upstream of the release are in general safe as long as the ventilation system works properly. For the ventilation system an uptime (availability) of 99% has been assumed. There will be some back-layering of the gases, the extent of which depends on the initial velocity of the wind speed in the tunnel (which again depends on the traffic amount) and the length of time it will take for the ventilation system to reach the critical velocity.

The truck driver is in general very exposed, due to that he will be located downstream the release. Conservatively it is assumed that the truck driver will be fatally injured in these scenarios.

4.3.2.1 Release of ammonia

4.3.2.1.1 Human impact

The human impact has been assessed by using the probit function to establish the LC50 and ppm value for ammonia as described in section 9.1.6.2. In the consequence assessment for road, it is assumed that by the time the air in the car has an ammonia concentration on 5 ppm (odour threshold), the air outside the car has reached the final concentration calculated by the CFD modelling, see section 9.1.5.2.The final concentration is of 4.200 ppm given a small release and a concentration of 40.000 ppm given a medium release.

The number of fatalities depends on the number of people in the tunnel. As presented in section 9.1.5.3, a medium release of ammonia gives a concentration of 40.000 ppm. Without ventilation this gives the people in the road tunnel between a half and one minute to evacuate into the central gallery. Similar to the evacuation study related to fire, see section 4.3.3.1.2, a premovement time of 60 seconds has been assumed and a walking speed of 1.2 m/s. The time it takes to evacuate the persons from the road tube depends on the number of passengers. There are on average 61 passengers in the tube.

Based on the evacuation assessment for fire in the road part, see section 4.3.3.1.2, it will take 2 minute and 24 seconds to evacuate a total of 113 passengers (the passengers in a region of 200 m behind the accident). This is a larger number of passengers then what are expected to be in the tunnel following a toxic release. However, the toxic gas may induce the passengers to move less rapidly, it is assumed that it will on average take 2 minute and 24 seconds to evacuate the 61 passengers as well.

The LC 50 calculations show that 50% of the passengers will die because of the ammonia gas if they are exposed during more than 1 minute given the concentration of 40,000 ppm. It is assessed that 50% of the passengers will be able to evacuate in one minute and that 50% of the remaining 50% will be killed by the gas. This gives an additional 25% fatality probability from a medium release of ammonia. It is assumed that a large release will give a higher concentration and hence that it will give a 50% higher additional fatality probability; of total 38%. Taking ventilation into account the fatalities are reduced by 99%. This is due to the ventilation system blowing the gas release away from the queued traffic. In Table 4-13 the results distributed on accident types are presented.

Conse	Consequence type				
	Mantilation failung	Small	0.03		
	Ventilation failure (1% probability)	Medium	56.66		
		Large	84.97		
Ammonia release	Ventilation ok	Small	0.0003		
	(99% probability)	Medium	0.57		
	(,)	Large	0.85		

Table 4-13 Average fatalities as a consequence of dangerous goods accident resulting in release of ammonia in road tunnel

4.3.2.1.2 **Disruption and repair cost**

As described in section 9.1.5.3.1 the road tunnel will also need to be cleaned after a toxic release by washing the interior with water. The concrete, asphalt and different installations may need to be replaced. It is assessed that the repair costs is estimated to on average \in 5000.

The tunnel will be closed on between 2.5 to 4.5 hours given a release of ammonia, which is the downtime during cleaning of the tunnel.

4.3.2.2 Chlorine release

4.3.2.2.1 Human impact

The human impact has been assessed by using the probit function to establish the LC50 and ppm value for chlorine as described in section 9.1.6.2. In the consequence assessment for road it is assumed that by the time the air in the car has a chlorine concentration of 0.2 ppm (odour threshold), the air outside the car has reached the final concentration calculated by the CFD modelling, see section 9.1.5.2. The modelling results in a concentration of 4,200 ppm given a small release and a concentration of 40,000 ppm given a medium release.

The number of fatalities depends on the number of people in the tunnel. A concentration of 1,000 ppm can be fatal after a few deep breaths of the gas, it is assessed that very few passengers will be able to evacuate into the adjacent road tube (or central gallery) before they are affected by the gas. In section 4.4.3.1.1 it has been assumed that it will take a minimum of 1 minute to evacuate a car after the gas has been detected. It is assessed that this is also the case after a release of chlorine, it is therefore assessed that there will be an additional fatality probability of 50% caused by a medium chlorine release. It is assumed that a large release will give a higher concentration and it is assumed that it will give a 50% higher additional fatality probability of in total 75%. Taking ventilation into account the average number of fatalities are reduced by 99%. In Table 4-14 the result distributed on accident types is presented.

	Consequence typ	Average number of fatalities	
	Ventilation	Small	0.03
Chlaring relages	Ventilation	Medium	113.29
Chlorine release	failure (1%)	Large	169.92
	Ventiletien els	Small	0.0003
	Ventilation ok	Medium	1.13
	(99%)	Large	1.70

Table 4-14 Average fatalities as a consequence of dangerous goods accident resulting in release of chlorine in the road tunnel

4.3.2.2.2 Disruption and repair cost

The disruption time and repair costs are assumed to be the same as for ammonia, see section 4.3.2.1. Hence, repair costs are estimated to cost on average \in 5000 and a disruption of 2.5 to 4.5 hours, which is the estimated down time for cleaning.

4.3.2.3 Corrosive release

In this section the assessment of consequences following a dangerous goods accident which could lead to a release of corrosives in the road tube is presented.

4.3.2.3.1 Human impact

As described in section 9.1.4.1 it is assessed that there will not be any additional fatalities due to a corrosive release, and the consequences are therefore estimated to be the same as for an ordinary truck accidents.

4.3.2.3.2 **Disruption and repair cost**

The disruption time and repair costs are assumed to be the same as for ammonia and chlorine see section 4.3.2.1. Hence, repair costs are estimated to cost on average \in 5000 and a disruption of 2.5 to 4.5 hours, which is the estimated down time for cleaning.

4.3.2.4 Explosions

4.3.2.4.1 Human impact

As described in section 9.2 explosions caused by solid explosions, vapour cloud explosions and BLEVEs are assumed all to give the same consequences; namely collapse of a single tunnel element. This is an assumption since an explosion may cause collapse of more than one element. A collapse of one tunnel element due to an explosion in a road tube will affect vehicles and trains in the adjacent tube as well as the other tubes. It is assumed that the accident occurs in the middle of the road tunnel. Vehicles in both road tubes, which have just passed the collapsing element, are assumed to be able to drive out of the tunnel, while all trains in the tunnel will be affected. Conservatively assumed the accident leads to a 95% fatality rate inside in both road tubes for vehicles approaching the element and 95% fatalities for all trains in the tunnel. See section 4.1.2.1 for information on the presence of passengers during an accident.

The injuries and fatalities in the road part due to an explosion in the railway part is considered as "others". See section 2.8 for details.

4.3.2.4.2 **Disruption and repair cost**

Estimated repair time is assumed about one year, where the entire tunnel has to be closed for traffic during the repairing period.

The repair cost is estimated to €500 million.

4.3.3 Fire - road

Four event trees with a range of scenarios have been setup for the enclosed tunnel part and four event trees covering the landsides; covering fire in cars, buses, HGVs and DGVs. For each of the fire scenarios it has been estimated how often a fire is detected, if the suppression system works and if ventilation works. For all four vehicle types this leads to a total of 44 fire scenarios in the enclosed tunnel part, and in total 8 scenarios on the landsides. The reason for having fewer scenarios on the landsides in the enclosed tunnel is simply due to the lack of mechanical ventilation and automatic suppression on the landsides.

4.3.3.1 Safety to users

For each of the scenarios the population in the area of the fire is considered taken into account the tenability criteria, described in the next section.

4.3.3.1.1 Tenability criteria

The tenability criteria describe the various parameters and at which levels people are expected to die, regarding:



- Visibility
- Thermal radiation
- Convective temperature
- CO concentration

The criteria have been chosen to be the following conservative values, ref. [16]:

- Visibility = 5 m
- Convective temperature = 100°C
- Thermal radiation = 2.5 kW/m^2
- CO Concentration = 1150 ppm

These criteria are used in the modelling in order to identify fatalities such that if a person is located in a region where the visibility is less than 5 m or in a region with convective temperature of 100° C, then that person will be considered a fatality.

4.3.3.1.2 Evacuation modelling

Detailed evacuation modelling has been carried out using the Legion software, ref. [7], which takes into account:

- geometry of the tunnel,
- location of emergency exits,
- walking speeds
- how vehicles queue up upstream the fire
- congestion and queuing of occupants
- pre-movement characteristics (time before people starts to evacuate)

In general it is assumed that users are in safe areas in the non-incident tubes and in the central gallery. In order to be conservative, it is assumed that vehicles queue up quickly after the fire has started. In reality even with low volumes of traffic it will take a few minutes to fill up a distance of, say, 200 m behind the incident. This implies that the results are independent of the traffic volume, which again implies that the consequences following from a fire are the same in 2025 and 2045 (regardless that the traffic figures differ).

Important parameters used in the modelling are:

- Distance between emergency exits: 100 m
- Average walking speed of occupants: 1.2 m/s

The results of the evacuation modelling are that only 9 of the scenarios lead to fatalities see ref. [16]. The scenarios are presented in Table 4-15.

Description	Fire Size (MW)	Detection	Suppression	Ventilation	Fatalities
Car	8	Ν	N	Ν	3
Bus	15	Ν	Y	Ν	3
Bus	30	Ν	N	Ν	3
DGV	20	Ν	Y	Ν	3
DGV	350	Ν	N	Ν	3
HGV	20	Ν	Y	Ν	3
HGV	50	Ν	N	Ν	3
HGV	20	Ν	Y	Ν	3
HGV	200	N	N	N	3

 Table 4-15 The nine fire scenarios in the road part leading to fatalities

It is seen that fatalities will occur if both the detection system as well as the ventilation system must fail. In all scenarios a fire growth rate has been assumed which is identical regardless of the maximum fire size. In this respect, during an evacuation, occupants are exposed to identical conditions. It is only after the evacuation has been completed that the fire continues to grow to a much large fire size. Hence where fatalities are expected the number of fatalities is taken to be the same regardless of the maximum fire size.

4.3.3.2 Disruption and repair costs due to fires, enclosed tunnel

All fire scenarios are assumed to have a maximum heat release rate, measured in MW (Megawatts), and it is assumed that the consequences, in terms of disruption as well as repair costs, are related to peak fire size.

In ref. [6] the length of disruption and the repair costs are assessed for a 50MW fire and a 200MW fire if the fire incident is in the enclosed tunnel. These figures for disruption lengths and repair costs are primarily based on statistical data for fire incidents in tunnels where suppression systems have not been installed. Hence these figures are conservative upper limits. The selected figures for different fire sizes relevant for the fire modelling can be seen in Table 4-16.

Peak Fire size [MW]	Mean repair cost [Euro]	Mean disruption, incident tube [days]	Mean disruption, non-incident tubes [hours]
1	1,500	0.2	1
2.5	9,375	0.4	2
8	96,000	0.6	3
15	337,500	1	6
20	600,000	4	8
30	1,350,000	5	12 (0.5 day)
50	15,000,000	30	84 (3.5 day)
200	60,000,000	90	168 (7 days)
350	105,000,000	90	168 (7 days)

Table 4-16 Assessed repair cost and disruption length for a range of fire sizes in enclosed tunnel

4.3.3.3 Disruption and repair costs due to fires, land sides

For the landsides, fires are not expected to lead to fatalities, due to the possibility of escaping from the fire. Fires on landsides will, however, lead to disruption and to repair costs.

In general the repair costs and the disruption time will be much smaller if the fire is located on the landsides comparing with consequences of fire in the enclosed tunnel part. This is primarily due to that the amount of equipment is much larger in the enclosed tunnel part and that the tunnel structure is not damaged by a fire outside the tunnel areas.

Disruption lengths and repair costs are assessed for a range of selected fire sizes relevant for the fire modelling on the land side; the result can be seen in Table 4-17. In general it is assumed that the repair costs for fires on landsides are 1/10 of the repair costs for a similar fire in the enclosed tunnel part. For the same reasons the disruption time is much lower for fires on the land sides. A fire on e.g. the road part of a land side is assumed not to have any impact on disruption of the rail part, and vice versa. This is conservative

Fire size [MW]	Mean repair cost [Euro]	Mean disruption, incident "tube" [days]
1	150.00	0.2
2.5	937.50	0.4
15	33,750.00	0.5
30	135,000.00	1
200	6,000,000.00	2
350	10,500,000.00	2

Table 4-17 Assessed repair cost and disruption length for a range of fire sizes on the land sides

4.4 Rail

The consequence estimation for rail accidents has been divided into:

• Ordinary rail accidents (derailments, train collisions and train-object collisions)



- Accidents involving dangerous goods
- Fire (on rolling stock)

4.4.1 Consequence reducing measures

Derailment containment provisions are meant to mitigate the consequences of an initial derailment. They guide the derailed vehicle, preventing it from deviating further from the track, hitting other objects and turning over.

Derailment provisions will be installed in the tunnel by means of the elevated walkways, which will be designed to have adequate geometry (height and lateral position) and strength.

4.4.2 Ordinary rail accidents

The consequence estimation for rail accidents has been divided into derailments and collisions. Derailments have been divided into severe derailments, resulting in fatalities, and not severe derailments. Collisions have been divided into severe collisions and not severe collisions and into front-front collisions and front-end collisions.

4.4.2.1 Fatalities and injuries (FWSI)

The accident frequencies for collisions and train derailments are presented in ref. [1].

The maximum number of fatalities caused by ordinary railway accidents on the Fehmarnbelt Fixed Link is estimated on the basis of the number of people present on the trains. From Section 4.1.2 it can be seen that

- Only one person is assumed to be inside a freight train, namely the driver.
- On average 95 passengers and two employees (the driver and one other personnel) is assumed to be on passenger train.

Based on accident information from accidents in Europe, the distribution of fatalities in accidents with fatalities has been assessed. The number of fatalities has been divided into collision between trains, train collision with objects and derailments.

On basis of the statistics in ref. [34] the expected fatality fraction of the passengers, drivers and employees in Table 4-18 is established.

Fatality percentage	Passengers	Driver	Employees
Derailment	8.70%	54.90%	8.70%
Trains collision (front – end)	2.70%	29.60%	2.70%
Trains collision (front – front)	5.40%	59.20%	5.40%
Collision with object	2.90%	44.40%	2.90%

 Table 4-18 Fatality percentages for train accidents with fatalities.

The figures are to be understood in the following way. The derailment scenario either leads to a severe accident causing fatalities or to a non-severe accident/incident causing no fatalities. In those cases where the derailment is severe, a fraction of 8.7% the passengers will be fatalities and similarly will the train driver die with a probability of 54.9%. It is underlined that these probabilities hold for accidents with severe consequences, on average including all accidents a much lower fraction of the passengers will die in a derailment.

Based on these data the average number of fatalities and FWSI for derailments, collisions between trains and train collision with objects has been estimated and presented in Table 4-19.

Accident type	Train(s) involved	Severity of accident	Estimated average number of employee FWSI	Estimated average number of passenger FWSI
		Derailment without fatalities	0	-
	Freight train	Derailment with fatalities	0.55	-
Derailment		Derailment without fatalities	0	0
	Passenger train	Derailment with fatalities	0.64	8.27
		Front – end	0.59	_
	Freight trains	Front – front	1.00	-
	Passenger train/	Front – end	0.62	5.13
Collision	freight train	Front – front	1.24	10.26
		Front – end	0.65	5.13
	Passenger trains	Front – front	1.29	10.26
	All combinations	Collision with no fatalities	0	0
	Passenger train	Front-object	0.62	-
Train object	Freight train	Front-object	0.66	3.86
collision	All combinations	Collision with no fatalities	0	0

Table 4-19 Accident scenarios for rail accidents and corresponding estimated average number of FWSI for passengers and employees

For comparison the data used in the risk assessment for the Øresund link ref. [13] shows that a derailment on average leads to between 0 and 5 fatalities, while an average fatality of 6 for front-front collisions involving a passenger train and an average fatality of 3 for front-end collision involving a passenger train.

4.4.2.2 Disruption

The disruption time given a collision and a derailment has been assessed based on available accident information. In the estimation it has been assumed that an accident leading to several fatalities will have a longer disruption time than an accident without any fatalities. However, it is assumed that an accident resulting in a fire or a toxic release will have a long disruption regardless of the number of fatalities.

4.4.2.2.1 Derailments

Clearing up after a non-severe derailment of a single wagon is estimated to take 4 to 6 hours, namely (ref. [14]):



- 1 hour for discovering the character of the problem,
- 2 hours for getting organized,
- 1 to 3 hours for doing the job.

4.4.2.2.2 Collisions

Clearing up after a train collision with no fatalities is estimated to take 6 hours on average, see ref. [14]. It is assumed to cover both collisions between trains and train collision with objects.

Rescuing and clearing up after railway accidents with fatalities are estimated to take 24 hours on average, ref. [14].

4.4.2.2.3 **Disruption on road**

For ordinary rail accidents that lead to fatalities on the rail, it is assessed that there will be a disruption on the road as well. This is due to the fact that the road tube will be used for evacuating passengers. The duration of the disruption on road depends on the severity of the accident; the assumed disruption lengths are presented in Table 4-20.

The disruptions are assessed in terms of six severity classes 1 to 6, where 1 corresponds to the shortest disruption time and 6 to the longest.

Disruption Class	Example	Disruption hours
1	Derailment of freight train with no fatalities	1
2	Derailment of passenger train with no fatalities	2
3	Front- end collision - freight trains	4
4	Front- end collision - passenger trains	6
5	Derailment/ Front-front collision passenger train with fatalities	8
6	Front-front collision freight trains	10

Table 4-20 Road disruption consequences caused by ordinary rail accidents

4.4.2.3 Repair costs due to ordinary rail accidents

Based on estimated repair cost for fires on road, costs for ordinary rail accidents have been estimated. It is assumed that a front- front collision with two passenger trains will damage the rail tunnel to the same extent as a fire on road with fire size between 20MW and 30MW. The other consequences have been assessed based on a comparison with the severity of front-front collision with two passenger trains. The repair costs are presented in Table 4-21 again represented with six consequence classes. It is underlined that the repair costs are only considering damage to the tunnel, and not the rolling stock etc.

Tunnel damage class	Example	million €
1	Derailment passenger train with no fatalities	0.01
2	Derailment freight trains with no fatalities	0.05
3	Front- end collision - no freight trains	0.1
4	Front- end collision - inv freight trains	0.5
5	Front-front collision passenger trains	1
6	Derailment/ Front-front collision with fatalities involving freight train	5
7	Explosion	500

 Table 4-21 Consequences of repair costs for ordinary road and rail

4.4.3 Rail accidents involving dangerous goods

Similar to the modelling for the road a range of scenarios involving dangerous goods have been modelled on the railway part. These include:



- Ammonia release
- Chlorine release
- Flammable liquids
- LPG

Release of chlorine or ammonia in the rail tubes could be the result of an accident with a freight train.

When estimating the consequences of an accident leading to e.g. a toxic release, fatalities due to the "mechanical" accident (e.g. a collision) will not count as a fatality caused by dangerous goods. Only the additional fatalities, due to the actual presence of dangerous goods will be accounted as such.

4.4.3.1 Ammonia release

4.4.3.1.1 Human impact

The human impact due to an ammonia release on railway is similar to release on road, see section 4.3.2.

The number of fatalities depends on the number of people in the tunnel. As presented in section 9.1.3 medium release of ammonia gives a concentration of 40.000 ppm and the average odour threshold for ammonia is 5 ppm. This gives the train passengers between a half and one minute to evacuate to the adjacent rail tube or the road tube.

Based on the evacuation assessment made for fire where a pre-movement distribution of between 15 and 30 seconds (90% of occupants have 30 seconds pre-movement) and walking speed is 1.2m/s. The time it takes to evacuate the rail tube depends on the number of passengers. There are on average 95 passengers on a passenger train and based on the evacuation assessment for fire on rail it will take 1 minute and 50 seconds for 95 passengers to evacuate into the adjacent rail tube. It is assumed that after a collision or a derailment there might be additional difficulties because of already injured passengers and doors that do not open. It is therefore assessed that it will take 2 minutes to evacuate after a collision or a derailment.

The LC 50 (see appendix A in section 9) calculations show that 50% of the passengers will die because of the ammonia gas if they are exposed during more than 1 minute given the concentration of 40.000 ppm. It is assessed that 50% of the passengers will be able to evacuate in one minute and that 50% of the remaining 50% will be killed by the gas. This gives an additional 25% fatality probability from a medium release of ammonia. It is assumed that the additional fatality probability is 50% higher for a large release then for a medium release which gives a total 38% additional probability for fatalities after a large ammonia release. In Table 4-22 the result distributed on accident types is presented.

Accident type - Train(s) involved	Severity of accident		Estimated average number of employee FWSI	Estimated average number of passenger FWSI
Severe derailment -	Small		0	-
freight train carrying	Medium		0.35	-
ammonia	Large	-	0.53	-
		Small	0	-
	Front - end	Medium	0.70	-
Collision - Two freight trains one carrying	chu	Large	1.05	-
ammonia	Front -	Small	0	-
	front	Medium	0.70	-
	none	Large	1.05	-
	Front -	Small	0	0
	end	Medium	1.05	33.25
Collision - Passenger train/ freight trains one	chu	Large	1.58	49.88
carrying ammonia	Front -	Small	0	0
	front -	Medium	1.05	33.25
	none	Large	1.58	49.88
Train object colligion with	Small release		0	-
Train-object collision with freight train	Medium release		0.35	-
	Large release		0.91	-

 Table 4-22 Estimated FWSI as a consequence of a freight train accident resulting in release of ammonia

 in the railway tunnel

As presented in section 9.1.5.3 a small release gives no additional (to the fatalities due to the "mechanical" accident) fatalities, the number of fatalities in case of a small release is the same as an ordinary rail accident.

4.4.3.1.2 **Disruption and Repair Cost**

The disruption time and repair costs are assumed to be the same as for ordinary collisions. It is assumed that the cost for cleaning up after a toxic release is negligible compared to the repair cost after a collision, see Table 4-21. Disruption on rail is also estimated to be the same as for ordinary rail accidents, see Table 4-20.

4.4.3.2 Chlorine release

4.4.3.2.1 Human impact

The human impact due to an ammonia release on railway is similar to release on road, see section 4.3.2.

The number of fatalities depends on the number of people in the tunnel. As presented in section 9.1.3 medium release of chlorine gives a concentration of 40.000 ppm and the average odour threshold for chlorine is 0.2 ppm. This gives the train passengers between a half and one minute to evacuate to the adjacent rail tube or to the central gallery.

Since a concentration of 1.000 ppm can be fatal after a few deep breaths (se section 9.1.6.2) of the gas it is assessed that very few passengers will be able to evacuate into the adjacent rail tube before they are affected by the gas. In section 4.4.3.1.1 it was assumed that it will take a minimum of 1 minute to evacuate the train after the gas is detected. It is assessed that this is also the case after a release of chlorine it is therefore assessed that there will be an additional fatality rate of 50% which caused by medium chlorine release. In Table 4-23 the result distributed on accident types is presented. It is assumed that the additional fatality probability is 50% higher for a large release then for a medium release which gives a total 75% additional probability for fatalities after a large chlorine release.

Accident type - Train(s) involved	Severity of accident		Estimated average number of employee FWSI	Estimated average number of passenger FWSI
Severe derailmant -	Small		0.00	-
freight train carrying	Medium		0.70	-
chlorine	Large		1.05	-
	Fuent	Small	0.00	-
	Front - end	Medium	1.40	-
Collision - Two freight	enu	Large	2.31	-
trains one carrying chlorine		Small	0.00	-
chiornic	Front - front	Medium	1.40	-
	none	Large	2.10	-
	- ·	Small	0.00	0.00
	Front - end	Medium	2.10	66.50
Collision - Passenger	enu	Large	3.15	99.75
train/ freight trains one carrying chlorine		Small	0.00	0.00
	Front - front	Medium	2.10	66.50
	none	Large	3.15	99.75
	Small release		0.00	-
Train-object collision with freight train	Medium release		0.70	-
	Large release		1.21	-

 Table 4-23 Estimated FWSI as a consequence of a freight train accident resulting in release of chlorine in

 the railway tunnel

As presented in section 9.1.5.3, a small release gives no additional fatalities; the number of fatalities in case of a small release is the same as an ordinary rail accident.

4.4.3.2.2 **Disruption and repair cost**

The disruption time and repair costs are assumed to be the same as for ordinary collisions. It is assumed that the cost for cleaning up after a toxic release is negligible compared to the repair cost after a collision, see Table 4-21. Disruption on rail is also estimated to be the same as for ordinary rail accidents, see Table 4-20.

4.4.3.3 Corrosive release

4.4.3.3.1 Human impact

As described in section 9.1.4.1 it is assessed that there will not be any additional fatalities due to an accident with corrosive release is therefore estimated to be the same as for ordinary rail accidents involving freight trains.

4.4.3.3.2 **Disruption and repair cost**

The disruption time and repair costs are assumed to be the same as for ordinary collisions. It is assumed that the cost for cleaning up after a toxic release is negligible compared to the repair cost after a collision, see Table 4-21. Disruption on rail is also estimated to be the same as for ordinary rail accidents, see Table 4-20.

4.4.3.4 Explosions

As described in section 9.2 explosions caused by solid explosions, vapour cloud explosions and BLEVE are assumed to all give the same consequences; namely collapse of a single tunnel element. This is an assumption since an explosion may cause collapse of more than one element.

A collapse of one tunnel element due to an explosion in one tube will affect trains and vehicles in the accident tube as well as the other tubes. It is assumed that the accident occurs in the middle of the tunnel. All trains in the tube with the explosion and the adjacent rail tube are assumed to be affected as it is assumed, that the electrical systems will break down which means that the

trains cannot drive out of the tunnel. It is conservatively assumed that the accident leads to a 95% fatality rate for both tunnel tubes.

In Section 4.1.2.1 is described the estimated distribution of number of persons in the railway tunnel.

Estimated repair time is assumed about one year. The entire tunnel has to be closed for traffic for the repair time. The repair cost is estimated to \in 500 million.

4.4.4 Modelling of dangerous goods restrictions

As described in ref. [1], the following restrictions will apply for dangerous goods transported on railway:

- Freight trains with RID-classified goods are only allowed in the tunnel, if there are no passenger trains at the same track.
- Freight trains with dangerous goods classified as RID class 1 or RID class 1.5 or 1.6 are only allowed in the tunnel, when no other trains are in the tunnel, irrespective of tunnel tube.
- Freight wagons with dangerous goods classified as RID class 1 are only allowed to transport 1000 kg explosive goods per train wagon.

The following general events will be affected by at least one of the restrictions:

- Freight trains with RID-classified goods are only allowed in the tunnel, if there are no passenger trains at the same track.
 - Collisions between passenger trains and freight trains carryings dangerous goods will have their frequency set to 0.
 - No passengers will be present in the same tube
- Freight trains with dangerous goods classified as RID class 1 or RID class 1.5 or 1.6 are only allowed in the tunnel, when no other trains are in the tunnel, irrespective of tunnel tube.
 - All train-train collision scenarios involving freight trains carrying explosives will have their frequency set to 0.
 - The consequences of derailment and train-object collision scenarios involving freight trains carrying explosives will be modified such that only fatalities among employees on the freight train and road users are possible.
- Freight wagons with dangerous goods classified as RID class 1 are only allowed to transport 1000 kg explosive goods per train wagon.
 - This will not significantly affect the model in its current form, because it is assessed that even 1000 kg of explosives will have a very large impact on the tunnel structure and the persons inside the tunnel.

4.4.5 Fire – Rail

Detailed fire modelling has been carried out in order to establish the fire strategy, see ref. [16]. The fire modelling provides consequence inputs to the event trees for fire on:

- Passenger trains
- Freight trains
- Fire in trains carrying dangerous goods

For the passenger train and freight trains four different locations of the fire have been assumed:

- Interior of train wagon
- Under wagon
- In engine
- In roof

A probability for each of the fire locations has been assessed, namely interior (5%), engine (40%), roof (40%) and under train wagon (15%).

Evacuation analyses have been carried out for all the fire scenarios, see ref. [16]. The tenability criteria chosen are similar as those for the road analyses, as described in section 4.3.3.1.1.

In general these analyses show that when there is average number of passengers on the train (95 persons) the evacuation is efficient with little queuing. The same holds if there are 200 passengers on the train. If the maximum capacity is used (here assumed to be 588 passengers) passengers will queue up at the exits and this will lead to a number of FWSI. A distribution for the number of passenger has been proposed in appendix in C in section11; however, using the distribution (a lognormal) the probability of having more than e.g. 350 passengers or more on a train is less than 10⁻⁷. In order to ensure conservative estimates, the following assumptions are made:

- The number of fatalities on a train with 350 passengers is assumed to be the same as the number of fatalities calculated on basis on a full train with 320 passengers.
- The probability of having 350 passengers or more is assumed to be 0.1%

4.4.5.1 Disruption and repair costs due to fires, enclosed tunnel

All fire scenarios lead to a fire of a certain peak fire size, measured in MW (Megawatt). In the consequence modelling, it assessed that for each peak fire size there are certain consequences in terms of disruption as well as repair costs. Two factors are important when comparing consequences of fires in the road and rail part:

- Due to the fact that the train tube is smaller than the road tube, fires are expected to be more intense and damage a longer section of tunnel.
- Compared to road, restoring the rail tunnel after a fire will probably be more costly and time consuming, due to strict validation and verification procedures in railway projects, and because it is a more difficult and restricted working environment.

Due to these facts it is assumed that disruption time as well as repair costs are 50% higher than for a similar fire in the road tube part. The results, i.e., assumed disruption time and repair costs in the railway tube, are shown in Table 4-24.

Fire size [MW]	Mean repair cost [Euro]	Mean disruption, incident tube [days]	Mean disruption, other tubes (non-incident tubes) [hours]
1	2.250,00	0.3	1
2.5	14.062,50	0.6	3
8	144.000,00	0.9	6
15	506.250,00	1.5	9
20	900.000,00	6	12
30	2.025.000,00	10.5	18 (0.75 day)
50	22.500.000,00	45	126 (5.25 day)
200	90.000.000,00	135	252 (10.5 days)
350	157.500.000,00	135	252 (10.5 days)

Table 4-24 Assessed repair cost and disruption length for a range of fire sizes in enclosed tunnel

4.4.5.2 Disruption and repair costs due to fires, land sides

On landsides, fires are assessed not to lead to fatalities due to the possibility for escaping from the fire. Fires on landsides will, however, lead to disruption and to repair costs.

In general the repair costs and the disruption time will be much smaller if the fire is located on the landsides comparing with consequences of fire in the enclosed tunnel part. This is primarily due to that the amount of equipment is much larger in the enclosed tunnel part and that the tunnel structure is not damaged by a fire on the land sides. Based on Table 4-24 disruption lengths and repair costs are assessed for a range of selected fire sizes relevant for the fire modelling on the land side; the result can be seen in Table 4-25. In general it is assumed that the repair costs for fires on landsides are 1/10 of the repair costs for a similar fire in the enclosed tunnel part. For the same reasons the disruption time is much lower for fires on the land sides. A fire on e.g. the rail part of a land side is assumed not to have any impact on disruption of the road part, and vice versa.

Fire size [MW]	Mean repair cost [Euro]	Mean disruption, incident "tube" [days]
1	225	0.3
2.5	1406	0.6
15	50625	0.75
30	202500	2.25
200	900000	3
350	15750000	3

Table 4-25 Assessed repair cost and disruption length for a range of fire sizes on the land sides

4.5 External events

The consequences of the external events are presented in the following sections.

4.5.1 Flooding

Due to predictions and forecasts flooding is very unlikely to cause any fatalities. The tunnel will simply in these cases be shut down, causing a disruption.

4.5.1.1 Heavy rainfall

The tunnel has been designed for heavy rainfall, but not for extreme rain events, which are expected to occur on average every 50 years. In these cases it is assumed that:

- It will take a long time to fill the drainage system; the pumps will continuously try to empty the drain during the rainfall.
- Only in cases where the pumping capacity is too small or is not properly functioning, the drainage system can be filled.
- Also an alarm shall appear in the tunnel SCADA if the drainage system is in a position which implies a risk for water on the rail tracks.
- In those cases water can start to fill the tunnel.
- However, the water level should be very high before it has consequences in terms of repair costs such a rainfall is assessed not to occur in reality.

Hence, it is assessed that every 50 years the complete tunnel will be disrupted during such a rainfall event – conservatively, this disruption is estimated at 6 hours.

4.5.1.2 High water level

The tunnel has been designed to resist a very high water level - see ref. [15]. Taking into account that flood protection will be installed whenever the water level is too high, water is prevented from entering the tunnel. In the very rare event of a mean water level higher than 4.6m above normal water level together with a worst case rainstorm event and global warming, water will begin to flow into the tunnel. In this very unlikely event Lolland will be completely flooded, and it will not be possible to get to the link from the Lolland side.

Again, as with heavy rainfall, the consequences are a disruption of the complete link. The event is estimated to occur with a frequency of $3.0 \cdot 10^{-5}$ in 2025 (and similarly with a frequency in 2045 of about $5.0 \cdot 10^{-5}$). In ref. [22] the consequence of flooding the substation is estimated to be a disruption up to 12 month.

4.5.2 Sunken ship on tunnel

A sinking ship hitting the tunnel roof will cause a dynamic load during impact and subsequently a static load originating from the weight of the ship. The Fehmarnbelt Fixed Link design load is 150 KN/m². The impact force *F* on the tunnel roof from a sinking ship is determined as $F=m\cdot g$, where *m* is the ship displacement and *g* is the gravitation.

It is assumed that the sinking ships will affect the tunnel in the same way regardless of how the ship hits the tunnel roof, and that any ship with a load higher than the design load will cause the tunnel to collapse.

The data that has been used to establish the frequency for sinking ships includes ship displacement, length and ship width ref. [9].

It has been assumed that the ships loads are distributed on 10% of the ships' area when it hits the tunnel. This is likely a conservative assumption.

Calculations based on evaluation of impact forces and tunnel capacity results in that 0.4% of all impact on the tunnel from sinking ships lead to a collapse of the tunnel, i.e. the collapse frequency is $1.6 \cdot 10^{-7}$ in 2025 and $2.7 \cdot 10^{-7}$ in 2045.

It is assumed that a collapse of the tunnel due to a sunken ship affects the people in the tunnel in the same way as an explosion, which implies that the following assumptions are made:

- A sunken ship beyond design load cause collapse of one element
- A collapse of one tunnel element will affect vehicles in all tubes
- The ship hits the middle of the tunnel
- Vehicles which just have passed the collapsing element are assumed to be able to drive out of the tunnel
- All train in the tunnel will be affected by the collapse

Calculations for explosion show that a collapse of the tunnel will lead to 215 fatalities on average on road and 17.4 fatalities or 19.4 FWSI on rail.

Estimated repair time is assumed to be about one year, where the entire tunnel has to be closed for traffic during the repairing period. The repair cost given such an accident is estimated to 500 million Euros.

4.5.3 Fire in transformer room

There are 10 transformer rooms in connection to the road tunnel and 10 transformer rooms in connection to the rail tunnel. In each transformer room there are 2 transformers.

Substations will be placed in the tunnel at the location of each special element containing transformers, switchgear and distribution boards. Each of the substations will be equipped with redundant switchgear and transformers. There is a gaseous suppression fire fighting system in each of the substations. Each room will be separated by firewalls and escape doors.

Since the transformer rooms will be separated by fire walls it is assumed that fire in a transformer room will not cause any fatalities.

The following assumptions have been used:

- The fire suppression system does not affect the transformers in a way that could lead to a longer disruption time.
- One functioning transformer per transformer room is assumed sufficient to stay in operation.
- Since there are redundant transformers and switchgear, there will be no disruption caused be power failure due to fire in a transformer room.



- The gaseous suppression will suppress the fire before the other transformer in the room is affected.
- In case of a fire in a transformer room there will be an average disruption of 1 hour in the tube where the transformer room is located in order to inspect the consequences of the fire.

The estimated cost for fire in transformer room is assumed to be \in 1.500 if suppression works (90%) and \in 150.000 if the suppression system does not work (10%).

It is assumed that there will be one metre between every vehicle. The calculations show that there will be on average 26 people trapped between the two fires and it is conservatively assumed that they will be fatally injured.

4.5.4 Dragged and dropped anchor

In this section the consequences in terms of fatalities and disruption of the tunnel due to dragged and dropped anchors are presented.

In the frequency assessment the initial event frequency is to be calculated in the nearest future, and the results of the calculations are expected to be included in the Operational Risk Analysis within the autumn 2014 revision.

The frequencies cover all types of accidents related to dragged and dropped anchors. The following two types of cases are considered:

- No damage or minor anchor damage to the tunnel and the protection layer
- Critical damage to the protection layer and the tunnel roof

The people that have just passed the accident location will drive out of the tunnel and the people approaching the accident location will be fatally injured. Based on calculations made for explosions it is assessed that there will be 215 fatalities on road and 17.4 fatalities or 19.4 FWSI on rail.

These calculations have also been used for sunken ship on tunnel. There will be 365 disruption days on both road and rail and it will cost €500 million to repair the tunnel.

4.5.5 Grounding ships

The ship grounding frequencies covers all types of groundings. In the following two types of groundings are considered:

- Groundings leading to no damage or minor damage to the tunnel and the protection layer
- Serious grounding leading to critical damage to the protection layer and the tunnel roof

For groundings giving minor damages the grounding ship will simply slide on the seabed and will not penetrate the seabed and the protection layer. Hence, there will be no fatalities amongst the tunnel users. However, the grounding in itself will lead to a stop in the tunnel operation during a period while it is investigated whether or not the grounding ship has damaged the tunnel roof after all. It is assumed that the disruption period will be approximately one day. Ship size 1 to 5 is not assumed to cause any greater damage to the tunnel in case of grounding. Only ship size 6 - 9 is assumed to provide serious damage by grounding.

For critical damage, the draught of the grounding ship must significantly exceed the water depth leading to a penetration of the protection layer and leading to serious tunnel roof damages and water ingress into the tunnel. It is assumed that the structural damage solely affects one tunnel tube.

It is assumed that the grounding will take place in coastal areas and that the water inflow into the tunnel tube will affect all persons in the tunnel tube. Further, it is conservatively assumed that the disruption is a total disruption covering all tunnel tubes. It is conservatively assessed that a grounding leading to a tunnel collapse will affect the people in the tunnel in the same way as an explosion in the end or beginning of the tunnel, see section 4.3.2.4.

In the explosions calculations it is assumed that vehicles in the road tubes that have just passed the accident location will drive out of the tunnel and the vehicles approaching the accident location will be affected by the accident. All trains in the tunnel will be affected by the accident.

In Section 4.1.2.1 is described the estimated distribution of number of persons in the railway tunnel.

It is assessed that there will be 365 days of disruption on both road and rail and it will cost \in 500 million to repair the tunnel.

4.6 Multiple simultaneous events

As no simultaneous events for rail are subject to detailed frequency calculation, no consequences are found for multiple simultaneous events for rail.

It is assessed that disruption and repair costs is included in the assessment of fire and toxic release on road and this section only include a consequence assessment in regard to fatalities.

The consequence that is assessed in this section is the consequences of multiple simultaneous events that could lead to persons being trapped in an area with smoke or toxic gas. In this context a toxic release has the same properties as smoke from a fire, but will not be covered in this analysis since a combination of these events is highly unlikely. It is assessed that it will contribute very little to the total number of fatalities per year on The Fehmarnbelt Fixed Link.

In the assessment it is assumed that the only scenario that is not included in the fire assessment is the scenario where two fires occur within 100 meters from each other where the emergency exits will be blocked. The fire frequencies for the entire fixed link have been scaled to the 100 meters in this assessment and are presented in Table 4-26.

Yearly frequency					
2025 8.18·10 ⁻⁸					
2045	1.90.10 ⁻⁷				

 Table 4-26 Scaled yearly fire frequency

In order to estimate the number of persons exposed, the number of vehicles within 100 m must be assessed. The estimated vehicle lengths are presented in Table 4-27.

Vehicles in a queue	Vehicle length [m]			
Cars	4.75			
Buses	16.5			
Lorries	13.7			

Table 4-27 Vehicle length

5. RISK

In this section the risk is presented for all scenarios. The risk is calculated by multiplying the frequencies and the consequences:

Risk = *frequency* · *consequence*

The risk is calculated and presented in terms of annual expected fatalities on road and rail, annual expected disruption days on road and rail and annual expected repair costs.

5.1 Ordinary road

The risk of ordinary road accidents in terms of fatalities, disruption and repair costs are presented in Table 5-1.

	Rail - FWSI		Di	Disruption [days]			
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]
2025	$1.6 \cdot 10^{-1}$	0	0	$2.5 \cdot 10^{-1}$	0	0	$1.6 \cdot 10^4$
2045	$1.3 \cdot 10^{-1}$	0	0	$2.9 \cdot 10^{-1}$	0	0	$1.9 \cdot 10^4$

Table 5-1 Risk of ordinary road accidents in terms of fatalities, FWSI, disruption and repair costs

From Table 5-1 it is seen that there will be no fatalities or disruption on rail caused by ordinary road accidents. Note that dangerous goods accidents are not included here.

5.2 Road accidents involving dangerous goods

In Table 5-2 the results for accidents involving dangerous goods are presented (ordinary road accidents not including dangerous goods are excluded).

		Rail ·	FWSI	D	Disruption [days]			
	Road - fat	Pass	Employees	Road [alone]	Rail [alone]	Simultaneous	Repair cost [euro]	
2025	2.3·10 ⁻³	$1.1 \cdot 10^{-4}$	5.8·10 ⁻⁶	1.0·10 ⁻³	0	1.7·10 ⁻³	$1.8 \cdot 10^{3}$	
2045	3.5·10 ⁻³	$1.1 \cdot 10^{-4}$	5.8·10 ⁻⁶	1.2·10 ⁻³	0	2.0·10 ⁻³	2.1·10 ³	

 Table 5-2 Risk from accidents involving dangerous goods on road in terms of fatalities, FWSI, disruption and repair costs

5.3 All road accidents

In Table 5-3 the results for road accidents - ordinary road accidents and road accident involving dangerous goods are presented.

		Rail - FWSI			Disruption [days]			
	Road - fat	Pass	Employees	Road [alone]	Rail [alone]	Simultaneous	Repair cost [euro]	
2025	$1.7 \cdot 10^{-1}$	0	0	$2.5 \cdot 10^{-1}$	0	1.7·10 ⁻³	$1.8 \cdot 10^{-4}$	
2045	$1.3 \cdot 10^{-1}$	0	0	2.9·10 ⁻¹	0	2.0·10 ⁻³	$2.1 \cdot 10^{-4}$	

Table 5-3 Risk from all road accidents in terms of fatalities, FWSI, disruption and repair costs

5.4 Fire (road)

5.4.1 Results for fire in road part, enclosed tunnel

The risk of fires in the tunnel road part in terms of fatalities, disruption and repair costs are presented in Table 5-4.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pas s	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	9.6·10 ⁻⁵	0	0	2.7·10 ⁻¹	0	5.0·10 ⁻²	$5.0 \cdot 10^4$	
2045	2.1·10 ⁻⁴	0	0	$5.1 \cdot 10^{-1}$	0	9.1·10 ⁻²	$1.1 \cdot 10^{5}$	

Table 5-4 Risk of fires in the enclosed tunnel road part in terms of fatalities, FWSI, disruption and repair costs

From Table 5-4 it is seen that the disruption on the rail is caused by the fire on road and therefore determines a simultaneous disruption of road and rail of 0.04 days in 2025 and 0.07 days in 2045.

5.4.2 Results for fire in road part, landsides

The results of fires on landsides are presented in Table 5-5.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	0	0	0	8.6·10 ⁻²	0	0	$5.1 \cdot 10^4$	
2045	0	0	0	$1.5 \cdot 10^{-1}$	0	0	$1.1 \cdot 10^{5}$	

 Table 5-5 Risk of fires in the road part of the land sides in terms of fatalities, FWSI, disruption and repair costs

It is seen that fires on the road part of the landsides are neither expected to lead to fatalities, nor disruption of the railway part.

5.5 Results – landsides and enclosed tunnel

The summarized results for the landsides and the enclosed tunnel are presented in Table 5-6.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	9.6·10 ⁻⁵	0	0	$3.5 \cdot 10^{-1}$	0	5.0·10 ⁻²	$1.0 \cdot 10^{5}$	
2045	2.1·10 ⁻⁴	0	0	$6.6 \cdot 10^{-1}$	0	9.1·10 ⁻²	2.2·10 ⁵	

 Table 5-6 Risk of fire in the road part of the total scope (landsides and enclosed tunnel) in terms of fatalities, FWSI, disruption and repair costs

It is seen that fires in the road part leads to about 0.3 days disruption of the road part (in 2025). Here it is conservatively not taken into account that it probably will be possible to use the other road for traffic in both directions, not by means of bi-directional traffic, but by shifting the traffic direction e.g. every hour.

Looking at the disruption time for the different fire sizes, by joining the results in Table 4-16 and Table 5-4 for the enclosed tunnel part, and Table 4-17 and Table 5-5 for the landsides part, the results per fire size can be obtained. From this it is seen that about 20% of the disruption time originates from fires with a size of 50 MW or more, i.e., very large fires that results in a long

disruption time. Subtracting the disruption time originating from very large fires, the average disruption time for road in 2025 is considerably less than 0.4 days per year.

5.6 Ordinary rail

The results from ordinary rail accidents, i.e. derailments and collision are presented in the next section.

5.6.1 Results ordinary rail

The consequences of ordinary rail in terms of fatalities, disruption and repair costs are presented in this section, not including accidents involving dangerous goods (these are presented in the following sections). In Table 5-7 the risk of derailments are presented.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	0	$1.8 \cdot 10^{-4}$	$1.6 \cdot 10^{-4}$	0	6.6·10 ⁻⁴	8.6·10 ⁻⁴	2.0·10 ²	
2045	0	1.8·10 ⁻⁴	2.4·10 ⁻⁴	0	1.0·10 ⁻³	1.3·10 ⁻³	2.9·10 ²	

Table 5-7 Risk of derailments in terms of fatalities, FWSI, disruption and repair costs

In Table 5-8 the risk of collisions between trains are presented.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	0	1.3·10 ⁻³	2.9·10 ⁻⁴	0	4.2·10 ⁻⁴	2.5·10 ⁻⁴	3.7·10 ²	
2045	0	1.3·10 ⁻³	3.9·10 ⁻⁴	0	5.1·10 ⁻⁴	3.4·10 ⁻⁴	5.2·10 ²	

Table 5-8 Risk of collisions between trains in terms of fatalities, FWSI, disruption and repair costs

In Table 5-9 the risk of train-object collisions are presented.

	Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employe es	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]
2025	1.7·10 ⁻⁶	$5.1 \cdot 10^{-4}$	2.6.10-4	0	3.4·10 ⁻⁴	3.3·10 ⁻⁴	1.9·10 ²
2045	2.7·10 ⁻⁶	5.1·10 ⁻⁴	3.6.10-4	0	4.7·10 ⁻⁴	4.4.10-4	2.8·10 ²

Table 5-9 Risk of train-object collisions in terms of fatalities, FWSI, disruption and repair costs

From Table 5-7, Table 5-8 and Table 5-9 it is seen that there will be no fatalities or disruption of the road part alone caused by ordinary rail accidents.

5.6.2 Rail accidents involving dangerous goods

In Table 5-10 the results from the consequence assessment for rail are presented.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employe es	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	7.4·10 ⁻⁶	1.4·10 ⁻⁶	1.4·10 ⁻⁷	0	2.2·10 ⁻⁴	7.0·10 ⁻⁵	4.6·10 ²	
2045	$1.1 \cdot 10^{-5}$	$1.7 \cdot 10^{-6}$	2.0·10 ⁻⁷	0	$3.1 \cdot 10^{-4}$	$1.0 \cdot 10^{-4}$	6.8·10 ²	

Table 5-10 Risk from collisions and derailments involving dangerous goods on rail in terms of fatalities,FWSI, disruption and repair costs

The injuries and fatalities in the road part caused by dangerous goods events in the railway part are considered as "others".

5.7 Fire (rail)

5.7.1 Results for fire in railway part, enclosed tunnel

The risk of fires in the enclosed tunnel rail part in terms of fatalities, disruption and repair costs are presented in Table 5-11.

		Rail - FWSI		Di	Disruption [days]			
	Road - fat	Pass	Employe es	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	0	5.2·10 ⁻⁵	$1.1 \cdot 10^{-6}$	8.6·10 ⁻⁴	8.4·10 ⁻³	8.6·10 ⁻⁴	$1.6 \cdot 10^{3}$	
2045	0	5.2·10 ⁻⁵	$1.1 \cdot 10^{-6}$	9.8·10 ⁻⁴	9.8·10 ⁻³	9.8·10 ⁻⁴	$1.8 \cdot 10^{3}$	

 Table 5-11 Risk of fires in the enclosed tunnel rail part in terms of fatalities, FWSI, disruption and repair costs

From Table 5-11 it is seen that disruption on the road part can be caused by a fire on rail and therefore determines a simultaneous disruption of road and rail of 0.015 days in 2025 and 0.028 days in 2045.

5.7.2 Results for fire in railway part, landsides

The risks of fires on landsides are presented in Table 5-12.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	0	0	0	0	9.2·10 ⁻²	0	3.0·10 ⁴	
2045	0	0	0	0	9.6·10 ⁻²	0	8.4·10 ³	

Table 5-12 Risk of fires in the landsides rail part in terms of fatalities, FWSI, disruption and repair costs

It is seen that fires on the rail part of the landsides are neither expected to lead to fatalities, nor disruption of the road part. It is seen to lead to a yearly average disruption of the railway of about 3.8 days per year in 2045.

5.7.3 Results for fire in railway part, landsides and enclosed tunnel

The summarized results for the landsides and the enclosed tunnel are presented in Table 5-13.

		Rail - FWSI		Di			
	Road - fat	Pass	Employe es	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]
2025	0	5.2·10 ⁻⁵	$1.1 \cdot 10^{-6}$	8.6·10 ⁻⁴	$1.0 \cdot 10^{-1}$	8.6·10 ⁻⁴	3.2·10 ⁴
2045	0	5.2·10 ⁻⁵	$1.1 \cdot 10^{-6}$	9.8·10 ⁻⁴	$1.1 \cdot 10^{-1}$	9.8·10 ⁻⁴	$1.0 \cdot 10^4$

 Table 5-13 Risk of fire in the road part of the total scope (landsides and enclosed tunnel) in terms of fatalities, FWSI, disruption and repair costs

5.8 External events

In the following sections the risk for the external events are presented.

5.8.1 Flooding

The risk of flooding in terms of fatalities, disruption and repair costs are presented in Table 5-14.

		Rail - FWSI		D	Disruption [days]				
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]		
2025	0	0	0	0	0	3.4·10 ⁻¹	0		
2045	0	0	0	0	0	3.4·10 ⁻¹	0		

Table 5-14 Risk of flooding in terms of yearly average fatalities, FWSI, disruption and repair costs

5.8.2 Sunken ship on tunnel

The risk of sunken ship on tunnel in terms of fatalities, disruption and repair costs are presented in Table 5-15.

		Rail - FWSI		D	Disruption [days]		
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]
2025	3.5·10 ⁻⁵	0	0	0	0	5.9·10 ⁻⁵	$8.1 \cdot 10^{1}$
2045	5.9·10 ⁻⁵	0	0	0	0	1.0.10-4	1.4·10 ²

Table 5-15 Risk of sunken ship on tunnel in terms of yearly average fatalities, FWSI, disruption and repair costs

5.8.3 Dragged and dropped anchor

The risk of dragged and dropped anchor in terms of fatalities, disruption and repair costs are presented in Table 5-16.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employe es	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	3.5·10 ⁻⁷	5.0·10 ⁻⁸	2.7·10 ⁻⁹	0	0	4.3·10 ⁻⁷	$1.5 \cdot 10^{0}$	
2045	5.9·10 ⁻⁷	8.3·10 ⁻⁸	4.6·10 ⁻⁹	0	0	7.1·10 ⁻⁷	$2.5 \cdot 10^{0}$	

Table 5-16 Yearly average risk due to dropped and dragged anchor in terms of fatalities, FWSI, disruption and repair costs

5.8.4 Grounding ship

The risk of grounding ships in terms of fatalities, disruption and repair costs are presented in Table 5-17.

		Rail -	FWSI	Di	/s]		
	Road - fat	Pass	Employe es	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]
2025	4.4·10 ⁻⁶	6.2·10 ⁻⁷	3.4·10 ⁻⁸	0	0	7.4·10 ⁻⁶	$1.0 \cdot 10^{1}$
2045	7.3·10 ⁻⁶	1.0·10 ⁻⁶	5.7·10 ⁻⁸	0	0	1.2·10 ⁻⁵	$1.7 \cdot 10^{1}$

 Table 5-17 Risk due to ship groundings on tunnel roof in terms of fatalities, FWSI, disruption and repair costs

5.8.5 Fire in transformer room

The risk of fire in transformer room in terms of fatalities, disruption and repair costs are presented in Table 5-18. From Table 5-18 it is seen that there will be no fatalities on rail or road caused by fire in transformer room.

		Rail - FWSI		D	Disruption [days]			
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]	
2025	0	0	0	0	0	1.7·10 ⁻³	$2.1 \cdot 10^{1}$	
2045	0	0	0	0	0	1.7·10 ⁻³	$2.1 \cdot 10^{1}$	

Table 5-18 Risk of fire in transformer room in terms of fatalities, FWSI, disruption and repair costs

5.8.6 Multiple simultaneous events

In the multiple event scenarios it has been assessed that only the scenario with two fires very close to each other could lead to fatalities.

		Rai	il - FWSI	D	isruption [day	s]	
	Road - fat	Pass	Employee s	Road [alone]	Rail [alone]	Simultaneou s	Repair cost [euro]
2025	2.0·10 ⁻⁶	0	0	*	*	*	*
2045	4.6·10 ⁻⁶	0	0	*	*	*	*

Table 5-19 Risk of two fires in terms of fatalities, FWSI, disruption and repair costs

*Disruption and repair costs are assessed under fire, toxic releases and traffic accident respectively.

5.8.7 Qualitative assessments of maintenance operations

In general there has been focus on developing a tunnel design that ensures optimal conditions for workers and maintenance personnel.

The whole maintenance strategy and philosophy has been described in detail in ref. [20]. Some main points regarding safety are:

- A significantly part of the maintenance work is located in the special elements
- Maintenance workers may park the car in separate lay-by in the special elements hence no parking is done in e.g. emergency lane.
- The worker can go directly to the service rooms from the lay-by
- In order to get controlled access to the other side of the tubes, the worker can use a channel located under the road hence the worker does not have to pass the road with traffic.
- All installation rooms have two separate doors to ensure the possibility for safe escape

Hence, no maintenance workers are expected to be harmed due to maintenance work in the tunnel and landsides.

6. **RESULTS**

6.1 Acceptance criteria

The calculated risk acceptance criteria are presented in Table 6-1.

Risk Acceptance Criteria	2025	2045		
Risk to road users (FAT/year)	0.223	0.174		
Risk to rail passengers (FWSI/year)	3.09·10 ⁻³	3.09·10 ⁻³		
Risk to rail employees (FWSI/year)	1.09·10 ⁻²	1.49·10 ⁻²		
Risk to level crossing users (FWSI/year)	-	-		
Risk to others (FWSI/year)	3.67·10 ⁻³	4.98·10 ⁻³		
Risk to unauthorized persons on premises (FWSI/year)	0.136	0.185		
Third party risk (FWSI/year)	To be updated autumn 2014			
Societal risk (FAT/year)	To be updated	autumn 2014		
Risk of disruption to road (days/year)	6.5	6.5		
Risk of disruption to rail (days/year)	0.6	0.6		
Risk of simultaneous disruption (days/year)	0.6	0.6		
Environmental risk (Euro/year)	-	-		

 Table 6-1 Risk acceptance criteria

The simultaneous disruption for road and rail is bounded by the acceptance criterion on the disruption of the railway, which is estimated to 0.6 days.

6.2 Individual risk

The overall risk for the individual risk on road and rail is presented in Table 6-2.

	2025	2045
Fatalities/FWSI	Per year	Per year
Fatalities road	0.165	0.131
FWSI rail passengers	2.60·10 ⁻³	2.78·10 ⁻³
FWSI rail employees	8.81.10-4	1.22.10-3

Table 6-2 Individual risk

Comparing the acceptance criteria presented in Table 6-1 with the estimated risk Table 6-2, it is seen that the individual risk is acceptable for both road and rail.

	Percentage of acceptance criteria				
Year	2025 2045				
Fatalities road	74.0%	75.1%			
FWSI rail passengers	84.2%	90.0%			
FWSI rail employees	8.0%	8.2%			

 Table 6-3 Calculated risk in percentages of the acceptance criteria

In Table 6-4 the calculated risk for "others" and the percentages of the acceptance criteria is shown. It is seen that the risk for "others" is acceptable.

	"Other" FWSI	Percentage of acceptance criteria
2025	1.15·10 ⁻⁵	0.31%
2045	1.72·10 ⁻⁵	0.35%

Table 6-4 Calculated risk for "others" (fatalities per year) and percentages of the acceptance criteria



The contributors to fatalities on road for 2025 are shown in Table 6-5.

Fatalities on road	Fatalities per year in 2025	Percentage
Ordinary road	$1.63 \cdot 10^{-1}$	98.55%
Fire	9.58·10 ⁻⁵	0.06%
Dangerous goods - road	2.25·10 ⁻³	1.36%
Dangerous goods - rail	7.42·10 ⁻⁶	0.004%
External events	4.15·10 ⁻⁵	0.03%
Total	1.65·10 ⁻¹	100%

Table 6-5 Contributors to fatalities per year on road in 2025

It is seen that ordinary road accidents constitute the most significant risk of fatalities on the road with a minor contribution from dangerous goods. Fire and external events contribute very little to the total number of fatalities.

The contributors to passenger fatalities on rail for 2025 are shown in Table 6-6.

Fatalities on rail	Fatalities per year in 2025	Percentage
Ordinary rail	1.74E·10 ⁻³	93.70%
Fire	3.69·10 ⁻⁵	1.99%
Dangerous goods - rail	9.82·10 ⁻⁷	0.05%
Dangerous goods - road	7.51·10 ⁻⁵	4.04%
External events	4.01.10-6	0.22%
Total	1.86·10 ⁻³	100%

Table 6-6 Contributors to passenger fatalities per year on rail in 2025

The contributors to employee fatalities on rail for 2025 are shown in Table 6-7.

Fatalities on rail	Fatalities per year in 2025	Percentage
Ordinary rail	6.24·10 ⁻⁴	99.09%
Fire	7.76·10 ⁻⁷	0.12%
Dangerous goods - rail	9.51·10 ⁻⁸	0.02%
Dangerous goods - road	4.12·10 ⁻⁶	0.65%
External events	7.63·10 ⁻⁷	0.12%
Total	6.30·10 ⁻⁴	100%

 Table 6-7 Contributors to employee fatalities per year on rail in 2025

It is seen that ordinary rail accidents constitutes the most significant risk of fatalities on the rail, with a smaller contribution from dangerous goods. Fire contributes about 1.99% of the fatalities. Dangerous goods contribute about 4% in total, with the large part originating from dangerous goods accidents in the road part.

In Table 6-8 it is shown how collisions, derailments and train-object collisions contribute to the total risk on rail for ordinary rail accidents.

Fatalities on rail	Fatalities per year in 2025	Percentage
Derailments	1.28.10-4	7.34%
Trains collisions	1.25.10-3	71.84%
Collision with objects	3.62.10-4	20.82%
Ordinary rail	1.74·10 ⁻³	100%

Table 6-8 Contributors to fatalities per year on rail in 2025 for ordinary rail accidents

It is seen that 71.8% of the fatalities on rail are due to train collisions.

6.3 Societal risk

Section to be updated during autumn 2014.

6.4 Disruption risk

In the following section the disruption risk for road, rail and simultaneous disruption is presented.

6.4.1 Disruption road

The total number of disruption days per year for road and the contributing factors for 2025 are seen in Table 6-9. It is seen that fire (road and rail) contributes most (40.4%), while external events and ordinary road accidents also give significant contributions with 34% and 25.2% respectively.

Disruption road	Contribution	Percentage
Ordinary road	2.51·10 ⁻¹	25.20%
Ordinary rail	1.43·10 ⁻³	0.14%
Fire, road	4.01.10-1	40.30%
Fire, rail	5.33·10 ⁻⁴	0.05%
Dangerous goods – road	2.72·10 ⁻³	0.27%
Dangerous goods – rail	7.30·10 ⁻⁵	0.007%
External events	3.39·10 ⁻¹	34.03%
Total	9.96·10 ⁻¹	100%

 Table 6-9 Total number of disruption days for road and the contributing factors (2025)

An FN-curve for the disruption of the road part for 2025 is shown in Figure 6-1.



Figure 6-1 FN-curve for the disruption of the road part (one tube only) (2025)

It is seen that there is no violation of the upper-limit, and hence the calculated risk of disruption of the road part is considered acceptable.

It is highlighted that for most of the time where the road is disrupted, only one of the two road tubes are disrupted. The time where both road tubes are disrupted constitutes about 20% of the total disruption time.

6.4.2 Disruption rail

The total number of disruption days for rail in 2025 and the contributing factors are seen in Table 6-10. It is seen that the railway part is expected to be closed for about 0.495 days a year and that fire contribute with 52.7% and that external events (due to flooding of substations) contribute with 40.7%.

Disruption rail	Contribution	Percentage
Ordinary road	0	0%
Ordinary rail	2.78·10 ⁻³	0.56%
Fire, road	5.04·10 ⁻²	10.18%
Fire, rail	$1.01 \cdot 10^{-1}$	20.40%
Dangerous goods – road	1.71·10 ⁻³	0.35%
Dangerous goods – rail	$3.03 \cdot 10^{-4}$	0.06%
External events	3.39·10 ⁻¹	68.45%
Total	4.95·10 ⁻¹	100%

 Table 6-10 Total number of disruption days for the rail and the contributing factors (2025)

Disruption - rail 2025 Lower acceptable limit _____Upper acceptable limit Disruption risk curve 1.E+00 more disruption days 1.E-01 1.E-02 Yearly frequency 1.E-03 1.E-04 1.E-05 1.E-06 1.E-07 1 10 100 ы z Number of days

An FN-curve for the disruption of the rail part in 2025 is shown in Figure 6-2.

Figure 6-2: FN-curve for the disruption of the rail part (only one rail tube)

It is seen that there is violations of the upper-limit. This clearly follows that the mean value (for disrupting the railway) is larger than the acceptance criterion.

6.4.3 Simultaneous disruption of road and rail

Sections 6.4.1 and 6.4.2 presented the disruption of the road and rail respectively. Some of these disruptions will happen simultaneously, such that both the road and rail part are closed at the same time.

Disruption	2025	2045	Acceptance Criteria
Disruption, road alone [days per year]	0.60	0.96	6.5
Disruption, rail alone [days per year]	0.10	0.11	0.6
Disruption, simultaneous [days per year]	0.39	0.44	0.6

 Table 6-11 Simultaneous disruption times

In Table 6-9 and Table 6-10 it is seen that the individual road and rail parts are disrupted about 0.996 and 0.495 days respectively days in 2025, and about 0.40 of a day simultaneously, in 2025.

An FN-curve for the simultaneous disruption is shown in Figure 6-3.

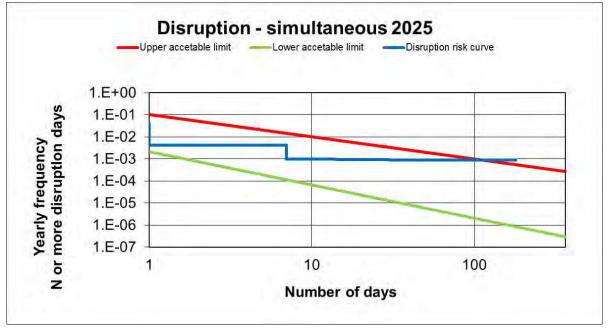


Figure 6-3: FN-curve for the simultaneous disruption of road and rail

It is seen that there is violations of the upper-limit. This clearly follows that the mean value (for disrupting the railway) is larger than the acceptance criterion.

6.5 Total risk cost

In this section the total cost of all risk contributions are summarized.

Million Euros	2025	2045	2025	2045
Fatalities	0.521	0.575	16.0%	9.0%
Societal loss				
Disruption, road alone	0.991	2.963	30.4%	46.1%
Disruption, rail alone	0.061	0.128	1.9%	2.0%
Disruption, simultaneous	0.922	1.891	28.3%	29.4%
Owner loss				
Disruption, road alone	0.338	0.096	10.4%	1.5%
Disruption, rail alone	0.013	0.022	0.4%	0.3%
Disruption, simultaneous	0.260	0.462	8.0%	7.2%
Repair cost	0.152	0.286	4.7%	4.5%
Total	3.258	6.422	100.0%	100.0%



Table 6-12 Total risk cost in million Euros

From Table 6-12 it is seen that the total risk cost is about \in 3.26 million Euros in 2025 and \in 6.42 millions in 2045.

In Table 6-13 the societal cost and owners' loss are amalgamated, and are graphically represented in Figure 6-4.

Euro	2025	2045	2025	2045
Fatalities	0.521	0.575	16.0%	9.0%
Disruption, road alone	1.329	3.058	40.8%	47.6%
Disruption, rail alone	0.074	0.150	2.3%	2.3%
Disruption, simultaneous	1.182	2.352	36.3%	36.6%
Repair cost	0.152	0.286	4.7%	4.5%
Total	3.258	6.422	100.0%	100.0%

Table 6-13 Total costs in million Euros

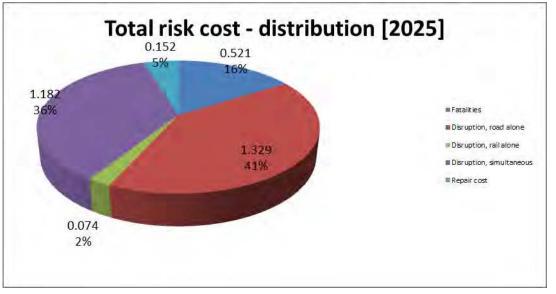


Figure 6-4 Total risk cost distribution

From Figure 6-4 it is seen that most of the risk costs – about 80% - originate from disruption, while repair costs and cost of fatalities costs are about 5% and 16% respectively.

Again it is underlined that the cost for disruption for road has been based on disruption of a single road tube only. This is very conservative because a single road tube is still available in most of the cases.

6.6 Impact of the dangerous goods restrictions on railway

The results presented in the previous sections do not take the restrictions in relation to dangerous goods into account (see section 4.4.4.).

In order to clarify the impact of the DG restrictions the results with and without DG restrictions are presented in Table 6-14.

Fatalities on road	Contribution	Contribution	Difference	Reduction
Ordinary road	$1.63 \cdot 10^{-1}$	$1.63 \cdot 10^{-1}$	0	
Fire	9.58·10 ⁻⁵	9.58·10 ⁻⁵	0	
Dangerous goods - road	2.25·10 ⁻³	2.25·10 ⁻³	0	
Dangerous goods - rail	7.42·10 ⁻⁶	5.13·10 ⁻⁶	2.29·10 ⁻⁶	30.9%
External events	4.15·10 ⁻⁵	4.15·10 ⁻⁵	0	
Total	1.65·10 ⁻¹	1.65·10 ⁻¹	2.29·10 ⁻⁶	0.001%

Fatalities on rail passengers	Contribution	Contribution	Difference	Reduction
Ordinary rail	1.74·10 ⁻³	1.45·10 ⁻³	2.93·10 ⁻⁴	16.8%
Collisions	1.25·10 ⁻³	9.57·10 ⁻⁴	2.93·10 ⁻⁴	23.4%
Derailment	1.28·10 ⁻⁴	1.28.10-4	0	
Collision with object	3.62·10 ⁻⁴	3.62·10 ⁻⁴	0	
Fire	3.69·10 ⁻⁵	3.69·10 ⁻⁵	0	
Dangerous goods - rail	7.05·10 ⁻⁷	0	7.05·10 ⁻⁷	100.0%
Dangerous goods - road	7.51·10 ⁻⁵	7.51·10 ⁻⁵	0	
External events	4.01·10 ⁻⁶	4.01·10 ⁻⁶	0	
Total	1.86·10 ⁻³	1.56·10 ⁻³	2.94·10 ⁻⁴	15.8%

Fatalities on rail employees	Contribution	Contribution	Difference	Reduction
Ordinary rail	6.24·10 ⁻⁴	5.53·10 ⁻⁴	7.10·10 ⁻⁵	11.4%
Collisions	2.76·10 ⁻⁴	2.05·10 ⁻⁴	7.10·10 ⁻⁵	25.8%
Derailment	$1.60 \cdot 10^{-4}$	1.60·10 ⁻⁴	0	
Collision with object	$1.89 \cdot 10^{-4}$	1.89·10 ⁻⁴	0	
Fire	7.76·10 ⁻⁷	7.76·10 ⁻⁷	0	
Dangerous goods - rail	8.09·10 ⁻⁸	3.83·10 ⁻⁸	4.25·10 ⁻⁸	52.6%
Dangerous goods - road	4.12·10 ⁻⁶	4.12·10 ⁻⁶	0	
External events	2.20·10 ⁻⁷	2.20·10 ⁻⁷	0	
Total	6.29·10 ⁻⁴	5.58·10 ⁻⁴	7.10·10 ⁻⁵	11.3%

Table 6-14 Impact of dangerous goods restriction on road users, rail passengers and employees

The following can be concluded:

- Impact from DG on rail on the road passengers is reduced with about 31%, however the reduction corresponds to only $2.29 \cdot 10^{-6}$ fatality per year
- With the restriction no impact on railway passengers can be detected, which is a reduction of 7.05·10⁻⁷. However, it is interesting that DG on road contribute with two orders of magnitude more.
- Due to the restrictions some collisions are avoided between DG trains and other trains. This
 reduces the FWSI-figure on railway passengers with 2.93·10⁻⁴ and the FWSI-figure for
 railway employees with 7.10·10⁻⁵.
- The absolute reduction directly related to the dangerous goods on rail for railway passengers is $7.05 \cdot 10^{-7}$, corresponding to 0.04% of the total risk for this safety target
- The absolute reduction directly related to the dangerous goods on rail for railway employees is $4.25 \cdot 10^{-8}$, corresponding to 0.007% of the total risk for this safety target

The relative low impact on the railway passengers and railway employees indicates that restriction to dangerous goods transportation in the railway tunnel do not have a significant impact on the safety.

7. **REVISIONS**

This issue (revision 6) of the Operational Risk Analysis (ORA) delivered in June 2014 is an update of the earlier ORA report delivered in August 2013 (revision 5).

The previous versions are:

- Revision 4, October 2012
- Revision 3, January 2011
- Revision 2, October 2010
- Revision 1, June 2010

The revisions are described in detail in the following sections.

7.1 Revision 6

This update of the ORA contains the following larger changes:

- The lengths for the enclosed tunnel and landsides for both road and rail are updated.
- The traffic forecast is updated.
- The dangerous goods forecast is updated.
- The risk and acceptance criteria for the railway part are described for each common safety target in accordance with CSM including dividing the individual risk for rail into passenger risk and risk for employees, and all topics from TSI are covered in the ORA.
- The risk model is updated with a model for how often a dangerous goods wagon on a freight train will be involved in an accident.
- Instead of having one number for fatalities on rail for the catastrophic scenarios a distribution is made including the probability of having different combinations of train in the same tube as the accident and different combinations of train in the other tube.
- The risk model is setup with the restrictions for dangerous goods on the railway. The restrictions can be turned on/off separately to see the effect of each of the restrictions.
- Collisions with objects are included in the risk model.
- Fire detection is no longer part of the risk model in the railway part.
- The mechanical effects of the accidents on rail are included in the dangerous goods accidents.

Individual risk

The above changes (and more minor changes) lead to changes in the individual risk on road and rail as shown in Table 7-2 and Table 7-2.

	2025			2045		
	Individual Risk	Acceptable Risk	Fraction of acceptab le risk	Individu al Risk	Accepta ble Risk	Fraction of accep- table risk
Road fatalities	0.17	0.22	74.0%	0.13	0.17	75.1%
Rail - FWSI - passengers	2.60·10 ⁻³	0.0031	84.2%	2.78·10 ⁻³	0.00309	90.0%
Rail - FWSI – employees	8.81·10 ⁻⁴	0.0109	8.0%	1.22·10 ⁻³	0.01486	8.2%
Rail - FWSI – Others	1.15·10 ⁻⁵	0.0035	0.3%	1.72·10 ⁻⁵	0.00346	0.5%

 Table 7-1 Individual risk in revision 6.

		2025		2045	
		Acceptance criteria	Result fatalities per billion person passages	Acceptance criteria	Result fatalities per billion person passages
Revision 5	Road	20.92	5.0	10.46	2.6
Revision 5	Rail	7.54	3.5	8.35	3.5

Table 7-2 Risk to individual life safety revision 5

The numbers in Table 7-1 and Table 7-2 are not directly comparable due to several things. First of all it is decided to communicate the risk in FWSI per year (instead of per passage) and the risk is furthermore split into different safety targets (passengers, employees and others).

Total cost

The changes lead to changes in the total costs for road and rail as shown in Table 7-3.

		2025	2045
	Fatalities	0.521	0.575
	Disruption, road alone	1.329	3.058
Revision 6	Disruption, rail alone	0.074	0.150
	Disruption, simultaneous	1.182	2.352
	Repair cost	0.152	0.286
	Total	3.258	6.422
	Fatalities	0.162	0.189
	Disruption, road alone	0.881	2.801
Revision 5	Disruption, rail alone	0.319	0.684
	Disruption, simultaneous	1.191	2.358
	Repair cost	0.187	0.324
	Total	2.740	6.356

 Table 7-3 Comparison of total costs in million Euros for revision 6 and 5

Disruption

Table 7-4 presents a comparison of the disruption risk for the years 2018/2025 and 2038/2045 for revision 5 and 4.

		2025		2045	
		Accepta nce criteria	Disruption days per year	Accepta nce criteria	Disruption days per year
	Disruption, road alone [days per year]	6.50	0.60	6.50	0.96
Revision 6	Disruption, rail alone [days per year]	0.6	0.10	0.6	0.11
	Disruption, simultaneous [days per year]	0.0	0.39	0.0	0.44
	Disruption, road alone [days per year]	6.50	0.63	6.50	1.00
Revision 5	Disruption, rail alone [days per year]	0.6	0.44		0.52
	Disruption, simultaneous [days per year]	0.6	0.40	0.6	0.44

Table 7-4 Comparison of the disruption risk measured in days for revision 6 and 5



7.2 Revision 5

This update of the ORA contains the following changes:

- The reference years are changed to 2025 and 2045 on request from Femern A/S to ensure better alignment with design reports.
- The risk acceptance criterion for rail is based on the common safety targets (CST) which contains national reference values (NRV). The NRV for passengers is added a contribution from freight train drivers to include these in the analysis.
- The suppression system is no longer a part of the railway design, and this is now reflected the calculations.
- In all tables with fatalities in the railway part, an extra column has been inserted with the corresponding FWSI results.
- New data material from the European Railway Accident Information Links is used as basis for the derailment and collision frequencies.
- The forecast for dangerous goods on railway is updated to contain a small amount of explosives.
- Changes due to the CSM-RA assessment Phase I of RINA S.P.A./SINTEF Added general sections for improving the readability in relation to the railway part.
- An appendix is added to the accident frequencies report ref. [28] containing description of safety related functions and probability of failure on demand.

	Revis	Revision 4		sion 5
Road Traffic	2018	2038	2025	2045
Annual average daily traffic (AADT) [veh/day]	9856	16113	11723	19288
Cars	8325	12865	9819	15221
Cars (prof. activities) 30%	2497	3859	2946	4566
Cars (private use) 70%	5828	9006	6873	10655
Lorries	1395	3057	1751	3851
Coaches	136	191	153	215
Average person per vehicle	2.39		2	.4
Cars (prof. activities)	1	.2	1	.2
Cars (private use)	2	.9	2	.9
Lorries	1		1.0	
Coaches	35		35.0	
Average load per lorry in tons	15	5.5	15.5	

The data for the traffic forecast used in ORA revision 5 and revision 4 is presented in Table 7-5.

	Revision 4		Revis	sion 5
Rail Traffic	2018	2038	2025	2045
Average number of freight trains per day	49.0	113	78	96
Average number of passenger trains per day	40.0	40	40	40
Passengers per passenger train	9	95	95	
Operators/workers per trains		3	3	
Average load per freight wagon (ton)	17.7		17.7	
Number of wagons per freight train	30		30	

 Table 7-5 Traffic data for ORA revision 5 and revision 4

The change in traffic volume affects all results since the number of accidents per year is calculated based on number of vehicle or rolling stock kilometres in the tunnel per year.

Individual risk

The above changes lead to changes in the individual risk on road and rail as shown in Table 7-6.

		2018/2025		2038/2045	
		Acceptance criteria	Result fatalities per billion person passages	Acceptance criteria	Result fatalities per billion person passages
Revision 5	Road	20.92	5.0	10.46	2.6
(2025 and 2045)	Rail	7.54	3.5	8.35	3.5
Revision 4	Road	26.67	18.8	13.34	5.0
(2018 and 2038)	Rail	1.95	2.4	1.95	2.8

Table 7-6 Comparison of risk to individual life safety between results in revision 5 and 4

Total cost

The changes lead to changes in the total costs for road and rail as shown in Table 7-7.

		2018/2025	2038/2045
	Fatalities	0.162	0.189
	Disruption, road alone	0.881	2.801
Revision 5	Disruption, rail alone	0.319	0.684
(2025 and 2045)	Disruption, simultaneous	1.191	2.358
	Repair cost	0.187	0.324
	Total	2.740	6.356
	Fatalities	0.564	0.332
	Disruption, road alone	1.196	2.648
Revision 4	Disruption, rail alone	0.223	0.795
(2018 and 2038)	Disruption, simultaneous	1.163	2.267
	Repair cost	0.143	0.292
	Total	3.290	6.333

 Table 7-7 Comparison of total costs in million Euros for revision 5 and 4

Disruption

Table 7-8 presents a comparison of the disruption risk for the years 2018/2025 and 2038/2045 for revision 5 and 4.

		2018/2025		2038	3/2045
		Accepta nce criteria	Disruption days per year	Accepta nce criteria	Disruption days per year
Revision 5	Disruption, road alone [days per year]	6.50	0.63	6.50	1.00
(2025 and 2045)	Disruption, rail alone [days per year]	0.6	0.44	0.6	0.52
2043)	Disruption, simultaneous [days per year]	0.0	0.40	0.0	0.44
Devision 4	Disruption, road alone [days per year]	6.50	0.54	6.50	0.70
Revision 4 (2018 and 2038)	Disruption, rail alone [days per year]	0.6	0.31	0.6	0.6
	Disruption, simultaneous [days per year]	0.6	0.39	0.6	0.42

Table 7-8 Comparison of the disruption risk measured in days for revision 5 and 4

7.3 Revision 4

This update of the ORA is based on a request from Femern A/S to ensure that the Operational Risk Analysis incorporates the changes made in the design since revision 3 of the ORA was made in February 2011. These changes include changes in the length of the tunnel. The changes have affected basically all the results; on road in relation to individual risk (and subsequently societal risk), on individual risk on railway and also the risk of disruption.

The railway update concerns a new acceptance criteria based on National Reference Values see ref. [22], and update of a range of datasets. The latter include newer accidents data for ordinary rail accidents, time schedules for the train traffic and actual distribution of passengers on passenger trains. Furthermore, statistics on fires for different types of trains have been carried out. Finally, the traffic work of trains has been updated.

In the two previous revisions of the ORA, there was a high focus on aligning the risk analyses for the bridge and the tunnel solutions, and as a result of this, the landsides where excluded from the scope. The cross-overs on the landsides are taken into account in the present revision.

New acceptance criteria for disruption on the railway have been adopted from RAM work, ref. [24].

The location of substations and control-center have changed from on top of the tunnel portal to besides the tunnel, this has implied that the risk of flooding of substations and control-center has increased. This is analysed in the present revision.

A new hazard has been taken into account, namely damage to persons due to train in motion.

Furthermore, updates have been carried out regarding sunken ships on runnel roof, grounding ships on tunnel roof and dropped and dragged anchor.

The change in frequency and consequences for road accidents leads to changes in the individual risk on road as shown in Table 7-9.

		2018		2038	
		Acceptance criteria	Result fatalities per billion person passages	Acceptance criteria	Result fatalities per billion person passages
Revision 4	Road	26.67	18.8	13.34	5.0
Revision 4	Rail	1.95	2.4	1.95	2.8
Revision 3	Road	18.14	13.30	9.07	7.01
	Rail	3.06	2.26	3.06	2.84

 Table 7-9 Comparison of risk to individual life safety between results in revision 4 and 3

The change in frequency for road accidents leads to changes in the total costs for road as shown in Table 7-10.

		2018	2038
	Fatalities	0.564	0.332
	Disruption, road alone	1.196	2.648
Revision 4	Disruption, rail alone	0.223	0.795
Revision 4	Disruption, simultaneous	1.163	2.267
	Repair cost	0.143	0.292
	Total	3.290	6.333
	Fatalities	0.324	0.374
	Disruption, road alone	0.74	1.847
Revision 3	Disruption, rail alone	0.067	0.24
REVISION 5	Disruption, simultaneous	0.198	0.606
	Repair cost	0.082	0.161
	Total	1.411	3.228

 Table 7-10 Comparison of total costs in million Euros for revision 4 and 3

Table 7-11 presents a comparison of the disruption risk for the years 2018 and 2038 for revision 4 and 3.

		2018		2038	
		Acceptance criteria	Disruption days per year	Acceptance criteria	Disruption days per year
	Disruption, road alone [days per year]	6.50	0.54	6.50	0.70
Revision 4	Disruption, rail alone [days per year]	0.6	0.31	0.6	0.6
4	Disruption, simultaneous [days per year]	0.0	0.39	0.0	0.42
	Disruption, road alone [days per year]	6.5	0.33	6.5	0.54
Revision 3	Disruption, rail alone [days per year]	6.5	0.09	6.5	0.18
	Disruption, simultaneous [days per year]	1.3	0.06	1.3	0.11

 Table 7-11 Comparison of the disruption risk measured in days for revision 4 and 3

7.4 Revision 3

This update of the ORA is based on a request from Femern A/S to ensure as much as possible a consistent approach between the bridge and tunnel solutions. The changes have affected the results on road in relation to individual risk (and subsequently societal risk) and also the risk of disruption.

The update concerns the calculations based on statistical data from the Danish Road Directorate (VIS-database). The VIS-database has been used to calculate the percentage of the accidents on Danish motorways is relevant for the Fehmarnbelt Fixed Link. The same method has previously been used in revision 2, however in revision 3 a more conservative approach has been used, and the accidents in the database has been studied more in detail.

The change in frequency and consequences for road accidents leads to changes in the individual risk on road as shown in Table 7-12.

		2018		20	38
		Acceptance criteria	Result fatalities per billion person passages	Acceptance criteria	Result fatalities per billion person passages
Devision 2	Road	18.14	13.30	9.07	7.01
Revision 3	Rail	3.06	2.26	3.06	2.84
Revision 2	Road	18.14	10.7	9.07	5.6
Revision 2	Rail	3.06	2.26	3.06	2.84

Table 7-12 Comparison of risk to individual life safety between results in revision 3 and 2

The change in frequency for road accidents leads to changes in the total costs for road as shown in Table 7-13.

		2018	2038
	Fatalities	0.402	0.463
	Disruption, road alone	0.731	1.832
Revision 3	Disruption, rail alone	0.067	0.240
Revision 5	Disruption, simultaneous	0.198	0.605
	Repair cost	0.082	0.161
	Total	1.479	3.301
	Fatalities	0.324	0.374
	Disruption, road alone	0.74	1.847
Revision 2	Disruption, rail alone	0.067	0.24
REVISION 2	Disruption, simultaneous	0.198	0.606
	Repair cost	0.082	0.161
	Total	1.411	3.228

 Table 7-13 Comparison of total costs in million Euros for Revision 3 and 2

Table 7-14 presents a comparison of the disruption risk for the years 2018 and 2038 for revision 3 and 2.

		2018		2038	
		Acceptance criteria	Disrupt ion days per year	Acceptance criteria	Disrupt ion days per year
	Disruption, road alone [days per year]	6.5	0.33	6.5	0.54
Revisio	Disruption, rail alone [days per year]	6.5	0.09	6.5	0.18
n 3	Disruption, simultaneous [days per year]	1.3	0.06	1.3	0.11
	Disruption, road alone [days per year]	6.5	0.34	6.5	0.55
Revisio n 2	Disruption, rail alone [days per year]	6.5	0.09	6.5	0.18
	Disruption, simultaneous [days per year]	1.3	0.06	1.3	0.11

 Table 7-14 Comparison of the disruption risk measured in days for Revision 3 and 2

7.5 Revision 2

This update of the ORA is based on a request from Femern A/S to ensure as much as possible a consistent approach between the bridge and tunnel solutions. The changes have affected the results both for road and rail in relation to individual risk (and subsequently societal risk) and also the risk of disruption. The update consists of two parts:

- Update of the fatalities per accident for road accidents
- Update of the tunnel length

The fatality per accident has been updated based on a benchmark suggested by Femern A/S, which have affected the results for fatalities on road, see Table 7-15. In revision 1 the number of fatalities per kilometre in 2018 and 2038 was calculated, based on a decreasing statistical trend. In revision 1 the half-life period was estimated to be 9.5 years. Femern A/S has requested that a more conservative approach is used and that the half-life period should be 20 years. Because of the more conservative approach the acceptance criteria between rev 1 and 2 have been increased, as shown in Table 7-15.

The tunnel length has changed between revisions 1 and 2 of the ORA from 25.4 km to 18.14 km. The scope is now identical in both the bridge and tunnel risk analyses enabling a more direct comparison to be made. The new scope includes the tunnel structure only. However, it should be noted that the risk figures should now only be used comparatively as they no longer represent the absolute risk. The absolute risk would incorporate the entire tunnel structure in addition to the landside road and railway to the hinterland connections. The change in length leads to changes in the acceptance criteria for individual risk on road and rail as shown in Table 7-15.

		2018		20	38
		Acceptance criteria	Result fatalities per billion person passages	Acceptance criteria	Result fatalities per billion person passages
Revision 2	Road	18.14	10.7	9.07	5.6
Revision 2	Rail	3.82	2.26	3.89	2.84
Revision 1	Road	9.70	7.90	2.30	1.90
	Rail	4.40	3.70	4.40	4.00

 Table 7-15 Comparison of risk to individual life safety between results in revision 2 and 1

 2018
 2038

 Fatalities
 0.324
 0.374

 Disruption, road alone
 0.740
 1.847

 Disruption, rail alone
 0.067
 0.240

Table 7-16 present a comparison of the results for the total costs for years 2018 and 2038 for both revisions 1 and revision 2.

	ratantics	0.52-1	0.374
Revision 2	Disruption, road alone	0.740	1.847
	Disruption, rail alone	0.067	0.240
	Disruption, simultaneous	0.198	0.606
	Repair cost	0.082	0.161
	Total	1.411	3.227
	Fatalities	0.248	0.146
	Disruption, road alone	1.051	5.373
Revision 1	Disruption, rail alone	1.459	5.202
Revision 1	Disruption, simultaneous	0.199	0.601
	Repair cost	0.396	0.828
	Total	3.354	12.151

Table 7-16 Comparison of total costs in million Euros between results in Revision 2 and 1



Table 7-17 present a comparison of the disruption risk for years 2018 and 2038 for both revision 1 and revision 2.

		2018		2038	
		Acceptance criteria	Disrupt ion days per year	Acceptance criteria	Disrupt ion days per year
	Disruption, road alone [days per year]	6.5	0.34	6.5	0.55
Revisio n 2	Disruption, rail alone [days per year]	6.5	0.09	6.5	0.18
	Disruption, simultaneous [days per year]	1.3	0.06	1.3	0.11
	Disruption, road alone [days per year]	6.5	0.48	6.5	0.67
Revisio n 1	Disruption, rail alone [days per year]	6.5	2.00	6.5	3.96
	Disruption, simultaneous [days per year]	1.3	0.06	1.3	0.11

Table 7-17 Comparison of disruption risk between results in Revision 1 and 2

The numbers from revision 1 is used if not updated in revision 2.

7.6 Revision 1

The first update of the ORA was necessary as a result of changes in design parameters and to ensure as much as possible a consistent approach between the bridge and tunnel solutions.

The following inputs to the calculations have been changed between revisions 0 and 1 of this report:

- Road accident frequency
- Road accident fatalities
- Road fire frequency
- Road fire fatalities
- Tunnel length
- Traffic data

The changes have affected the results both for road and rail in relation to individual risk (and subsequently societal risk) and also the risk of disruption. Table 7-18 present a comparison of the results for years 2018 and 2038 for both revision 0 and revision 1.

		2018		20	38
		Acceptance criteria	Fatalities per billion passages	Acceptance criteria passages	
Revision 1	Road	9.7	7.9	2.3	1.9
Revision 1	Rail	4.4	3.7	4.4	4.0
Devision 0	Road	26.5	19.9	26.5	20.7
Revision 0	Rail	3.8	2.76	3.8	3.2

Table 7-18 Comparison of risk to individual life safety between results in Revision 1 and 0

Note that in regard to individual risk to life safety, in the year 2038 it is shown to be safer to travel by car than by train. Typically this is not the case however the reason is that in revision 1 new statistical data from the Danish Road Directorate is used for accident frequency and number of fatalities on the road (see section 7.6.1 and section 7.6.2). The frequency of accidents and fatalities is considered to decrease over time while the accident frequency on rail is assumed to

be constant. It is likely that train safety will also improve over time, however, no statistical trends have been found in the available data for rail and cannot therefore be included in this report.

Table 7-19 presents a comparison of the results for the total costs for years 2018 and 2038 for both revision 0 and revision 1.

		2018	2038
	Fatalities	0.248	0.146
	Disruption, road alone	1.051	5.373
Revision 1	Disruption, rail alone	1.459	5.202
Revision 1	Disruption, simultaneous	0.199	0.601
	Repair cost	0.396	0.828
	Total	3.354	12.15
	Fatalities	0.588	1.168
	Disruption, road alone	3.011	9.478
Revision 0	Disruption, rail alone	1.226	3.810
Revision U	Disruption, simultaneous	0.562	1.651
	Repair cost	0.648	1.177
	Total	6.035	17.284

Table 7-19 Comparison of total costs in million Euros between results in Revision 1 and 0

Table 7-20 present a comparison of the disruption risk for years 2018 and 2038 for both revision 0 and revision 1.

		20	18	2038	
		Acceptance criteria	Disruption days	Acceptance criteria	Disruption days
	Disruption, road alone [days]	6.5	0.48	6.5	0.67
Revision 1	Disruption, rail alone [days]	6.5	2.00	6.5	3.96
	Disruption, simultaneous [days]	1.3	0.06	1.3	0.11
	Disruption, road alone [days]	6.5	1.38	6.5	2.30
Revision 0	Disruption, rail alone [days]	6.5	1.681	6.5	2.899
	Disruption, simultaneous [days]	1.3	0.183	1.3	0.300

 Table 7-20 Comparison of disruption risk between results in Revision 1 and 0

7.6.1 Road accident frequency

In the revision 0 of the Conceptual Design Operational Risk Analysis (ORA) the traffic accident frequency and the traffic accident fatalities were assessed based on statistical data from 2001 to 2007. It was assumed that there would be the same frequency of traffic accidents per driven km in 2018 and 2038 as there was on average between 2001 and 2007. It was also assumed that the number of fatalities per accident would be the same in 2018 and 2038 as on average between 2001 and 2007.

These assumptions are however considered to be conservative given that there are strong indicators in the statistics that point to a decrease both in accident frequencies and in fatalities on road. In revision 1 of the ORA the development of traffic accident frequencies and consequences for the year 2018 and 2038 are estimated based on statistical trends.

The statistics indicate, contrary to the assumption of the accident frequency and fatalities per accident remaining constant, that there will be a decrease in accident frequencies and consequences between 2018 and 2038. In Table 7-21 the values from ORA revision 0 are

presented together with extrapolated values for motorways based on the statistical data from the Danish Road Directorate as used in revision 1.

Total number of accidents per year	2018	2038
Revision 1	3.116	2.199
Revision 0	4.270	6.140

Table 7-21 Accident frequency per year for ORA revision 1 and 0 for the Fehmarnbelt Fixed link

This change in input affects a number of the results including individual risk to life safety, disruption and societal risk.

7.6.2 Road accident fatalities

In a similar manner to which the accident frequency is extrapolated the average number of fatalities per year is also expected to decrease again based on the statistical data from the Danish Road Directorate. Table 7-22 presents the average number of fatalities used in revision 0 and the revised number of fatalities per accident, based on statistical trends, which have been used in revision 1.

Average number of fatalities per accident	2018	2038	
Revision 1	0.025	0.013	
Revision 0	0.0451		

Table 7-22 Fatalities per accident in revision 1 and 0

This change in input affects individual risk to life safety for road users.

7.6.3 Road fire frequency

The fire frequencies used for the road in the ORA have been updated in light of more recent statistics. The fire frequencies used in revision 0 were based on data from PIARC. PIARC data for the frequency of fires in road tunnels is based on statistics from years 1968 to 1992 and is therefore considered to be conservative. In revision 1, Danish statistics for road fires have been used and are considered to be more appropriate in this situation. Firstly, as a result of representing the vehicles typically expected to use the tunnel and secondly since they are considered to be more up to date.

	Revision 1	Revision 0
Car fire frequency	6.75·10 ⁻⁹	$1.50 \cdot 10^{-8}$
HGV fire frequency	1.39·10 ⁻⁸	3.08·10 ⁻⁸
Bus fire frequency	1.39·10 ⁻⁸	3.08·10 ⁻⁸
DGV fire frequency	1.03.10-8	2.30·10 ⁻⁸

 Table 7-23 Fire frequency per year and vehicle km for ORA revision 1 and 0 for the Fehmarnbelt Fixed

 link

This change in input affects the individual risk to life safety in addition to the disruption for both the road and rail tunnels.

7.6.4 Road fire fatalities

In line with revised modelling of the fire scenarios in the road tunnel the fatalities expected given specific scenarios have been made more conservative. The number of fire scenarios in which fatalities are expected has increased from four to nine. These scenarios are all considered high challenge fires and extreme events in that they have very long return period. Thus, although the increase to life safety increases, the overall number of fatalities per year does not increase significantly due to the low likelihood of these scenarios occurring.

7.6.5 Tunnel length

The tunnel length has been changed during the conceptual design phase. The lengths of road and rail ramps on the landside areas have also changed.



In revision 0 of the ORA the road link was taken as 18,690m while the rail link was taken as 19,529m

In revision 1 of the ORA the road link is 25,430m and the rail link is 26,055m.

As the accident frequency is per km this increased length leads to increased accidents on both road and rail and therefore impacts on all aspects of the ORA.

7.6.6 Traffic data

The traffic data has been changed on request from Femern A/S. The data used in ORA revision 0 and revision 1 is presented in Table 7-24.

	Revision 0		Revision 1	
Road Traffic	2018	2038	2018	2038
Annual average daily traffic (AADT) [veh/day]	9,639	13,856	9,856	16,113
Cars	8,152	11,190	8,325	1,2865
Cars (prof. activities) 30%	2,446	3,357	2,497	3,859
Cars (private use) 70%	5,707	7,833	5,828	9,006
Lorries	1,352	2,492	1,395	3,057
Coaches	134	173	136	191
Average person per vehicle	2	.4	2.4	
Cars (prof. activities)	1	.2	1.2	
Cars (private use)	2.9		2.9	
Lorries	1.0		1.0	
Coaches	3	5	35.0	
Average load per lorry in tons	15.9		15.9	
	Revis	sion 0	Revision 1	
Rail Traffic	2018	2038	2018	2038
Average number of freight trains per day	47	93	49.0	113
Average number of passenger trains per day	40	42	40.0	40
Passengers per passenger train	95		95	
Average number of	3		2	
operators/workers on trains	3		3	
Average load per freight wagon	17.0		17.7	
Number of wagons per freight train	30		3	0

Table 7-24 Traffic data for ORA revision 0 and revision 1

The change in traffic volume affects all results since the number of accidents per year is calculated based on number of vehicle or rolling stock kilometres in the tunnel per year.

8. FUTURE WORK

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In the next revision ORA 2014 (Autumn) updates will at least be made on the following topics:

- Dragged and dropped anchor; at the time detailed studies are made for dragged and dropped anchor. These studies will be included in the ORA.
- Grounding ships; at the time detailed studies are made for grounding ships. These studies will be included in the ORA.
- A more detailed study of the disruption of the road and rail, focus on updates in design regarding location of control centre and substation.
- The evacuation model on road and rail relative to the fire consequence calculations will be looked over and updated if it is found necessarily.
- A more detailed study at the consequences at the landsides (especially at Lolland as the safety zone is shorter than the Femern side). This study will include a more thorough description of the landsides with focus on safety.
- The costs of fatalities etc. will be updated to 2014 prices (instead of the present 2009 prices)
- Include new data from DHI for wave heights and sea level.
- Include results from the risk study of laybys.
- Update of the Operational Risk Management Plan
- Possible cost benefit analysis of FFFS (fixed fire fighting system)

9. APPENDIX A – RELEASE OF DANGEROUS GOODS – GENERAL ASSUMPTIONS

In order to access the consequences in accidents where dangerous goods are involved, some assumptions have been made, e.g., regarding size of releases, and toxicity limits for the selected substances.

The assumptions are all related to the chosen scenarios involving dangerous goods, which are the following:

- Ammonia release
- Chlorine release
- Flammable liquids
- LPG
- Explosives
- Acids and bases (corrosives)

9.1 Assumptions

General assumptions made:

- The upper limit for the longitudinal tunnel ventilation is an air velocity of 10 m/s.
- The critical velocity in terms of smoke ventilation is set to 3.2 m/s for a 200 MW fire scenario, ref. [16].
- The CFD-model includes: 2 groups of jet fans with each 4 parallel jet fans
 - Internal diameter 1250 mm
 - Jet velocity: 35 m/s (max)
 - Thrust pressure: 1600 N
 - Length of jet fan: 6 meter
 - Start up time: 60 sec.

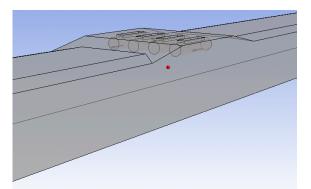


Figure 9-1: Location of jet fans used in the CFD-modelling of releases in road part

9.1.1 Release sizes

In the consequence modelling different sizes of release have been modelled; namely small, medium and large. In this section is described how "small", "medium" and "large" have been interpreted. The flow rates are calculated using QRA Pro, ref. [17].

The flow rates for ammonia/chlorine are presented in Table 9-1, and for LPG in Table 9-2.

Release size	Storage pressure	Hole size (diameter)	Calculated mass flow rate
Creall	80 bar	0.1″	0.308 kg/s
Small	100 bar	0.1″	0.345 kg/s
Madium	80 bar	1″	30.8 kg/s
Medium	100 bar	1″	34.5 kg/s
Large	80 bar	10″	3080 kg/s
	100 bar	10″	3450 kg/s

 Table 9-1 Representative release sizes of ammonia and chlorine and calculated mass flow rates

Release size	Storage pressure	Hole size (diameter)	Calculated mass flow rate
Cmall	80 bar	0.1″	0.288 kg/s
Small	100 bar	0.1″	0.322 kg/s
Madium	80 bar	1″	28.8 kg/s
Medium	100 bar	1″	32.2 kg/s
1	80 bar	10″	2880 kg/s
Large	100 bar	10″	3220 kg/s

Table 9-2 Representative release sizes of LPG and calculated mass flow rates

From Table 9-1 and Table 9-2 it is seen that the difference in mass flow rates between ammonia, chlorine and LPG do not differ significantly, hence for all three substances the values presented in Table 9-3 have been used in modelling.

Release size	Storage pressure	Hole size (diameter)	Calculated mass flow rate
Small	80 bar	0.1″	0.288 kg/s
Medium	80 bar	1″	28.8 kg/s
Large	80 bar	10″	2880 kg/s

Table 9-3 Mass flow rates of ammonia, chlorine and LPG used in the CFD-modelling

9.1.2 Location of source of release

Some assumptions regarding the source to the release, namely:

- Release source is the back-end of truck and cover the whole area of the back face of the truck, see Figure 9-2.
- Only diffusive leaks have been analysed
- Jet release is assumed to be converted into diffusive leak due to blockage

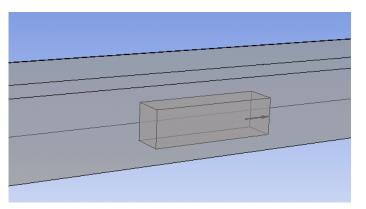


Figure 9-2: Location of the source to the release of dangerous goods

9.1.3 Assessment of impact from toxic release

A number of toxic materials will be transported on the Fehmarnbelt Fixed Link. Following an accident with a truck or a freight train transporting dangerous goods, there is a possibility for a release of toxic materials. In this assessment ammonia and chlorine have been selected as representative materials, why these two materials have been investigated. The release of toxic materials will have no influence on the structure, but could have serious consequences for the users. A typical accident in the road tube would be a truck accident where the truck will block the traffic and traffic will queue up behind the truck. The vehicles in front of the accident are in these circumstances assumed to drive out of the tunnel.

9.1.3.1 Individual risk

The consequence assessment for toxic releases used in this assessment is based on dispersion calculations in combination with computational-fluid-dynamics (CFD)-modelling and probit functions. The probit function predicts human impact in terms of the probability of fatalities given a certain concentration and a certain time of exposure.

9.1.3.2 Dispersion calculations and CFD modelling

CFD-modelling has been carried out for representative substances. This includes dispersion analyses of chlorine and ammonia. The consequences of selected release sizes (see section 9.1.1) are based on the results from dispersion calculations. The dispersion calculations are computed by means of the air-concentrations at given locations of the given substances in the tubes.

The results of the modelling are presented in ref. [3].

9.1.3.3 Probit and LC50

The individual risk in terms of a probability of fatalities is modelled with a probit function, reflecting the toxic dose, i.e. exposed concentration and time. The dispersion modelling is linked to the probit function by determining the size of a cloud giving a 50% probability of fatality at the exposure time given by the size of the cloud or the release duration, or both. The probits used are those recommended by DNV Technica, ref. [18]. A probit function is material/substance dependent and it is expressed as:

 $\Pr = a + b \ln(C^n t)$

Where *Pr* is the probit value for death

C is the concentration of toxic material ppm

a, b and n are material constants

t is the time of exposure, minutes

The probit value is transferred to a probability of fatalities through a normal distribution. If the concentration varies during the time of exposure, the concentration should be expressed as an integral of time. In this assessment it is assumed that the concentration of exposure is approximately time independent. The human impact is described in terms of a 50% fatality, which is a common means to determine the number of people affected by a given incident within a uniform population, e.g. a car queue in the tunnel. The 50% limit is used as it is a measure of the average fatal dose. Weaker individuals being beyond the envelope may be among the casualties while stronger individuals within will survive, i.e. the 50% fatality criterion is used to predict a 100% fatality level.

The deadly concentrations can be calculated by means of the formula below:

LC50 after t min. exposure =

$$\left(\frac{\exp\left(\frac{p-a}{b}\right)}{t}\right)^{\frac{1}{b}}$$

- t: time in minutes
- p = Pr(50%) =5

9.1.4 Corrosive release

RAMBØLL

ARUP

TEC

A corrosive substance is one that will destroy or irreversibly damage another substance with which it comes into contact. The main hazards to people include damage to the eyes, the skin, and the tissue under the skin; inhalation or ingestion of a corrosive substance can damage the respiratory and gastrointestinal tracts. Exposure results in chemical burn. The most common strong acids are sulfuric acid, nitric acid and hydrochloric acid (H_2SO_4 , HNO_3 and HCI, respectively).

9.1.4.1 Individual risk

The human impact of a corrosive release inside the tunnel will be dependent of the released material and the time for exposure although people may be seriously injured by the liquid itself or fumes due to reactions. The likelihood of fatalities is low. The percentage of fatalities due to an accident with corrosive release is therefore assumed to be the same as for ordinary rail accidents involving freight trains, described in section 4.1.2.1.

9.1.4.2 Disruption

Corrosive releases may be releases of typically acids or bases. Corrosive materials are normally transported in thin walled tanks on trucks or on railway. The capacity of the drainage system will affect the impact of a release. Two sub sumps in the road tubes will have sufficient volume to collect the contents of a tank truck (30 m³). Two sub sumps in the rail tubes will have sufficient volume to collect the contents of one tank wagon (80 m³). The sumps will be emptied with a tanker. Assuming that an available tanker is one hour away and it will take 15 minutes to empty the sumps and another 15 minutes to make the dissention to open the tunnel again.

9.1.5 Ammonia release

Ammonia is a colourless gas with a characteristic pungent smell. It is lighter than air, its density being 0.589 times that of air. It is easily liquefied due to the strong hydrogen bonding between molecules. Ammonia does not burn readily or sustain combustion, except under narrow fuel-to-air mixtures of 15-25% air. Anhydrous ammonia is classified as toxic and inhalation of concentrated gas can be lethal.

9.1.5.1.1 Individual risk

The consequence for individuals is assessed for release of ammonia based on CFD-modelling and probit functions. The result is presented in the following section.

9.1.5.2 CFD calculations

CFD-modelling has been carried out for two scenarios for ammonia:

- Small release
- Medium release

The release sizes used in the modelling are defined in Table 9-3. The small release gives a concentration below 4.200 ppm. The small release scenario does not lead to a critical situation, not even for the driver. Hence, no fatalities are expected in this scenario.

6000.0		
5400.0		
4800.0		
4200.0		
3600.0		
3000.0		
2400.0		
1800.0		
1200.0		
600.0		
0.0		

Figure 9-3 Result from CFD calculations for small release of ammonia

The medium release scenario leads to a concentration of 40.000 ppm which is a critical situation for the people in the tunnel. The number of fatalities depends on the number of people in the tunnel following a release.

PPM Conc Plane ppm 40000.0				
- 30000.0				
- 20000.0				
10000.0				- Calana
0.0	0	15.000	30.000 (m)	
			2.500	

Figure 9-4 Result from CFD calculations for medium release of ammonia

Since the medium release gives a concentration high enough to create a critical situation, CFD – modelling has not been performed for large releases. Assumptions of the concentrations for a large release have been made based on the medium release.



9.1.5.3 **Probit and LC50**

The most severe consequences from an ammonia release will origin from ammonias toxicity; the deadly concentrations are given below:

- a: -15.8
- b: 1
- n: 2.0

An example is LC50 with an exposure time of 10 minutes given Pr(50%) = 5 and an ammonia gas intensity of 0.69 kg/m³.

1

LC50 after 30 min. exposure:

$$\left(\frac{\exp\left(\frac{5+15.8}{1}\right)}{30}\right)^{\overline{2}} \approx 6000 \ mg/m^{3} \approx 8700 \ ppm$$

In Table 9-4 LC50 for different exposure time is presented. Exposure times below 5 minutes contain large uncertainties.

		LC50		
Exposure time (minutes)	mg/m ³	Ppm		
1/2	46471	64542		
1	32860	45638		
5	14695	20410		
15	8484	11784		
30	5999	8332		
60	4242	5892		

 Table 9-4 LC50 for ammonia - Lethal concentration as a function of probability of fatality at different exposure times

In the risk assessment it is assumed that a concentration above 8695 ppm in more than 5 minutes will be lethal. And for exposure time less than 5 minutes a concentration above 21.295 ppm is assumed to be lethal.

Ammonia vapour has a sharp, irritating, pungent odour that acts as a warning of potentially dangerous exposure. The average odour threshold is 5 ppm, well below any danger or damage. Exposure to very high concentrations of gaseous ammonia can result in lung damage and death.

9.1.5.3.1 **Consequences to the structure and the installations**

The consequences to the structure and the tunnel installations due to a toxic release of ammonia may be similar to those of a corrosive release; e.g. released gases may react with water in the drainage system and with concrete moisture. The tunnel will need to be cleaned from the toxic release by washing the interior with water. The concrete, asphalt and different installations may need to be replaced, but the restoration of the tunnel must not necessary include closure of both of the road or railway tubes.

9.1.5.3.2 Disruption

The capacity of the drainage system will affect the impact of a release in the same way as for corrosive release see section 9.1.4.2.

9.1.6 Chlorine release

Chlorine is a toxic gas that irritates the respiratory system. Because it is heavier than air, it tends to accumulate at the bottom of poorly ventilated spaces. Chlorine gas is a strong oxidizer, which may react with flammable materials. Chlorine is detectable in concentrations of as low as 0.2 ppm. Coughing and vomiting may occur at 30 ppm and lung damage at 60 ppm. About 1000 ppm can be fatal after a few deep breaths of the gas.

9.1.6.1.1 Individual risk

The consequence for individuals is assessed for release of chlorine based on CFD-modelling and probit functions. The result is presented in the following section.

9.1.6.1.2 CFD calculations

The same CFD–modelling as for ammonia is used to determine the concentration of chlorine in the tunnel after an accident which leads to a release. A small release gives a concentration of 4200 ppm and a medium release gives a concentration of 40 000 ppm. It is assumed that a large release gives the same consequence as a medium release.

9.1.6.2 **Probit and LC50**

The most severe consequences from a chlorine release will origin from chlorines toxicity; the deadly concentrations are given below:

- a: -14.8
- b: 1
- n: 2.3

An example is LC50 with an exposure time of 10 minutes given Pr(50%) = 5 and a chlorine gas intensity of 0.10 kg/m³.

1

LC50 after 30 min. exposure:
$$\left(\frac{\exp\left(\frac{5+14.3}{1}\right)}{30}\right)^{\overline{2}} \approx 1005 \ mg \ / \ m^{3} \approx 335 \ ppm$$

In Table 9-4 LC50 for different exposure time is presented. Exposure times below 5 minutes contain large insecurities.

	LCS	50
Exposure time (minutes)	mg/m ³	ppm
1/2	5959	1986
1	4409	1470
5	2190	730
15	1358	453
30	1005	335
60	743	248

 Table 9-5 LC50 for chlorine - Lethal concentration as a function of probability of fatality at different exposure times

9.1.6.3 Consequences to the structure and the installations

The consequences to the structure and the tunnel installations due to a toxic release of chlorine are assumed to be the same as for ammonia, see section 9.1.5.3.1.

9.1.6.3.1 **Disruption**

The capacity of the drainage system will affect the impact of a release in the same way as for corrosive release see section 9.1.4.2.

9.1.7 Detection of release

There are installed a few (five) gas detectors in the tunnel in order to measure the NO_x -concentration. No detectors are installed with the specific purpose of identifying releases of dangerous goods.

The tunnel is designed with a VAID (Vehicle Accident and Incident Detection)-system that automatically detects if a vehicle is stopped in the tunnel. In the analysis it has been assumed that all significant releases of dangerous goods are related to traffic accidents, hence the vehicle releasing the dangerous goods will be stopped. The VAID system is designed such that it automatically starts up ventilation in order to avoid back-layering of smoke (in possible fire scenarios) and gasses (from dangerous goods releases).

It the analyses it has been assumed that it will take 1 minute to detect the release/accident (by means of a stopped vehicle) and start the ventilation up.

9.2 Assessment of impact from explosions

Explosions in terms of deflagration or detonation may be a result of ignition of solid explosives or releases of LPG or similar materials. The following section presents the estimate of fatalities in detonation of solid explosives, and the results of ignition of gas clouds leading to deflagration. The effects of a detonation of solid explosives are only presented as an estimate of the number of fatalities.

9.2.1 Solid explosives

Solid explosives are likely to be transported to some extent through the tunnel. If such goods should detonate the consequences will probably be severe. Explosives are normally transported in bulk packages and the amounts up to 1000 kg on road. In risk assessment for the Øresund link ref. [13] calculations regarding explosions were made.

The assessment for Øresund showed that the consequences of an accident involving explosion of solid explosives will be severe, and considering the overpressures possible in case of a detonation, a collapse of several tunnel elements is possible. A collapse of one tunnel element due to an explosion in one tube will affect vehicles in the accident tube as well as in the other tubes. An explosion might cause collapse of more than one element. Vehicles which just have passed the collapsing element are assumed to be able to drive out of the tunnel.

9.2.2 Vapour cloud explosion

A vapour cloud explosion is a deflagration creating an overpressure pulse as the flame front burns from the point of ignition. The velocity of the flame front, which determines the overpressure, is dependent on the size of the gas cloud in the tunnel. The length of the gas cloud from typical release scenarios (se section 9.1.1) are determined by dispersion calculations previously described.

The consequences of an explosion of a continuous release of LPG in terms of fatalities due to an explosion in the tunnel are estimated by assuming that people inside the exploding gas cloud will be fatally injured. People outside the cloud are assumed not to be harmed. The CFD modelling for the road tube showed that a medium release of LPG will give a gas cloud larger than 200 m within 150 seconds. It also indicates that a small release will not be sufficient to get an explosion. For the medium release the whole tunnel might be affected by a gas cloud and gas clouds longer than 200 m will most likely detonate causing fatalities in the whole tunnel..

9.2.3 BLEVE (boiling liquid expanding vapour explosion)

For outdoor BLEVE accidents, the consequences to people are normally assessed as the extent and duration of the fireball, hence overpressure effects are normally not considered. The fireball is normally modelled as a spherical fireball, assumed to be resting on the ground. The parameter affecting the size of the fireball is the mass of the flammable liquid exploding in a BLEVE. A BLEVE occurring inside a tunnel will be formed by the tunnel instead of forming a spherical fireball.

In the risk assessment for the Øresund Link ref. [13] the radius of a BLEVE fireball and the consequences of a BLEVE inside the tunnel have been calculated. The model used for the Øresund link is conservative and gives indications of that an accident leading to a BLEVE inside the tunnel, will affect the whole tunnel. It is assumed that a BLEVE in the Fehmarnbelt Fixed Link also will affect the whole tunnel. Based the fact that the Øresund Tunnel is 3.5 km and the Fehmarnbelt Fixed Link Tunnel is 18.4 km this assumption is conservative.

The consequences from a BLEVE are assumed to be the same as for explosion with solid explosives.

10. APPENDIX B – TRAIN DISTRIBUTION IN TUNNEL FROM TIME SCHEDULE

Based on the time schedule for 2025, which is described in ref. [21], an analysis about the train distribution in the tunnel has been carried out.

The timetable data is diverging from the data used in Table 4-4, because of an increased number of trains, see Table 10-1.

Rail Traffic	2025
Average number of freight trains per day	97
Average number of passenger trains per day	54

Table 10-1: Expected number of trains per day used in scheduling for the year 2025

Based on the time scheduled it is assessed how often different train scenarios are expected to occur. From the analysis it is seen that there are two trains as a maximum - the combinations are:

- Two freight trains, (freight train followed by a passenger train and passenger train followed by a freight train),
- A single passenger train,
- A single freight train.

The fraction of time spent in each scenario is estimated for each travel direction, and the result is presented in Table 10-2.

Scenario	Fehmarn direction	Lolland direction
Freight / Freight	1.6%	1.9%
Freight / Passenger	0.0%	1.1%
Passenger / Freight	0.1%	0.0%
Freight	36.5%	32.9%
Passenger	11.9%	10.9%
Total	50.1%	46.9%

 Table 10-2: Fraction of different train scenarios

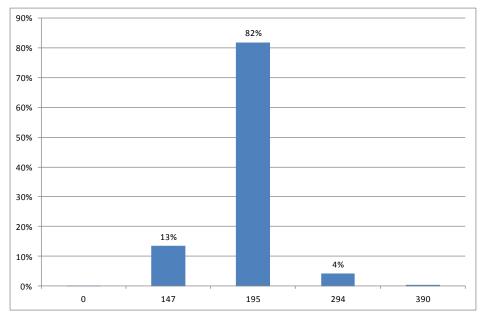
From Table 10-2 it is seen that there are trains in a tunnel in direction of Fehmarn about 50% of the time and about 47% in the direction of Lolland.

11. APPENDIX C – DISTRIBUTIONS OF TRAIN CAPACITY

11.1.1.1 **Passenger trains**

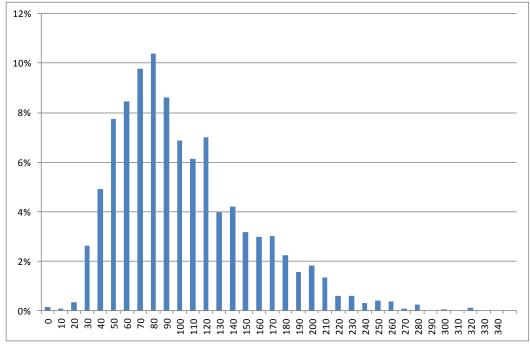
The average number of passengers on passenger trains is estimated to 95 persons, and the number of workers on each train is conservatively set to 3 (Train driver, Train manager and one other), ref.[3]. This gives a total of 98 persons on passengers on trains on average. Based on traffic data from the present travel connection, i.e., passengers on trains driving on board of the ferry between Rødby and Puttgarten, an analysis has been carried out. Data covers a one year period from October 2011 to September 2012.

In Figure 11-1 the distribution of the present train capacities can be seen. Due to the fact that it is expected that the same type and number of trains will be needed in the future, this distribution is assumed to estimate the future distribution very well. It is e.g. seen that 82% of the trains can have 195 passengers on board and a minor fraction (about 0.3%) can have up to 390 passengers.





In Figure 11-2 the actual distribution of passengers can be seen. It is seen that it is most likely that there are between 40 and 200 passengers on a train





It is seen that there is only a few number of registrations with trains with more than 260-270 passengers. The maximum number of passengers seen in data is 320. The distribution has been shown in Figure 11-3 together with a fitted distribution.

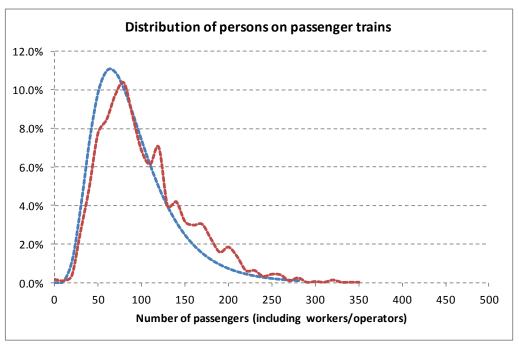


Figure 11-3 Assumed distribution

From the data and the distribution it is seen that it is very unlikely that the number of passengers in a train is larger than 320.

The numbers are presented in Table 11-1.

Intervals (numb	er of passengers)	Cumulative	Distribution
0	40	4.8%	4.8%
40	80	42.3%	37.5%
80	100	61%	18.6%
100	150	87%	26.2%
150	275	99.2%	12.0%
275	350	99.9%	0.76%

Table 11-1 Persons on passenger trains

11.1.1.2 Freight trains

It is assumed; see ref. [3], that the locomotive driver is the only person on the freight train.

12. APPENDIX D – CONSEQUENCE TABLES

12.1 Road accidents resulting in no fire

1.1 - Car accident	resulting in no fi	re						
	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	30	0	0
Average	0.0287	0	2,79E-02	1.21E-03	2,76E-07	0	0	0
Avelage	0,0207	0	2,792-02	1,212-05	2,100-01	0	0	0
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	95,92%	4,00%	0,08%	0	0	0	0
Average	0,0417	0	4,00E-02	5,91E-03	0	0	0	0
5 -	- / -		,	-,				
Repai	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	2,50E+03	0	1,00E+04	0	0	0	0	0
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
			-					-
Fatalities rai	l passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	il employees	0	1	3	10	30	100	300
Distribution type	Poisson	1,00E+00	0	0	0	0	0	0
Distribution-type	1 0100011	.,	•	-				
Average	0,000	0	0	0	0	0	0	0
Average	0,000 nt resulting in no f	0 fire	0					
Average 1.3 - Buss accider Fataliti	0,000 ht resulting in no f es road	0 fire 0	0	3	10	30	100	300
Average 1.3 - Buss accider Fataliti Distribution-type	0,000 nt resulting in no f es road Poisson	0 fire 0 97,17%	0 1 2,79%	3 0,04%	10 0,00%	30 0	100 0	300 0
Average 1.3 - Buss accider Fataliti	0,000 ht resulting in no f es road	0 fire 0	0	3	10	30	100	300
Average 1.3 - Buss accider Fataliti Distribution-type Average	0,000 nt resulting in no f es road Poisson 0,0287	0 fire 0 97,17%	0 1 2,79%	3 0,04%	10 0,00%	30 0	100 0	300 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Disrupti	0,000 nt resulting in no f es road Poisson	0 fire 0 97,17% 0	0 1 2,79% 2,79E-02 1	3 0,04% 1,21E-03	10 0,00% 2,76E-07	30 0 0	100 0 0	300 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average	0,000 nt resulting in no f es road Poisson 0,0287 on road	0 fire 0 97,17% 0	0 1 2,79% 2,79E-02	3 0,04% 1,21E-03 7	10 0,00% 2,76E-07 14	30 0 0 30	100 0 0 180	300 0 0 365
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Distribution-type	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson	0 fire 0 97,17% 0 92,00%	0 1 2,79% 2,79E-02 1 7,67%	3 0,04% 1,21E-03 7 0,33%	10 0,00% 2,76E-07 14 0	30 0 0 30 0	100 0 0 180 0	300 0 0 365 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Average	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson	0 fire 0 97,17% 0 92,00%	0 1 2,79% 2,79E-02 1 7,67%	3 0,04% 1,21E-03 7 0,33%	10 0,00% 2,76E-07 14 0 0	30 0 0 30 0	100 0 0 180 0	300 0 0 365 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Average	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson 0,0833	0 fire 0 97,17% 0 92,00% 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02	3 0,04% 1,21E-03 7 0,33% 2,30E-02	10 0,00% 2,76E-07 14 0 0	30 0 0 30 0 0	100 0 0 180 0 0	300 0 0 365 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Repai	0,000 It resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs	0 fire 0 97,17% 0 92,00% 0 1,00E+03	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05	10 0,00% 2,76E-07 14 0 0	30 0 0 30 0 0 1,00E+07	100 0 0 180 0 0 0	300 0 0 365 0 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson	0 fire 0 97,17% 0 92,00% 0 1,00E+03 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00%	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0	10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0	30 0 0 30 0 0 1,00E+07 0	100 0 0 180 0 0 0 1,00E+08 0	300 0 0 365 0 0 0 1,00E+09 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson	0 fire 0 97,17% 0 92,00% 0 1,00E+03 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00%	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0	10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0	30 0 0 30 0 0 1,00E+07 0	100 0 0 180 0 0 0 1,00E+08 0	300 0 0 365 0 0 0 1,00E+09 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03	0 fire 0 97,17% 0 97,17% 0 92,00% 0 1,00E+03 0 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	30 0 0 30 0 0 0 1,00E+07 0 0	100 0 0 180 0 0 0 1,00E+08 0 0	300 0 0 365 0 0 0 1,00E+09 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Distribution-	0,000 It resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 cion rail	0 fire 0 97,17% 0 97,17% 0 92,00% 0 1,00E+03 0 0 0 0 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0	10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0	300 0 0 365 0 0 0 0 1,00E+09 0 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type D	0,000 It resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 ion rail Poisson	0 fire 0 97,17% 0 92,00% 0 1,00E+03 0 1,00E+00	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04 1 0	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0	100 0 0 180 0 0 1,00E+08 0 0 0 180 0	300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0,000 It resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 ion rail Poisson	0 fire 0 97,17% 0 92,00% 0 1,00E+03 0 1,00E+03 0 1,00E+00 0 1,00E+00 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04 1 0	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0	100 0 0 180 0 0 1,00E+08 0 0 0 180 0	300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 cion rail Poisson 0,000	0 fire 0 97,17% 0 92,00% 0 1,00E+03 0 1,00E+00 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+04	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0 7 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0	300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai	0,000 It resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 ion rail Poisson 0,000 I passengers	0 fire 0 97,17% 0 92,00% 0 1,00E+03 0 1,00E+03 0 1,00E+00 0 1,00E+00 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04 1 0 0 0 1	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 0 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0 0	300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Comparison	0,000 It resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 ion rail Poisson 0,000 I passengers Poisson	0 ire 0 97,17% 0 92,00% 0 1,00E+03 0 1,00E+00 0 1,00E+00 0 1,00E+00	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04 1 0 0 0 1 0	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 0 0 0 0 7 0 0 0 3 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 30 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0 0 100 0 0	300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average	0,000 It resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 ion rail Poisson 0,000 I passengers Poisson	0 ire 0 97,17% 0 92,00% 0 1,00E+03 0 1,00E+00 0 1,00E+00 0 1,00E+00	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04 1 0 0 0 1 0	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 0 0 0 0 7 0 0 0 3 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 30 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0 0 100 0 0	300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0 0
Average 1.3 - Buss accider Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average	0,000 nt resulting in no f es road Poisson 0,0287 on road Poisson 0,0833 r costs Poisson 5,00E+03 dion rail Poisson 0,000 I passengers Poisson 0,000	0 fire 0 97,17% 0 92,00% 0 1,00E+03 0 1,00E+00 0 1,00E+00 0 1,00E+00 0	0 1 2,79% 2,79E-02 1 7,67% 7,67E-02 1,00E+04 100,00% 1,00E+04 1 0 0 0 1 0 0 0	3 0,04% 1,21E-03 7 0,33% 2,30E-02 1,00E+05 0 0 0 7 0 0 0 0 3 0 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0 10 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 0 30 0 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0 0 180 0 0 0	300 0 0 365 0 0 0 0 1,00E+09 0 0 0 365 0 0 0 300 0 0 0

1.5 - Truck accide	nt resulting in no	fire						
Fataliti	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	0	0	0
Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
					-			
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	93,94%	5,87%	0,19%	0	0	0	0
Average	0,0625	0	5,87E-02	1,31E-02	0	0	0	0
Repair	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	lpassengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	l employees	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0

12.2 Road accident involving dangerous goods vehicle carrying ammonia

Fataliti	es road	0	1	3	10	30	100	300
Distribution-type		97,17%	2,79%	0,04%	0,00%	0	0	0
Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
, troidge	0,0201	, ,	_,: 0_ 0_	.,	_,. 0_ 0.	Ū	Ŭ	•
Disrupt	ion road	0	1	7	14	30	180	365
Distribution-type		93,94%	5,87%	0,19%	0	0	0	0
Average		0	5,87E-02	1,31E-02	0	0	0	0
5 -	-,	-	-,	,		-	-	
Repai	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+0
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
Disrupt	tion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
5-	· ·	1	1		1		1	
Fatalities rai	il passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
	I	-						
Fatalities ra	il employees	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
	1 0133011	1,000	0	0		0		
Average	0,000	0	0	0	0	0	0	0
Average	0,000 ident involving da	0 angerous goo	0 ods vehicle	0 carrying an	0 nmonia res	0 sulting in s	0 small relea	0
Average .1.2 - traffic acc Fataliti	0,000 ident involving d es road	0 angerous goo	0 ods vehicle 1	0 carrying an 3	0 nmonia res 10	0 sulting in s 30	0 small relea 100	0 se 300
Average .1.2 - traffic acc Fataliti Distribution-type	0,000 ident involving d es road Poisson	0 angerous goo 0 97,17%	0 ods vehicle 1 2,79%	0 carrying an 3 0,04%	0 nmonia res 10 0,00%	0 sulting in s 30 0	0 small relea 100 0	0 se 300 0
Average .1.2 - traffic acc Fataliti	0,000 ident involving d es road Poisson	0 angerous goo	0 ods vehicle 1	0 carrying an 3	0 nmonia res 10	0 sulting in s 30	0 small relea 100	0 se 300
Average .1.2 - traffic acc Fataliti Distribution-type Average	0,000 ident involving d es road Poisson 0,0287	0 angerous goo 97,17% 0	0 ods vehicle 1 2,79% 2,79E-02	0 carrying an <u>3</u> 0,04% 1,21E-03	0 nmonia res 10 0,00% 2,76E-07	0 sulting in s 30 0 0	0 small relea 100 0 0	0 se 300 0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Disrupti	0,000 ident involving d es road Poisson 0,0287 ion road	0 angerous goo 97,17% 0 0	0 ods vehicle 1 2,79% 2,79E-02 1	0 carrying an 3 0,04% 1,21E-03 7	0 1000% 2,76E-07	0 sulting in s 30 0 0 30	0 small relea 100 0 0 180	0 se 300 0 0 365
Average 1.2 - traffic acc Fataliti Distribution-type Average Disrupti Distribution-type	0,000 ident involving da es road Poisson 0,0287 ion road Poisson	0 angerous goo 97,17% 0 0 90,11%	0 ods vehicle 1 2,79% 2,79E-02 1 9,39%	0 carrying an <u>3</u> 0,04% 1,21E-03 <u>7</u> 0,51%	0 1monia res 10 0,00% 2,76E-07 14 0	0 sulting in s 30 0 0 30 0	0 small relea 100 0 0 180 0	0 300 0 0 365 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Disrupti	0,000 ident involving da es road Poisson 0,0287 ion road Poisson	0 angerous goo 97,17% 0 0	0 ods vehicle 1 2,79% 2,79E-02 1	0 carrying an 3 0,04% 1,21E-03 7	0 1000% 2,76E-07	0 sulting in s 30 0 0 30	0 small relea 100 0 0 180	0 se 300 0 0 365
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Average	0,000 ident involving d es road Poisson 0,0287 ion road Poisson 0,1042	0 angerous goo 97,17% 0 90,11% 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02	0 1monia res 10 0,00% 2,76E-07 14 0 0	0 sulting in s 30 0 0 30 0 0	0 small relea 100 0 0 180 0 0	0 se 300 0 0 365 0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai	0,000 ident involving d es road Poisson 0,0287 ion road Poisson 0,1042 r costs	0 angerous goo 97,17% 0 90,11% 0 1,00E+03	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05	0 10 0,00% 2,76E-07 14 0 0 1,00E+06	0 sulting in s 30 0 0 30 0 0 1,00E+07	0 small relea 100 0 0 180 0 0 0 1,00E+08	0 se 300 0 0 365 0 0 0 1,00E+0
Average 1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type	0,000 ident involving d es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00%	0 carrying an <u>3</u> 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0	0 1monia res 10 0,00% 2,76E-07 14 0 0 1,00E+06 0	0 sulting in s 30 0 0 30 0 0 0 1,00E+07 0	0 small relea 100 0 0 180 0 0 1,00E+08 0	0 300 0 0 365 0 0 0 1,00E+0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai	0,000 ident involving d es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05	0 10 0,00% 2,76E-07 14 0 0 1,00E+06	0 sulting in s 30 0 0 30 0 0 1,00E+07	0 small relea 100 0 0 180 0 0 0 1,00E+08	0 se 300 0 0 365 0 0 0 1,00E+0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	0,000 ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00%	0 carrying an <u>3</u> 0,04% 1,21E-03 <u>7</u> 0,51% 3,54E-02 <u>1,00E+05</u> 0 0	0 1monia res 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	0 sulting in s 30 0 0 30 0 0 1,00E+07 0 0	0 small relea 100 0 0 180 0 0 1,00E+08 0 0	0 300 0 0 365 0 0 0 1,00E+0 0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0,000 ident involving d es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0	0 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14	0 sulting in s 30 0 0 30 0 1,00E+07 0 0 30	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0	0 se 300 0 0 365 0 0 0 1,00E+0 0 0 365
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type	0,000 ident involving di es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 0 9,49E-01	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	0 1000% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	0 sulting in s 30 0 0 30 0 1,00E+07 0 0 0 30 0	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0	0 300 0 0 365 0 0 0 1,00E+0 0 0 365 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0,000 ident involving di es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0	0 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14	0 sulting in s 30 0 0 30 0 1,00E+07 0 0 30	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0	0 se 300 0 0 365 0 0 0 1,00E+0 0 0 365
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Average	0,000 ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 0 9,49E-01	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03	0 1monia res 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 0	0 sulting in s 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 300 0 0 365 0 0 0 1,00E+0 0 0 365 0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai	0,000 ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052 il passengers	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 9,49E-01 0 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	0 1000% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	0 sulting in s 30 0 0 30 0 1,00E+07 0 0 0 30 0	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0	0 300 0 0 365 0 0 0 1,00E+0 0 0 365 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0,000 ident involving di es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052 il passengers Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 9,49E-01 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1,00E+04 1 4,94E-02 4,94E-02 1 0	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3 0	0 1monia res 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 0	0 sulting in s 30 0 0 30 0 1,00E+07 0 0 0 30 0 0 30	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 se 300 0 0 365 0 0 1,00E+0 0 0 365 0 0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai	0,000 ident involving di es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052 il passengers Poisson	0 angerous goo 97,17% 0 90,11% 0 90,11% 0 1,00E+03 0 9,49E-01 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02 1	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3	0 1000% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 10 0 10 10 0 10 10 10	0 sulting in s 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 180 0 0	0 se 300 0 0 365 0 0 1,00E+0 0 0 365 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average	0,000 ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052 il passengers Poisson 0,000	0 angerous goo 97,17% 0 90,11% 0 90,11% 0 1,00E+03 0 9,49E-01 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1,00E+04 1 4,94E-02 4,94E-02 1 0	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 9,17E-03 3 0 0	0 1monia res 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 0 10 0 0 10 0 0	0 sulting in s 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0 180 0 0	0 se 300 0 0 365 0 0 1,00E+0 0 0 365 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average .1.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average Fatalities rai Distribution-type Average	0,000 ident involving d es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052 il passengers Poisson 0,000 il employees	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 9,49E-01 0 1,00E+00 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+02 4,94E-02 4,94E-02 1 0 0	0 carrying an 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3 0	0 1monia res 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 0	0 sulting in s 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 30 0 0	0 small relea 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 300 0 0 365 0 0 0 1,00E+0 0 0 365 0 0 0 365 0 0 0 0

1.1.3 - traffic acci								_
	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0,01%	99,99%	0,00%
Average	56,6912	0	0	0	0	2,24E-03	1,00E+02	2,16E-0
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	88,25%	11,03%	0,72%	0	0	0	0
Average	0,1250	00,23%	1,10E-01	5.03E-02	0	0	0	0
Avelage	0,1230	0	1,10∟-01	5,05L-02	0	0	0	0
Repai	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+0
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
				_				
Disrupt		0	1	7	14	30	180	365
Distribution-type	Poisson	9,39E-01	5,87E-02	1,87E-03	0	0	0	0
Average	0,063	0	5,87E-02	1,31E-02	0	0	0	0
Fatalities rai	Inassengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0.000	0	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	l employees	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
A. 00000	0.000							
Average	0,000 ident involving D	0 Dangerous go	0 ods vehicle	0 carrying A	0 mmonia re	0 esulting in	0 Large rele	0 a se
3	ident involving D		-	-	-			-
.1.4 - Traffic acc	ident involving D	angerous go	ods vehicle	carrying A	mmonia re	sulting in	Large rele	ase
.1.4 - Traffic acc Fataliti	ident involving D es road	angerous go 0	ods vehicle 1	carrying A	mmonia re 10	esulting in 30	Large rele 100	a se 300 4,96%
.1.4 - Traffic acc Fataliti Distribution-type Average	ident involving D es road Poisson 85,0225	Pangerous go	ods vehicle 1 0 0	carrying A 3 0 0	mmonia re 10 0	esulting in 30 0 0	Large rele 100 95,04% 9,50E+01	300 4,96% 1,49E+0
I.1.4 - Traffic acc Fataliti Distribution-type Average Disrupti	ident involving D es road Poisson 85,0225 on road	angerous go 0 0 0 0	ods vehicle 1 0 0 1	carrying A 3 0 0 7	mmonia re 10 0 0 14	30 0 0 30	Large rele 100 95,04% 9,50E+01 180	a se 300 4,96% 1,49E+0 365
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Distribution-type	ident involving D es road Poisson 85,0225 on road Poisson	O O 0 0 0 0 82,90% 82,90%	ods vehicle 1 0 0 1 15,54%	carrying A 3 0 0 7 1,55%	mmonia re 10 0 0 14 0	30 0 0 30 0 30 0	Large rele 100 95,04% 9,50E+01 180 0	300 4,96% 1,49E+0 365 0
.1.4 - Traffic acc Fataliti Distribution-type Average Disrupti	ident involving D es road Poisson 85,0225 on road	angerous go 0 0 0 0	ods vehicle 1 0 0 1	carrying A 3 0 0 7	mmonia re 10 0 0 14	30 0 0 30	Large rele 100 95,04% 9,50E+01 180	a se 300 4,96% 1,49E+0 365
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson	O O 0 0 0 0 82,90% 0	ods vehicle 1 0 1 1 1 15,54% 1,55E-01	carrying A 3 0 0 7 1,55% 1,09E-01	mmonia re 10 0 0 14 0 0	30 0 0 0 30 0 0	Large rele 100 95,04% 9,50E+01 180 0	300 4,96% 1,49E+0 365 0 0
I.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson 0,1875	O O 0 0 0 0 82,90% 82,90%	ods vehicle 1 0 0 1 15,54%	carrying A 3 0 0 7 1,55%	mmonia re 10 0 0 14 0 0	30 0 0 0 30 0 0	Large rele 100 95,04% 9,50E+01 180 0 0	300 4,96% 1,49E+0 365 0 0
I.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs	O O 0 0 0 0 82,90% 0 1,00E+03 0	ods vehicle 1 0 1 1 1 5,54% 1,55E-01 1,00E+04	carrying A 3 0 0 7 1,55% 1,09E-01 1,00E+05	mmonia re 10 0 14 0 0 1,00E+06	30 0 0 30 0 0 0 0 1,00E+07	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08	300 4,96% 1,49E+0 365 0 0 0
I.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03	angerous go 0 0 0 0 82,90% 0 1,00E+03 0	ods vehicle 1 0 1 1 1 5,54% 1,55E-01 1,00E+04 100,00% 1,00E+04	carrying A 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0	mmonia re 10 0 0 14 0 0 1,00E+06 0 0	30 0 0 0 30 0 0 0 1,00E+07 0 0	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0	300 4,96% 1,49E+0 365 0 0 0 1,00E+0 0 0
I.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail	o 0 0 0 0 0 0 0 1,00E+03 0 0 0 0	ods vehicle 1 0 1 1 5,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1	carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 0 7	mmonia re 10 0 14 0 0 1,00E+06 0 0 14	30 0 0 0 30 0 0 0 1,00E+07 0 0 30	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180	300 4,96% 1,49E+0 365 0 0 0 1,00E+0 0 0 0
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Distribution-type Distribution-type	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson	O O 0 0 0 0 0 0 82,90% 0 1,00E+03 0 0 0 9,11E-01 0	I 0 0 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02	carrying A 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03	mmonia re 10 0 14 0 0 1,00E+06 0 0 14 0 0	30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0	300 4,96% 1,49E+0 365 0 0 1,00E+0 0 0 365 0
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail	o 0 0 0 0 0 0 0 1,00E+03 0 0 0 0	ods vehicle 1 0 1 1 5,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1	carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 0 7	mmonia re 10 0 14 0 0 1,00E+06 0 0 14	30 0 0 0 30 0 0 0 1,00E+07 0 0 30	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180	300 4,96% 1,49E+0 365 0 0 0 1,00E+0 0 0 0
I.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094	O O O O O B2,90% O B2,90% O I,00E+03 O O 9,11E-01 O	ods vehicle 1 0 1 1 5,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 8,54E-02 8,54E-02	carrying A 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02	mmonia re 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 0 14 0 0 0	30 0 0 0 30 0 0 0 1,00E+07 0 0 30 0 0	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 0	300 4,96% 1,49E+0 365 0 0 1,00E+0 0 0 365 0 0
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094	ongerous go o 0 0 0 0 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 0 0 0	ods vehicle 1 0 1 1 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 1	carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 4,13E-03 2,89E-02 3	mmonia re 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 4,96% 1,49E+0 365 0 1,00E+0 0 365 0 0 0 365 0 0 0 365 0 0 0
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai Distribution-type	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O <th< td=""><td>I 0 0 0 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0</td><td>carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 4,13E-03 2,89E-02 3 0</td><td>mmonia re 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 300 0 0</td><td>Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>300 4,96% 1,49E+0 365 0 0 0 1,00E+0 0 0 365 0 0 0 365 0 0 0</td></th<>	I 0 0 0 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 4,13E-03 2,89E-02 3 0	mmonia re 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 300 0 0	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 4,96% 1,49E+0 365 0 0 0 1,00E+0 0 0 365 0 0 0 365 0 0 0
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094	ongerous go o 0 0 0 0 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 0 0 0	ods vehicle 1 0 1 1 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 1	carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 4,13E-03 2,89E-02 3	mmonia re 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 4,96% 1,49E+0 365 0 1,00E+0 0 365 0 0 0 365 0 0 0 365 0 0 0
.1.4 - Traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O <th< td=""><td>I 0 0 0 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0</td><td>carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 4,13E-03 2,89E-02 3 0</td><td>mmonia re 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 300 0 0</td><td>Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>300 4,96% 1,49E+0 365 0 0 0 1,00E+0 0 0 0 365 0 0 0 365 0 0 0</td></th<>	I 0 0 0 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	carrying A 3 0 0 1,55% 1,09E-01 1,00E+05 0 4,13E-03 2,89E-02 3 0	mmonia re 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 300 0 0	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 4,96% 1,49E+0 365 0 0 0 1,00E+0 0 0 0 365 0 0 0 365 0 0 0
I.1.4 - Traffic acc Fatalitic Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average	ident involving D es road Poisson 85,0225 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson 0,000	O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O O	ods vehicle 1 0 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0 0 0	carrying A 3 0 0 1,55% 1,09E-01 1,09E-01 4,13E-03 2,89E-02 3 0	mmonia re 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	esulting in 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	Large rele 100 95,04% 9,50E+01 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	a se 300 4,96% 1,49E+0 365 0 0 1,00E+0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

12.3 Road accidents involving dangerous good vehicle carrying chlorine

					lorino rocu	ultina in na	rologeo	
1.2.1 - traffic acci	dent involving da	ingerous goo	ods vehicle	carrying ch	ionne resu		Telease	
Fataliti	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	0	0	0
Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	93,94%	5,87%	0,19%	0	0	0	0
Average	0,0625	0	5,87E-02	1,31E-02	0	0	0	0
Repai	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
5		1	1	L	1		1	1
Fatalities rai	l passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
,	0,000	, ,	Ū	Ŭ	Ū	Ŭ	Ŭ	Ū
					40		100	300
Fatalities rai	l employees	0	1	3	10	.30		
Fatalities rai		0	1	3	10	30		
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Distribution-type Average 1.2.2 - traffic acci	Poisson 0,000 dent involving da	1,00E+00 0	0 0 ods vehicle	0 0 carrying ch	0 0 Iorine resu	0 0 Ilting in sn	0 0 nall releas	0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti	Poisson 0,000 dent involving da es road	1,00E+00 0 ngerous goo	0 0 ods vehicle	0 0 carrying ch 3	0 0 Iorine resu 10	0 0 Ilting in sn 30	0 0 nall releas 100	0 0 e 300
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type	Poisson 0,000 dent involving da es road Poisson	1,00E+00 0 ngerous goo 97,17%	0 0 ods vehicle 1 2,79%	0 0 carrying ch 3 0,04%	0 0 lorine resu 10 0,00%	0 0 Ilting in sn 30 0	0 0 nall releas 100 0	0 0 e 300 0
Distribution-type Average 1.2.2 - traffic acci Fataliti	Poisson 0,000 dent involving da es road	1,00E+00 0 ngerous goo	0 0 ods vehicle	0 0 carrying ch 3	0 0 Iorine resu 10	0 0 Ilting in sn 30	0 0 nall releas 100	0 0 e 300
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287	1,00E+00 0 ngerous goo 97,17% 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch <u>3</u> 0,04% 1,21E-03	0 0 lorine resu 10 0,00% 2,76E-07	0 0 Ilting in sn 30 0 0	0 0 nall releas 100 0 0	0 0 8 9 0 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Disrupti	Poisson 0,000 dent involving da es road Poisson 0,0287 on road	1,00E+00 0 ingerous goo 97,17% 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7	0 0 lorine resu 0,00% 2,76E-07 14	0 0 Ilting in sn 30 0 0 30	0 0 nall releas 100 0 0	0 0 8 0 0 0 365
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson	1,00E+00 0 ingerous goo 97,17% 0 0 90,11%	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51%	0 0 lorine resu 10 0,00% 2,76E-07 14 0	0 0 0 0 30 0 0 0 30 0	0 0 nall releas 100 0 0 180 0	0 0 8 0 0 0 0 365 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Disrupti	Poisson 0,000 dent involving da es road Poisson 0,0287 on road	1,00E+00 0 ingerous goo 97,17% 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7	0 0 lorine resu 0,00% 2,76E-07 14	0 0 Ilting in sn 30 0 0 30	0 0 nall releas 100 0 0	0 0 8 0 0 0 365
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02	0 0 lorine resu 10 0,00% 2,76E-07 14 0 0	0 0 1lting in sn 30 0 0 30 0 0	0 0 nall releas 100 0 0 180 0 0	0 0 300 0 0 0 365 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05	0 0 Iorine resu 0,00% 2,76E-07 14 0 0	0 0 1lting in sn 30 0 0 0 30 0 0 1,00E+07	0 0 nall releas 100 0 0 180 0 0 0	0 0 300 0 0 0 365 0 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0	0 0 lorine resu 10 0,00% 2,76E-07 14 0 0 1,00E+06 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 nall releas 100 0 0 180 0 0 0 1,00E+08 0	0 0 300 0 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05	0 0 Iorine resu 0,00% 2,76E-07 14 0 0	0 0 1lting in sn 30 0 0 0 30 0 0 1,00E+07	0 0 nall releas 100 0 0 180 0 0 0	0 0 300 0 0 0 365 0 0 0 1,00E+09
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03	1,00E+00 0 97,17% 0 90,11% 0 1,00E+03 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0	0 0 lorine resu 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	0 0 1lting in sn 30 0 0 0 30 0 0 1,00E+07 0 0	0 0 nall releas 100 0 0 180 0 0 1,00E+08 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0	0 0 Iorine resu 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	0 0 1lting in sn 30 0 0 0 30 0 1,00E+07 0 0 30	0 0 nall releas 100 0 0 180 0 0 1,00E+08 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 9,49E-01	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	0 0 Iorine resu 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 nall releas 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0	0 0 Iorine resu 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	0 0 1lting in sn 30 0 0 0 30 0 1,00E+07 0 0 30	0 0 nall releas 100 0 0 180 0 0 1,00E+08 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052	1,00E+00 0 97,17% 0 97,17% 0 90,11% 0 1,00E+03 0 0 9,49E-01 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03	0 0 Iorine resu 10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0	0 0 0 1lting in sn 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 l passengers	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 9,49E-01 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	0 0 Iorine resu 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 nall releas 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052	1,00E+00 0 97,17% 0 97,17% 0 90,11% 0 1,00E+03 0 0 9,49E-01 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 Carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 0 1,31E-03 9,17E-03 3 0	0 0 Iorine resu 10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0	0 0 1lting in sn 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 l passengers	1,00E+00 0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 9,49E-01 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03	0 0 Iorine resu 10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0	0 0 1lting in sn 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052	1,00E+00 0 ngerous goo 97,17% 0 97,17% 0 90,11% 0 1,00E+03 0 0 9,49E-01 0 0 1,00E+00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 Carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 0 1,31E-03 9,17E-03 3 0	0 0 1orine resu 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0	0 0 0 0 11ting in sn 30 0 0 0 0 1,00E+07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 nall releas 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365 0 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052	1,00E+00 0 ngerous goo 97,17% 0 97,17% 0 90,11% 0 1,00E+03 0 0 9,49E-01 0 0 1,00E+00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 Carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 0 1,31E-03 9,17E-03 3 0	0 0 1orine resu 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0	0 0 0 0 11ting in sn 30 0 0 0 0 1,00E+07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 nall releas 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365 0 0 0
Distribution-type Average 1.2.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 dent involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 I passengers Poisson 0,000	1,00E+00 0 97,17% 0 97,17% 0 90,11% 0 90,11% 0 1,00E+03 0 9,49E-01 0 9,49E-01 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 carrying ch 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 9,17E-03 3 0 0	0 0 10rine resu 10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0 14 0 0 0	0 0 0 1lting in sn 30 0 0 0 0 1,00E+07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 100 0 0 0	0 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 0 365 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

1.2.3 - traffic accio	ient involving da	ingerous god		ourrying on		- J		
Fatalitie		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	11,21%	88,79%
Average	113,3538	0	0	0	0	0	1,12E+01	2,66E+02
Disruptio	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	88,25%	11,03%	0,72%	0	0	0	0
Average	0,1250	0	1,10E-01	5,03E-02	0	0	0	0
Repair		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
Disruption		0	1	7	14	30	180	365
Distribution-type	Poisson	9,39E-01	5,87E-02	1,87E-03	0	0	0	0
Average	0,063	0	5,87E-02	1,31E-02	0	0	0	0
Fatalities rail		0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rail		0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Average	0,000 dent involving Da	0 angerous go	ods vehicle	carrying C	hlorine res	sulting in L	.arge relea	ise
Average 1.2.4 - Traffic accio Fatalitie	0,000 dent involving Dates road	0 angerous go	ods vehicle 1	carrying C	hlorine res	sulting in L 30	arge relea	1se 300
Average 1.2.4 - Traffic acci Fatalitie Distribution-type	0,000 dent involving Dates road Poisson	0 angerous go 0	ods vehicle 1 0	carrying C 3 0	hlorine res 10 0	sulting in L 30 0	.arge relea 100 0,00%	300 100,00%
Average 1.2.4 - Traffic accio Fatalitie	0,000 dent involving Dates road	0 angerous go	ods vehicle 1	carrying C	hlorine res	sulting in L 30	arge relea	1se 300
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average	0,000 dent involving Dates s road Poisson 170,0164	0 angerous go 0 0	ods vehicle 1 0 0	carrying C 3 0 0	hlorine res 10 0 0	sulting in L 30 0	-arge relea 100 0,00% 4,16E-07	300 100,00% 3,00E+02
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Disruptio	0,000 dent involving Dates road Poisson 170,0164 on road	0 angerous go 0 0 0	ods vehicle 1 0 0 1	carrying C 3 0 0 7	hlorine res 10 0 0 14	30 0 30 30	100 0,00% 4,16E-07	300 100,00% 3,00E+02 365
Average 1.2.4 - Traffic acciv Fatalitie Distribution-type Average Distruptic Distribution-type	0,000 dent involving Dates s road Poisson 170,0164	0 angerous go 0 0	ods vehicle 1 0 0	carrying C 3 0 0	hlorine res 10 0 0	sulting in L 30 0	-arge relea 100 0,00% 4,16E-07	300 100,00% 3,00E+02
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Disruptio	0,000 dent involving Dates road Poisson 170,0164 Poisson	0 angerous go 0 0 0 82,90%	ods vehicle 1 0 0 1 15,54%	carrying C 3 0 0 7 1,55%	hlorine res 10 0 0 14 0	sulting in L 30 0 0 30 0	arge relea 100 0,00% 4,16E-07 180 0	300 100,00% 3,00E+02 365 0
Average 1.2.4 - Traffic acciv Fatalitie Distribution-type Average Distruptic Distribution-type	0,000 dent involving Dates s road Poisson 170,0164 poisson 0,1875	0 angerous go 0 0 0 82,90%	ods vehicle 1 0 0 1 15,54%	carrying C 3 0 0 7 1,55%	hlorine res 10 0 0 14 0	30 0 0 30 0 0	arge relea 100 0,00% 4,16E-07 180 0	300 100,00% 3,00E+02 365 0 0
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Disruptic Distribution-type Average	0,000 dent involving Dates s road Poisson 170,0164 poisson 0,1875	0 angerous go 0 0 0 82,90% 0	ods vehicle 1 0 0 1 15,54% 1,55E-01	carrying C 3 0 0 7 1,55% 1,09E-01	hlorine res 10 0 0 14 0 0	30 0 0 30 0 0	arge relea 100 0,00% 4,16E-07 180 0 0	300 100,00% 3,00E+02 365 0 0
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Disruptic Distribution-type Average Repair	0,000 dent involving Dates s road Poisson 170,0164 on road Poisson 0,1875 costs	0 angerous go 0 0 0 82,90% 0 1,00E+03	ods vehicle 1 0 1 1 1 5,54% 1,55E-01 1,00E+04	carrying C 3 0 0 1,55% 1,09E-01 1,00E+05	hlorine res 10 0 14 0 0 1,00E+06	30 0 0 30 0 0 0 1,00E+07	100 0,00% 4,16E-07 180 0 0 0	300 100,00% 3,00E+02 365 0 0 0
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Distribution-type Average Repair Distribution-type	0,000 dent involving Dates road Poisson 170,0164 Poisson 0,1875 costs Poisson	0 angerous go 0 0 0 82,90% 0 1,00E+03 0	ods vehicle 1 0 1 1 15,54% 1,55E-01 1,00E+04 100,00%	carrying C 3 0 0 7 1,55% 1,09E-01 1,00E+05 0	hlorine res 10 0 0 14 0 0 1,00E+06 0	30 0 0 0 30 0 0 0 1,00E+07 0	100 0,00% 4,16E-07 180 0 0 1,00E+08 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Distribution-type Average Repair Distribution-type	0,000 dent involving Dates s road Poisson 170,0164 Poisson 0,1875 costs Poisson 5,00E+03	0 angerous go 0 0 0 82,90% 0 1,00E+03 0	ods vehicle 1 0 1 1 15,54% 1,55E-01 1,00E+04 100,00%	carrying C 3 0 0 7 1,55% 1,09E-01 1,00E+05 0	hlorine res 10 0 0 14 0 0 1,00E+06 0	30 0 0 0 30 0 0 0 1,00E+07 0	100 0,00% 4,16E-07 180 0 0 1,00E+08 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0
Average	0,000 dent involving Dates s road Poisson 170,0164 Poisson 0,1875 costs Poisson 5,00E+03	0 angerous go 0 0 0 82,90% 0 1,00E+03 0 0	ods vehicle 1 0 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04	carrying C 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0	hlorine res 10 0 0 14 0 0 1,00E+06 0 0 0	30 0 0 0 30 0 0 30 0 0 1,00E+07 0 0	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Disruptic Distribution-type Average Repair Distribution-type Average Distribution-type	0,000 dent involving Dates s road Poisson 170,0164 Poisson 0,1875 costs Poisson 5,00E+03 on rail	0 angerous go 0 0 0 82,90% 0 1,00E+03 0 0 0	ods vehicle 1 0 1 1 5,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1	carrying C 3 0 0 1,55% 1,09E-01 1,00E+05 0 0 0	hlorine res 10 0 14 0 0 1,00E+06 0 0 14	30 0 0 0 30 0 0 30 0 1,00E+07 0 0 30	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 1 80	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 0
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Distribution-type Average Repair Distribution-type Average Distribution-type Distribution-type Distribution-type	0,000 dent involving Dates s road Poisson 170,0164 Poisson 0,1875 costs Poisson 5,00E+03 on rail Poisson	0 angerous go 0 0 0 0 82,90% 0 1,00E+03 0 0 0 9,11E-01	ods vehicle 1 0 1 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02	carrying C 3 0 0 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03	hlorine res 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0	30 0 0 0 30 0 0 30 0 0 1,00E+07 0 0 0 30 0	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 180 0 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 0 0 365 0 0
Average 1.2.4 - Traffic acci Fatalitie Distribution-type Average Distribution-type Average Repair Distribution-type Average Distribution-type Distribution-type Distribution-type	0,000 dent involving Date is road Poisson 170,0164 Poisson 0,1875 costs Poisson 5,00E+03 on rail Poisson 0,094	0 angerous go 0 0 0 0 82,90% 0 1,00E+03 0 0 0 9,11E-01	ods vehicle 1 0 1 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02	carrying C 3 0 0 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03	hlorine res 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0	30 0 0 0 30 0 0 30 0 0 1,00E+07 0 0 0 30 0	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 180 0 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 0 365 0 0
Average	0,000 dent involving Date is road Poisson 170,0164 Poisson 0,1875 costs Poisson 5,00E+03 on rail Poisson 0,094	0 angerous go 0 0 0 82,90% 0 1,00E+03 0 0 9,11E-01 0	ods vehicle 1 0 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 8,54E-02 8,54E-02	carrying C 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02	hlorine res 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 0 14 0 0 0	30 0 0 0 30 0 0 1,00E+07 0 0 30 0 0	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 180 0 0 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 365 0 0 0
Average	0,000 dent involving Dates s road Poisson 170,0164 Poisson 0,1875 costs Poisson 5,00E+03 on rail Poisson 0,094 passengers	0 angerous go 0 0 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 0 0	ods vehicle 1 0 1 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 1	carrying C 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0 0 7 4,13E-03 2,89E-02	hlorine res 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 10 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365
Average	0,000 dent involving Disson 170,0164 Poisson 0,1875 costs Poisson 0,1875 costs Poisson 5,00E+03 on rail Poisson 0,094 passengers Poisson	0 angerous go 0 0 0 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 1,00E+00	ods vehicle 1 0 1 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	carrying C 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0	hlorine res 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 0 180 0 0 0 0 180 0 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365 0 0 0 365 0 0 0 0
Average	0,000 dent involving Dates s road Poisson 170,0164 Poisson 0,1875 Costs Poisson 5,00E+03 on rail Poisson 0,094 passengers Poisson 0,000	0 angerous go 0 0 0 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 1,00E+00	ods vehicle 1 0 1 0 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	carrying C 3 0 0 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0	hlorine res 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0 0 180 0 0 0 0 180 0 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365 0 0 0 365 0 0 0 0
Average	0,000 dent involving Dates s road Poisson 170,0164 Poisson 0,1875 Costs Poisson 5,00E+03 on rail Poisson 0,094 passengers Poisson 0,000	0 angerous go 0 0 0 82,90% 0 1,00E+03 0 9,11E-01 0 1,00E+00 0 1,00E+00 0	ods vehicle 1 0 0 1 1 5,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0 0 0	carrying C 3 0 0 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0 0 0	hlorine res 10 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 0 14 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0	30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.arge relea 100 0,00% 4,16E-07 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 100,00% 3,00E+02 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0 365

12.4 Road accidents involving dangerous good vehicle carrying lpg

I.3.1 - traffic acci					5 5			
	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	0	0	0
Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	93,94%	5,87%	0,19%	0	0	0	0
Average	0,0625	0	5,87E-02	1,31E-02	0	0	0	0
	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+0
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
· · ·	tion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	l passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	il employees	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
			-	-				
Average	0,000	0	0	0	0	0	0	0
Average	0,000 ident involving da es road	0 angerous goo	0 ods vehicle	0	-	-	elease no	
Average .3.2 - traffic acci Fataliti	ident involving da	0 angerous goo 0	0 ods vehicle 1	0 carrying lpg 3	g resulting 10	in small r	-	ignition
Average .3.2 - traffic acci Fataliti Distribution-type	ident involving da	0 angerous goo	0 ods vehicle	0 carrying lpg 3 0,04%	g resulting 10 0,00%	in small r 30	elease no 100	ignition 300
Average .3.2 - traffic acci Fataliti	ident involving da es road Poisson	0 angerous goo 0 97,17%	0 ods vehicle 1 2,79%	0 carrying lpg 3	g resulting 10	in small r 30 0	elease no 100 0	ignition 300 0
Average .3.2 - traffic acc Fataliti Distribution-type Average	ident involving da es road Poisson	0 angerous goo 0 97,17%	0 ods vehicle 1 2,79%	0 carrying lpg 3 0,04%	g resulting 10 0,00%	in small r 30 0	elease no 100 0	ignition 300 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Disrupti	ident involving da es road Poisson 0,0287	0 angerous goo 0 97,17% 0	0 ods vehicle 1 2,79% 2,79E-02 1	0 carrying lpg 3 0,04% 1,21E-03 7	g resulting 10 0,00% 2,76E-07	in small r 30 0	elease no 100 0 0	ignition 300 0 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Disrupti Distribution-type	ident involving da es road Poisson 0,0287 on road Poisson	0 angerous goo 97,17% 0	0 ods vehicle 1 2,79% 2,79E-02	0 carrying lpg <u>3</u> 0,04% 1,21E-03 7 0,51%	10 0,00% 2,76E-07	in small r 30 0 0 30	elease no 100 0 0 180	ignition 300 0 0 365
Average .3.2 - traffic acci Fataliti Distribution-type Average Disrupti	ident involving da es road Poisson 0,0287 on road	0 angerous goo 97,17% 0 0 90,11%	0 ods vehicle 1 2,79% 2,79E-02 1 9,39%	0 carrying lpg 3 0,04% 1,21E-03 7	g resulting 10 0,00% 2,76E-07 14 0	in small r 30 0 0 30 0	elease no 100 0 0 180 0	ignition 300 0 0 365 0
Average .3.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Average	ident involving da es road Poisson 0,0287 on road Poisson	0 angerous goo 97,17% 0 0 90,11%	0 ods vehicle 1 2,79% 2,79E-02 1 9,39%	0 carrying lpg <u>3</u> 0,04% 1,21E-03 7 0,51%	g resulting 10 0,00% 2,76E-07 14 0	in small r 30 0 0 30 0 0	elease no 100 0 0 180 0	ignition 300 0 0 365 0 0
Average .3.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Average	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042	0 angerous goo 97,17% 0 90,11% 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02	g resulting 10 0,00% 2,76E-07 14 0 0	in small r 30 0 0 30 0 0	elease no 100 0 0 180 0 0	ignition 300 0 0 365 0 0
Average .3.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05	10 0,00% 2,76E-07 14 0 0 1,00E+06	in small r 30 0 0 30 0 0 1,00E+07	elease no 100 0 180 0 0 1,00E+08	ignition 300 0 0 365 0 0 1,00E+0
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00%	0 carrying lpg <u>3</u> 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0	in small r 30 0 0 30 0 0 1,00E+07 0	elease no 100 0 180 0 0 1,00E+08 0	ignition 300 0 0 365 0 0 0 1,00E+0 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00%	0 carrying lpg <u>3</u> 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0	in small r 30 0 0 30 0 0 1,00E+07 0	elease no 100 0 180 0 0 1,00E+08 0	ignition 300 0 0 365 0 0 1,00E+0 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0	g resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	in small r 30 0 0 30 0 0 1,00E+07 0 0	elease no 100 0 0 180 0 0 1,00E+08 0 0	ignition 300 0 0 365 0 0 1,00E+0 0 0 0
Average .3.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	ident involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0	g resulting 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14	in small r 30 0 0 30 0 0 1,00E+07 0 0 30	elease no 100 0 180 0 0 1,00E+08 0 0 180	ignition 300 0 365 0 1,00E+0 0 0 365
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 0 9,49E-01	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02	0 carrying lps 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	g resulting 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	in small r 30 0 0 30 0 0 1,00E+07 0 0 30 0 30 0 0	elease no 100 0 180 0 0 1,00E+08 0 0 180 0 0	ignition 300 0 0 365 0 0 1,00E+0 0 0 365 0 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Average Average Average Average	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 0 9,49E-01	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02	0 carrying lps 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	g resulting 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	in small r 30 0 0 30 0 0 1,00E+07 0 0 30 0 30 0 0	elease no 100 0 180 0 0 1,00E+08 0 0 180 0 0	ignition 300 0 0 365 0 0 1,00E+0 0 0 365 0 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Average Average	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 9,49E-01 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03	g resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 0	in small r 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	elease no 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 0 0	ignition 300 0 0 365 0 0 1,00E+0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average .3.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai	ident involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052 I passengers	0 angerous goo 97,17% 0 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 9,49E-01 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02 1	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3	g resulting 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14	in small r 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 30	elease no 100 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	ignition 300 0 0 365 0 1,00E+0 0 0 365 0 0 0 365 0 0 365
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rai Distribution-type	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 I passengers Poisson	0 angerous goo 97,17% 0 90,11% 0 0 1,00E+03 0 0 0 0 1,00E+01 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1,00E+04 1 4,94E-02 4,94E-02 1 0	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3 0	g resulting 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 0	in small r 30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30 0 0	elease no 100 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 100 0 0	ignition 300 0 0 365 0 0 0 1,00E+0 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average Average	ident involving da es road Poisson 0,0287 ion road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 I passengers Poisson	0 angerous goo 97,17% 0 90,11% 0 0 1,00E+03 0 0 0 0 1,00E+01 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1,00E+04 1 4,94E-02 4,94E-02 1 0	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3 0	g resulting 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 0	in small r 30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30 0 0	elease no 100 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 100 0 0	ignition 300 0 0 365 0 0 0 1,00E+0 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average .3.2 - traffic acci Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Fatalities rai Distribution-type Average	ident involving da es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 tion rail Poisson 0,052 I passengers Poisson 0,000	0 angerous goo 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 0 1,00E+01 0 1,00E+01 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 4,94E-02 4,94E-02 1 0 0	0 carrying lpg 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 9,17E-03 3 0 0	g resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	in small r 30 0 0 0 0 0 0 0 1,00E+07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	elease no 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 180 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	ignition 300 0 0 365 0 0 1,00E+0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

1.3.3 - traffic acci ignition leading to								
Fataliti		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	215,3177	0	0	0	0	0	0	3,00E+02
		•		•			•	
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	365,0000	0	0	0	0	0	0	1,88E+02
Repair	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	5,00E+08	0	0	0	0	0	0	1,00E+09
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	5,14E-01
Average	365,000	0	0	0	0	0	0	1,88E+02
Fatalities rai		0	1	3	10	30	100	300
Distribution-type	Poisson	2,13E-01	3,29E-01	3,86E-01		7,43E-07	0	0
Average	1,547	0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
		-						300
Fatalities rai		0	1	3	10	30	100	
Distribution-type	Poisson	2,13E-01	3,29E-01	3,86E-01	7,17E-02	7,43E-07	0	0
		-		-	-			
Distribution-type Average 1.3.5 - traffic acci ignition leading to	Poisson 1,547 dent involving da o a bleve	2,13E-01 0	3,29E-01 3,29E-01 ods vehicle	3,86E-01 1,16E+00 carrying lpg	7,17E-02 7,17E-01 g resulting	7,43E-07 2,23E-05 in small re	0 0 elease, im	0 0 mediate
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitic	Poisson 1,547 dent involving da o a bleve es road	2,13E-01 0 ngerous goo	3,29E-01 3,29E-01 ods vehicle	3,86E-01 1,16E+00 carrying lpg 3	7,17E-02 7,17E-01 g resulting 10	7,43E-07 2,23E-05 in small re 30	0 0 elease, im 100	0 0 mediate 300
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fataliti Distribution-type	Poisson 1,547 dent involving da o a bleve es road Poisson	2,13E-01 0 ngerous goo 0 0	3,29E-01 3,29E-01 ods vehicle 1 0	3,86E-01 1,16E+00 carrying lpg 3 0	7,17E-02 7,17E-01 g resulting 10 0	7,43E-07 2,23E-05 in small r 30 0	0 0 elease, im 100 0	0 0 mediate 300 100,00%
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitic	Poisson 1,547 dent involving da o a bleve es road	2,13E-01 0 ngerous goo	3,29E-01 3,29E-01 ods vehicle	3,86E-01 1,16E+00 carrying lpg 3	7,17E-02 7,17E-01 g resulting 10	7,43E-07 2,23E-05 in small re 30	0 0 elease, im 100	0 0 mediate 300
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177	2,13E-01 0 ngerous goo 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0	7,17E-02 7,17E-01 g resulting 10 0	7,43E-07 2,23E-05 in small r 30 0 0	0 0 elease, im 100 0 0	0 0 mediate 300 100,00% 3,00E+02
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Disrupti	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road	2,13E-01 0 ngerous goo 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 7	7,17E-02 7,17E-01 g resulting 10 0 0 14	7,43E-07 2,23E-05 in small r 30 0 0 30	0 0 elease, im 100 0 0 180	0 0 mediate 300 100,00% 3,00E+02 365
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Distribution-type	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson	2,13E-01 0 ingerous goo 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 7 0	7,17E-02 7,17E-01 g resulting 0 0 0 14 0	7,43E-07 2,23E-05 in small r 30 0 0 30 0	0 0 elease, im 100 0 0 180 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39%
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Disrupti	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road	2,13E-01 0 ngerous goo 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 7	7,17E-02 7,17E-01 g resulting 10 0 0 14	7,43E-07 2,23E-05 in small r 30 0 0 30	0 0 elease, im 100 0 0 180	0 0 mediate 300 100,00% 3,00E+02 365
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,0000	2,13E-01 0 ngerous goo 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 0 1 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0	7,17E-02 7,17E-01 g resulting 0 0 0 14 0 0	7,43E-07 2,23E-05 in small r 30 0 0 30 0 0	0 0 elease, im 100 0 0 180 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Average Repair	Poisson 1,547 dent involving da b a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 1,00E+03	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 1,00E+04	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 1,00E+05	7,17E-02 7,17E-01 g resulting 0 0 14 0 0 1,00E+06	7,43E-07 2,23E-05 in small r 30 0 0 30 0 0 1,00E+07	0 0 elease, im 100 0 0 180 0 0 1,00E+08	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fataliti Distribution-type Average Distribution-type Average Repain Distribution-type	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs Poisson	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 0 1,00E+05 0	7,17E-02 7,17E-01 g resulting 0 0 0 14 0 0 1,00E+06 0	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00%
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Average Repair	Poisson 1,547 dent involving da b a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 1,00E+03	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 1,00E+04	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 1,00E+05	7,17E-02 7,17E-01 g resulting 0 0 14 0 0 1,00E+06	7,43E-07 2,23E-05 in small r 30 0 0 30 0 0 1,00E+07	0 0 elease, im 100 0 0 180 0 0 1,00E+08	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Average Repair Distribution-type Average	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs Poisson 5,00E+08	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 0 1,00E+05 0	7,17E-02 7,17E-01 g resulting 0 0 0 14 0 0 1,00E+06 0 0	7,43E-07 2,23E-05 in small r 30 0 0 30 0 0 1,00E+07 0 0	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00%
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fataliti Distribution-type Average Distribution-type Average Repain Distribution-type	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs Poisson 5,00E+08	2,13E-01 0 ngerous goo 0 0 0 0 0 1,00E+03 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0	7,17E-02 7,17E-01 g resulting 0 0 0 14 0 0 1,00E+06 0	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00%
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Average Repain Distribution-type Average	Poisson 1,547 dent involving da b a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs Poisson 5,00E+08 ion rail	2,13E-01 0 ngerous goo 0 0 0 0 1,00E+03 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 1 1	3,86E-01 1,16E+00 carrying lpg 3 0 0 7 0 0 1,00E+05 0 0 7	7,17E-02 7,17E-01 9 resulting 0 0 0 14 0 0 1,00E+06 0 0 0	7,43E-07 2,23E-05 in small r 30 0 0 30 0 0 1,00E+07 0 0 0 30	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da b a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs Poisson 5,00E+08 ion rail Poisson	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 0 1 0 1 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 0 0	7,17E-02 7,17E-01 g resulting 0 0 0 14 0 0 1,00E+06 0 0 0 14 0 0	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,000 r costs Poisson 5,00E+08 ion rail Poisson 365,000	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 0 1 0 1 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 0 0	7,17E-02 7,17E-01 g resulting 0 0 0 14 0 0 1,00E+06 0 0 0 14 0 0	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,000 r costs Poisson 5,00E+08 ion rail Poisson 365,000	2,13E-01 0 ngerous goo 0 0 0 0 0 1,00E+03 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0 7 0 0 0 7 0 0 0 0	7,17E-02 7,17E-01 9 resulting 0 0 0 14 0 0 1,00E+06 0 0 1,00E+06 0 0 14 0 0	7,43E-07 2,23E-05 in small r 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitio Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da b a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs Poisson 5,00E+08 ion rail Poisson 365,000	2,13E-01 0 ngerous goo 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 7 0 0 1,00E+05 0 0 7 0 0 3	7,17E-02 7,17E-01 9 resulting 0 0 0 14 0 0 1,00E+06 0 0 0 14 0 0 0	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 30	0 0 elease, im 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da b a bleve es road Poisson 215,3177 on road Poisson 365,0000 r costs Poisson 5,00E+08 ion rail Poisson 365,000 I passengers Poisson	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0 0 7 0 0 0 3 3,86E-01	7,17E-02 7,17E-01 9 resulting 0 0 0 14 0 0 1,00E+06 0 0 0 14 0 0 0 14 0 0 0 7,17E-02	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 7,43E-07	0 0 0 elease, im 100 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300 0
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,000 r costs Poisson 5,00E+08 ion rail Poisson 365,000 I passengers Poisson 1,547	2,13E-01 0 ingerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0 0 7 0 0 0 3 3,86E-01	7,17E-02 7,17E-01 9 resulting 0 0 0 14 0 0 1,00E+06 0 0 0 14 0 0 0 14 0 0 0 7,17E-02	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 7,43E-07	0 0 0 elease, im 100 0 0 180 0 0 0 180 0 0 0 180 0 0 0 180 0 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300 0
Distribution-type Average 1.3.5 - traffic acci ignition leading to Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da o a bleve es road Poisson 215,3177 on road Poisson 365,000 r costs Poisson 5,00E+08 ion rail Poisson 365,000 I passengers Poisson 1,547	2,13E-01 0 ngerous goo 0 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3,29E-01 3,29E-01 ods vehicle 1 0 0 1 0 0 1,00E+04 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	3,86E-01 1,16E+00 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0 0 7 0 0 3 3,86E-01 1,16E+00	7,17E-02 7,17E-01 9 resulting 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7,43E-07 2,23E-05 in small r 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 7,43E-07 2,23E-05	0 0 0 elease, im 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 100 0 0	0 0 mediate 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300 0 0

1.3.7 - traffic accide immediate ignition	-	-						
Fatalities	sroad	0	1	3	10	30	100	300
Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	0	0	0
Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
Disruption	n road	0	1	7	14	30	180	365
Distribution-type	Poisson	88,25%	11,03%	0,72%	0	0	0	0
Average	0,1250	0	1.10E-01	5,03E-02	0	0	0	0
, tionago	0,1200	, °	1,102 01	0,002.02	Ŭ	Ŭ	Ŭ	Ŭ
Repair o	costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
<u></u>		4				Į	ļ	
Disruptio	on rail	0	1	7	14	30	180	365
Distribution-type	Poisson	9,39E-01	5,87E-02	1,87E-03	0	0	0	0
Average	0,063	0	5,87E-02	1,31E-02	0	0	0	0
-		•	<u>. </u>	<u>.</u>			•	
Fatalities rail p	passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
		•	•	•		•	•	
	amplayaaa	0	1	3	10	30	100	300
Fatalities rail e	empioyees		•	-				
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Distribution-type Average	Poisson 0,000	1,00E+00 0	0	0 0	0	0	0	0
Distribution-type Average 1.3.8 - traffic accide ignition leading to Fatalities	Poisson 0,000 ent involving da a explosion	1,00E+00 0 angerous goo	0 0 ods vehicle	0 0 carrying lpg 3	0 g resulting 10	0 in mediur 30	0 m release, 100	0 delayed 300
Distribution-type Average 1.3.8 - traffic accide ignition leading to a	Poisson 0,000 ent involving da a explosion s road Poisson	1,00E+00 0	0 0 ods vehicle	0 0 carrying lpg	0 g resulting	0 in mediur	0 n release,	0 delayed 300 100,00%
Distribution-type Average 1.3.8 - traffic accide ignition leading to Fatalities	Poisson 0,000 ent involving da a explosion s road	1,00E+00 0 angerous goo	0 0 ods vehicle	0 0 carrying lpg 3	0 g resulting 10	0 in mediur 30	0 m release, 100	0 delayed 300
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177	1,00E+00 0 angerous goo 0 0	0 0 ods vehicle 1 0	0 0 carrying lpg 3 0	0 g resulting 10 0	0 in mediur 30 0	0 n release, 100 0	0 delayed 300 100,00%
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177	1,00E+00 0 angerous goo 0 0	0 0 ods vehicle 1 0 0	0 0 carrying lpg 3 0 0	0 g resulting 10 0 0	0 in mediur 30 0 0	0 m release, 100 0	0 delayed 300 100,00% 3,00E+02
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Disruption	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road	1,00E+00 0 angerous goo 0 0 0 0	0 0 0 0 0 0 1	0 0 carrying lps 3 0 0 7	0 g resulting 10 0 0 14	0 in mediur 30 0 0 30	0 n release, 100 0 0 180	0 delayed 300 100,00% 3,00E+02 365
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Distribution-type	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson	1,00E+00 0 angerous goo 0 0 0 0 0	0 0 0 0 0 0 0 1 0	0 0 carrying lpg 3 0 0 0 7 0	0 g resulting 0 0 14 0	0 in mediur 30 0 0 30 0	0 n release, 100 0 0 180 0	0 delayed 300 100,00% 3,00E+02 365 51,39%
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Distribution-type	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000	1,00E+00 0 angerous goo 0 0 0 0 0	0 0 0 0 0 0 0 1 0	0 0 carrying lpg 3 0 0 0 7 0	0 g resulting 0 0 14 0	0 in mediur 30 0 0 30 0	0 n release, 100 0 0 180 0	0 delayed 300 100,00% 3,00E+02 365 51,39%
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000	1,00E+00 0 angerous goo 0 0 0 0 0	0 0 0 0 0 0 1 0 0 0	0 0 carrying lpg 3 0 0 7 0 0	0 g resulting 0 0 14 0 0	0 in mediur 30 0 0 30 0 0	0 m release, 100 0 0 180 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000	1,00E+00 0 angerous goo 0 0 0 0 0 0 0 1,00E+03	0 0 0 0 0 0 1 0 0 0 1,00E+04	0 0 carrying lps 3 0 0 0 7 0 0 0 1,00E+05	0 g resulting 0 0 14 0 0 1,00E+06	0 in mediur 30 0 0 30 0 0 0 1,00E+07	0 n release, 100 0 0 180 0 0 1,00E+08	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08	1,00E+00 0 angerous goo 0 0 0 0 0 0 1,00E+03 0 0	0 0 0 0 0 1 0 0 0 1,00E+04 0	0 0 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0	0 g resulting 0 0 14 0 0 1,00E+06 0	0 in mediur 30 0 0 30 0 0 0 1,00E+07 0	0 n release, 100 0 0 180 0 0 1,00E+08 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00%
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Repair of Distribution-type	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08	1,00E+00 0 angerous goo 0 0 0 0 0 0 0 1,00E+03 0	0 0 0 0 0 1 0 0 0 1,00E+04 0	0 0 carrying lpg 3 0 0 0 7 0 0 0 1,00E+05 0	0 g resulting 0 0 14 0 0 1,00E+06 0	0 in mediur 30 0 0 30 0 0 0 1,00E+07 0	0 n release, 100 0 0 180 0 0 1,00E+08 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,88E+02 1,00E+09 100,00% 1,00E+09 365
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08	1,00E+00 0 angerous goo 0 0 0 0 0 0 1,00E+03 0 0	0 0 0 0 0 0 1 0 0 0 1,00E+04 0 0	0 0 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0	0 g resulting 0 0 14 0 0 1,00E+06 0 0	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0	0 m release, 100 0 0 180 0 0 1,00E+08 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Constribution-type Average Average Constribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08	1,00E+00 0 angerous goo 0 0 0 0 0 0 1,00E+03 0 0 0	0 0 0 0 0 1 0 0 0 1,00E+04 0 0 0	0 0 carrying lps 3 0 0 0 7 0 0 1,00E+05 0 0 7	0 resulting 10 0 0 14 0 0 1,00E+06 0 0 14	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0 30	0 m release, 100 0 180 0 1,00E+08 0 0 180	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,88E+02 1,00E+09 100,00% 1,00E+09 365
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08 n rail Poisson 365,000	1,00E+00 0 angerous goo 0 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0	0 0 0 0 0 1 0 0 0 1,00E+04 0 0 0 1 0 0 0	0 0 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0 0 7 0 0	0 g resulting 0 0 0 14 0 0 1,00E+06 0 0 14 0 0	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0	0 m release, 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 100,00% 1,00E+09 365 5,14E-01 1,88E+02
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Con	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08 n rail Poisson 365,000	1,00E+00 0 angerous goo 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 0 1,00E+04 0 0 0 1 0 0 1 0 0	0 0 carrying lps 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 0 0 0 3	0 g resulting 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30	0 m release, 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08 n rail Poisson 365,000 poisson 365,000	1,00E+00 0 angerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 1 0 0 0 1,00E+04 0 0 0 0 1,00E+04 0 0 0 0 1 0 0 0 1 0 0 0	0 0 carrying lps 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 0 0 0 7 0 0 0 3 3,86E-01	0 resulting 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 7,17E-02	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 7,43E-07	0 m release, 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300 0
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Con	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08 n rail Poisson 365,000	1,00E+00 0 angerous goo 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 0 1,00E+04 0 0 0 1 0 0 1 0 0	0 0 carrying lps 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 0 0 0 3	0 g resulting 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30	0 m release, 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08 poisson 365,000 passengers Poisson 365,000	1,00E+00 0 angerous goo 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 1 0 0 0 1,00E+04 0 0 0 0 1,00E+04 0 0 0 0 1 0 0 0 1 0 0 0	0 0 carrying lps 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 0 0 0 7 0 0 0 3 3,86E-01	0 resulting 10 0 0 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 7,17E-02	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 7,43E-07	0 m release, 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300 0
Distribution-type Average 1.3.8 - traffic accide ignition leading to a Fatalities Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-	Poisson 0,000 ent involving da a explosion s road Poisson 215,3177 n road Poisson 365,0000 costs Poisson 5,00E+08 poisson 365,000 passengers Poisson 365,000	1,00E+00 0 angerous goo 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 1,00E+04 0 0 0 0 1,00E+04 0 0 0 0 1 0 0 1 0 0 0 1 3,29E-01 3,29E-01	0 0 carrying lpg 3 0 0 0 7 0 0 1,00E+05 0 0 1,00E+05 0 0 0 1,00E+05 0 0 0 3 ,86E-01 1,16E+00	0 resulting 10 0 0 14 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0	0 in mediur 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 7,43E-07 2,23E-05	0 n release, 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0 180 0 0	0 delayed 300 100,00% 3,00E+02 365 51,39% 1,88E+02 1,00E+09 100,00% 1,00E+09 365 5,14E-01 1,88E+02 300 0 0

1.3.10 - traffic acc	-				-	-	ini release	,
immediate ignitio Fatalitie		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	215,3177	0	0	0	0	0	0	3,00E+02
, tiologo			Ŭ	•	Ŭ	Ŭ	Ŭ	0,002 02
Disruptio	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	365,0000	0	0	0	0	0	0	1,88E+02
Repair	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	5,00E+08	0	0	0	0	0	0	1,00E+09
		,						
Disrupt		0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	5,14E-01
Average	365,000	0	0	0	0	0	0	1,88E+02
Estalitica rai		0	1	3	10	30	100	200
Fatalities rail	Poisson	-			7,17E-02		100	300
Distribution-type		2,13E-01	3,29E-01	3,86E-01		7,43E-07 2.23E-05	-	0
Average	1,547	0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
Estalities rei	lomploveee	0	1	3	10	30	100	300
ratanties rai	remployees							
Fatalities rai				3.86E-01	7.17E-02	7.43E-07	0	0
Distribution-type Average	Poisson 1,547	2,13E-01 0	3,29E-01 3,29E-01	3,86E-01 1,16E+00	7,17E-02 7,17E-01	7,43E-07 2,23E-05	0	0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio	Poisson 1,547 cident involving d on leading to a no	2,13E-01 0 angerous go ignition	3,29E-01 3,29E-01 oods vehicle	1,16E+00 carrying lp	7,17E-01	2,23E-05 g in large	0 release, no	0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitie	Poisson 1,547 cident involving d on leading to a no es road	2,13E-01 0 angerous go ignition 0	3,29E-01 3,29E-01 pods vehicle	1,16E+00 carrying lp 3	7,17E-01 og resultin 10	2,23E-05 g in large 30	0 release, no 100	0 0 300
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type	Poisson 1,547 cident involving d on leading to a no es road Poisson	2,13E-01 0 angerous go ignition 0 97,17%	3,29E-01 3,29E-01 pods vehicle 1 2,79%	1,16E+00 carrying lp 3 0,04%	7,17E-01 og resultin 10 0,00%	2,23E-05 g in large	0 release, no 100 0	0 300 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitie	Poisson 1,547 cident involving d on leading to a no es road	2,13E-01 0 angerous go ignition 0	3,29E-01 3,29E-01 pods vehicle	1,16E+00 carrying lp 3	7,17E-01 og resultin 10	2,23E-05 g in large 30 0	0 release, no 100	0 0 300
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287	2,13E-01 0 angerous go ignition 0 97,17%	3,29E-01 3,29E-01 pods vehicle 1 2,79%	1,16E+00 carrying lp 3 0,04%	7,17E-01 og resultin 10 0,00%	2,23E-05 g in large 30 0	0 release, no 100 0	0 300 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287	2,13E-01 0 angerous go ignition 0 97,17% 0	3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02	1,16E+00 carrying lp 3 0,04% 1,21E-03	7,17E-01 og resulting 10 0,00% 2,76E-07	2,23E-05 g in large 30 0	0 release, no 100 0 0	0 300 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Disruptio	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road	2,13E-01 0 angerous go ignition 97,17% 0 0	3,29E-01 3,29E-01 oods vehicle 1 2,79% 2,79E-02 1	1,16E+00 carrying lp 3 0,04% 1,21E-03 7	7,17E-01 og resultin 0,00% 2,76E-07 14	2,23E-05 g in large 30 0 0 30	0 release, no 100 0 0 180	0 300 0 0 365
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Distribution-type	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson	2,13E-01 0 angerous go ignition 0 97,17% 0 0 82,90%	3,29E-01 3,29E-01 oods vehicle 1 2,79% 2,79E-02 1 15,54%	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55%	7,17E-01 og resulting 0,00% 2,76E-07 14 0	2,23E-05 g in large 30 0 0 30 0	0 release, no 0 0 0 180 0	0 300 0 0 365 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Repair	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson	2,13E-01 0 angerous go ignition 0 97,17% 0 0 82,90%	3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55%	7,17E-01 og resulting 10 0,00% 2,76E-07 14 0 0	2,23E-05 g in large 30 0 0 30 0	0 release, no 0 0 0 180 0	0 300 0 0 365 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875	2,13E-01 0 angerous go ignition 0 97,17% 0 97,17% 0 82,90% 0	3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00%	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01	7,17E-01 og resulting 10 0,00% 2,76E-07 14 0 0	2,23E-05 g in large 30 0 0 30 0 0 1,00E+07 0	0 release, no 0 0 180 0 0	0 300 0 0 365 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Repair	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs	2,13E-01 0 angerous go ignition 97,17% 0 82,90% 0 1,00E+03	3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05	7,17E-01 og resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06	2,23E-05 g in large 30 0 0 30 0 0 1,00E+07	0 release, no 0 0 0 180 0 0 0 1,00E+08	0 300 0 0 365 0 0 0 1,00E+09
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03	2,13E-01 0 angerous go ignition 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0	3,29E-01 3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 1,00E+04	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0	7,17E-01 og resultin 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	2,23E-05 g in large 30 0 0 30 0 0 1,00E+07 0 0	0 release, no 0 0 0 180 0 0 1,00E+08 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail	2,13E-01 0 angerous go ignition 0 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0 0	3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 7 7	7,17E-01 og resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14	2,23E-05 g in large 30 0 0 30 0 0 1,00E+07 0 0 30	0 release, no 0 0 0 180 0 0 1,00E+08 0 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitie Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson	2,13E-01 0 angerous go ignition 97,17% 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 0 0 9,11E-01	3,29E-01 3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 1,00E+04 1,00E+04 1 8,54E-02	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03	7,17E-01 og resultin 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0	2,23E-05 g in large 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 0	0 release, no 0 0 0 180 0 0 1,00E+08 0 0 0	0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail	2,13E-01 0 angerous go ignition 0 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0 0	3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 7 7	7,17E-01 og resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14	2,23E-05 g in large 30 0 0 30 0 0 1,00E+07 0 0 30	0 release, no 0 0 0 180 0 0 1,00E+08 0 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094	2,13E-01 0 angerous go ignition 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 0 9,11E-01 0	3,29E-01 3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02	7,17E-01 og resultin 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	2,23E-05 g in large 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 release, no 0 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers	2,13E-01 0 angerous go ignition 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 0	3,29E-01 3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 8,54E-02	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3	7,17E-01 og resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14	2,23E-05 g in large 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30	0 release, no 0 0 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson	2,13E-01 0 angerous go ignition 97,17% 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 9,11E-01 0 9,11E-01 0 1,00E+00	3,29E-01 3,29E-01 3,29E-01 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0	7,17E-01 og resultin, 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	2,23E-05 g in large 30 0 0 30 0 1,00E+07 0 0 30 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 release, no 0 0 0 0 180 0 0 0 180 0 0 180 0 0 0 180 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers	2,13E-01 0 angerous go ignition 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 0	3,29E-01 3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 8,54E-02	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3	7,17E-01 og resulting 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 14 0 0 10 10 10 10 10 10 10 10	2,23E-05 g in large 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 30	0 release, no 0 0 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitie Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson 0,000	2,13E-01 0 angerous go ignition 97,17% 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 9,11E-01 0 9,11E-01 0	3,29E-01 3,29E-01 3,29E-01 00ds vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+04 8,54E-02 8,54E-02 1 0 0	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0 0 0	7,17E-01 og resultin 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 10 0 0 10 0 0	2,23E-05 g in large 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 release, no 0 0 0 0 180 0 0 1,00E+08 0 0 0 100 0 0 100 0 0	0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0 0 300
Distribution-type Average 1.3.12 - traffic acc immediate ignitio Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 cident involving d on leading to a no es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson 0,000	2,13E-01 0 angerous go ignition 97,17% 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 9,11E-01 0 9,11E-01 0 1,00E+00	3,29E-01 3,29E-01 3,29E-01 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	1,16E+00 carrying lp 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0	7,17E-01 og resultin, 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 14 0 0 0 14 0 0 0 14 0 0 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	2,23E-05 g in large 30 0 0 30 0 1,00E+07 0 0 30 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 release, no 0 0 0 0 180 0 0 0 180 0 0 180 0 0 0 180 0 0	0 300 0 0 365 0 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0

1.3.15 - traffic acc a immediate ignit	cident involving da tion - explosion	angerous go	ods vehicle	e carrying lp	og resulting	g in large	release, l	eading to
Fataliti	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	215,3177	0	0	0	0	0	0	3,00E+02
					-			
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	365,0000	0	0	0	0	0	0	1,88E+02
Repair	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	5,00E+08	0	0	0	0	0	0	1,00E+09
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	5,14E-01
Average	365,000	0	0	0	0	0	0	1,88E+02
Fatalities rai	lpassengers	0	1	3	10	30	100	300
Distribution-type	Poisson	2,13E-01	3,29E-01	3,86E-01	7,17E-02	7,43E-07	0	0
Average	1,547	0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
Fatalities rai	l employees	0	1	3	10	30	100	300
Distribution-type	Poisson	2,13E-01	3,29E-01	3,86E-01	7,17E-02	7,43E-07	0	0
Average	1,547	0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0

12.5 Road accidents involving dangerous goods vehicle carrying flammable liquids

.4.1 - traffic acci of heptane	dent involving da	ingerous goo	ods vehicle	carrying fla	mmable li	quidsresul	ting in no	release
Fataliti	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	0	0	0
Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
					1			
Disrupti		0	1	7	14	30	180	365
Distribution-type	Poisson	93,94%	5,87%	0,19%	0	0	0	0
Average	0,0625	0	5,87E-02	1,31E-02	0	0	0	0
Repair	r aanta	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1 005+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
Average	5,00E+03	0	1,000+04	U	0	0	0	0
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
	-,	-		-		-		
Fatalities rai	passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
- 1		•	I					I
Fatalities rai	l employees	0	1	3	10	30	100	300
		4 005 00	0	0	0	0	0	0
Distribution-type	Poisson	1,00E+00	0	0	U	Ũ	Ŭ	U U
Average	0,000	0	0	0	0	0	0	0
	0,000 dent involving da no ignition	0	0	0	0	0	0	0
Average .4.2 - traffic acci reptane release	0,000 dent involving da no ignition	0 Ingerous goo	0 ods vehicle	0 carrying fla	0 mmable li	0 quids resu	0 Iting in sm	0 nall
Average .4.2 - traffic acci eptane release Fatalitic	0,000 dent involving da no ignition es road	0 Ingerous goo	0 ods vehicle 1	0 carrying fla 3	0 mmable li 10	0 quids resu 30	0 Iting in sm 100	0 nall 300
Average .4.2 - traffic acci eptane release Fatalitie Distribution-type	0,000 dent involving da no ignition es road Poisson	0 Ingerous goo 0 97,17%	0 ods vehicle 1 2,79%	0 carrying fla 3 0,04%	0 mmable li 10 0,00%	0 quids resu <u>30</u> 0	0 I lting in sm 100 0	0 nall <u>300</u> 0
Average .4.2 - traffic acci eptane release Fatalitie Distribution-type	0,000 dent involving da no ignition es road Poisson 0,0287	0 Ingerous goo 0 97,17%	0 ods vehicle 1 2,79% 2,79E-02 1	0 carrying fla 3 0,04% 1,21E-03 7	0 mmable li 10 0,00%	0 quids resu <u>30</u> 0	0 I lting in sm 100 0	0 nall <u>300</u> 0
Average .4.2 - traffic acci leptane release Fatalitic Distribution-type Average	0,000 dent involving da no ignition es road Poisson 0,0287	0 ngerous goo 0 97,17% 0	0 ods vehicle 1 2,79% 2,79E-02	0 carrying fla <u>3</u> 0,04% 1,21E-03	0 mmable li 0,00% 2,76E-07	0 quids resu 30 0 0	0 Iting in sm 100 0 0	0 nall 300 0 0
Average .4.2 - traffic acci teptane release Fatalitic Distribution-type Average Disrupti	0,000 dent involving da no ignition es road Poisson 0,0287 on road	0 Ingerous goo 0 97,17% 0 0	0 ods vehicle 1 2,79% 2,79E-02 1	0 carrying fla 3 0,04% 1,21E-03 7	0 mmable li 0,00% 2,76E-07 14	0 quids resu 30 0 0 30	0 Iting in sm 100 0 0 180	0 all 300 0 0 365
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042	0 ngerous goo 97,17% 0 90,11% 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02	0 carrying fla 0,04% 1,21E-03 7 0,51% 3,54E-02	0 mmable li 0,00% 2,76E-07 14 0 0	0 quids resu 30 0 0 30 0 0	0 Iting in sm 100 0 0 180 0 0	0 all 0 0 0 365 0 0
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repair	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042	0 Ingerous goo 0 97,17% 0 0 90,11% 0 1,00E+03	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05	0 mmable li 0,00% 2,76E-07 14 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07	0 Iting in sm 100 0 0 180 0 0 0 1,00E+08	0 all 300 0 0 365 0 0 0
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson	0 Ingerous goo 97,17% 0 90,11% 0 1,00E+03 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00%	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0	0 quids resu 30 0 0 30 0 0 0 1,00E+07 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0	0 all 300 0 0 365 0 0 0 1,00E+09
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repair	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042	0 Ingerous goo 0 97,17% 0 0 90,11% 0 1,00E+03	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05	0 mmable li 0,00% 2,76E-07 14 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07	0 Iting in sm 100 0 0 180 0 0 0 1,00E+08	0 all 300 0 0 365 0 0 0 1,00E+0
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03	0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00%	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0	0 all 300 0 0 365 0 0 0 1,00E+0 0 0
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Constribution-type Average Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constri	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail	0 Ingerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 30	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0	0 all 300 0 0 365 0 0 0 1,00E+09 0 0 365
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03	0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 0	0 all 300 0 0 365 0 0 0 1,00E+0 0 0
Average .4.2 - traffic acci leptane release Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson	0 ingerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 9,49E-01	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 0 30 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 0	0 all 300 0 0 365 0 0 0 1,00E+0 0 0 0 365 0
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Distribution-type	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052	0 ingerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 0 9,49E-01	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 0 30 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 0	0 all 300 0 0 365 0 0 0 1,00E+0 0 0 0 365 0
Average .4.2 - traffic acci eptane release Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Average	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052	0 ngerous goo 97,17% 0 90,11% 0 1,00E+03 0 0 9,49E-01 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 all 300 0 0 365 0 0 0 1,00E+0 0 0 365 0 0
Average .4.2 - traffic acci leptane release Fatalitic Distribution-type Average Distribution-type Average Repair Distribution-type Average Distribution-type Average Construction-type Average Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Construction-type Constr	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 I passengers	0 Ingerous goo 97,17% 0 90,11% 0 1,00E+03 0 1,00E+03 0 9,49E-01 0 0 0	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02 1	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 all 300 0 0 365 0 0 0 1,00E+0 0 0 365 0 0 0
Average .4.2 - traffic acci eptane release Fatalitie Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rai Distribution-type	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 I passengers Poisson	0 Ingerous goo 97,17% 0 90,11% 0 1,00E+03 0 9,49E-01 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02 1 0	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3 0	0 mmable li 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0 14 0 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 all 300 0 0 365 0 0 0 0 365 0 0 0 0 365 0 0 0
Average .4.2 - traffic acci eptane release Fatalitie Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rai Distribution-type	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 I passengers Poisson 0,000	0 Ingerous goo 97,17% 0 90,11% 0 1,00E+03 0 9,49E-01 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02 1 0	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 3 0	0 mmable li 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0 14 0 0 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 all 300 0 0 365 0 0 0 0 365 0 0 0 0 365 0 0 0
Average .4.2 - traffic acci eptane release Fatalitie Distribution-type Average Distribution-type Average Repain Distribution-type Average Fatalities rai Distribution-type Average	0,000 dent involving da no ignition es road Poisson 0,0287 on road Poisson 0,1042 r costs Poisson 5,00E+03 ion rail Poisson 0,052 I passengers Poisson 0,000	0 Ingerous goo 97,17% 0 90,11% 0 1,00E+03 0 9,49E-01 0 1,00E+00 0 1,00E+00	0 ods vehicle 1 2,79% 2,79E-02 1 9,39% 9,39E-02 1,00E+04 100,00% 1,00E+04 1 4,94E-02 4,94E-02 1 0 0	0 carrying fla 3 0,04% 1,21E-03 7 0,51% 3,54E-02 1,00E+05 0 0 0 7 1,31E-03 9,17E-03 9,17E-03 3 0 0	0 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0 10 0	0 quids resu 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 0 30 0 0 0	0 Iting in sm 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 all 300 0 0 365 0 0 0 0 365 0 0 0 365 0 0 0 0 300 0 0 0

.4.3 - traffic acci elease, ignition	-	e				————		
Fatalitie	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	215,3177	0	0	0	0	0	0	3,00E+0
Disruptio	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	365,0000	0	0	0	0	0	0	1,88E+0
Repair	t -	1,00E+03	4 005 04	4 005 05	1,00E+06	4 005 07	4 005 00	4 00510
	Poisson		1,00E+04	1,00E+05			1,00E+08	1,00E+0
Distribution-type Average	5,00E+08	0	0	0	0	0	0	1,00E+0
	0,002 00					<u> </u>		.,
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	5,14E-0
Average	365,000	0	0	0	0	0	0	1,88E+0
Fatalities rail	nassengers	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	1,13E-09	2,00E-02	9.80E-01	0
Average	43,473	0	0	0	1,13E-09	,	9,80E+01	0
Avelage	43,473	0	0	0	1,152-00	0,012-01	9,000-101	0
Fatalities rai	l employees	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	1,13E-09	2.00E-02	9,80E-01	0
	1 000001	0	0	0	1,13⊑-09	2,00E-02	9,00∟-01	0
Average	43,473 dent involving da	0 angerous goo	0 ods vehicle	0	1,13E-08	6,01E-01	9,80E+01	0
Average	43,473 dent involving da release leading t	0 angerous goo	0 ods vehicle	0	1,13E-08	6,01E-01	9,80E+01	0
Average .4.5 - traffic acci elease, medium	43,473 dent involving da release leading t	0 angerous goo to a no ignit	0 ods vehicle ion	0 carrying fla	1,13E-08 mmable li	6,01E-01 quids resu	9,80E+01	0 ptane
Average .4.5 - traffic acci elease, medium Fatalitic	43,473 dent involving da release leading t es road	0 angerous goo to a no igniti 0	0 ods vehicle ion 1	0 carrying fla 3	1,13E-08 mmable li 10	6,01E-01 quids resu 30	9,80E+01	0 ptane 300
Average .4.5 - traffic acci elease, medium Fatalitic Distribution-type Average	43,473 dent involving da release leading t es road Poisson 0,0287	0 angerous goo to a no igniti 0 97,17% 0	0 ods vehicle on 1 2,79% 2,79E-02	0 carrying fla 0,04% 1,21E-03	1,13E-08 mmable li 10 0,00% 2,76E-07	6,01E-01 quids resu 30 0	9,80E+01 Ilting in he 100 0	0 ptane 300 0 0
Average .4.5 - traffic acci elease, medium Fatalitic Distribution-type Average Disruptio	43,473 dent involving da release leading t es road Poisson 0,0287 on road	0 angerous goo to a no igniti 0 97,17% 0 0	0 ods vehicle ion 1 2,79% 2,79E-02 1	0 carrying fla 3 0,04% 1,21E-03 7	1,13E-08 mmable li 0,00% 2,76E-07 14	6,01E-01 quids resu 30 0 0 30	9,80E+01 Iting in he 100 0 0 180	0 ptane 300 0 0 365
Average I.4.5 - traffic acci elease, medium Fatalitic Distribution-type Average	43,473 dent involving da release leading t es road Poisson 0,0287	0 angerous goo to a no igniti 0 97,17% 0	0 ods vehicle on 1 2,79% 2,79E-02	0 carrying fla 0,04% 1,21E-03	1,13E-08 mmable li 10 0,00% 2,76E-07	6,01E-01 quids resu 30 0	9,80E+01 Ilting in he 100 0	0 ptane 300 0 0
Average .4.5 - traffic acci elease, medium Fatalitic Distribution-type Average Distribution-type Average	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250	0 angerous goo to a no igniti 0 97,17% 0 97,17% 0 88,25% 0	0 ods vehicle ion 1 2,79% 2,79E-02 1 11,03% 1,10E-01	0 carrying fla 0,04% 1,21E-03 7 0,72% 5,03E-02	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0	6,01E-01 quids resu 30 0 0 30 0 0	9,80E+01 Ilting in he 100 0 180 0 0 0	0 ptane 300 0 0 365 0 0
Average Average .4.5 - traffic acci elease, medium Fatalitic Distribution-type Average Disruptic Distribution-type Average Repair	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs	0 angerous goo to a no ignit 97,17% 0 97,17% 0 88,25% 0 1,00E+03	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0	6,01E-01 quids resu 30 0 0 30 0 0 1,00E+07	9,80E+01 Iting in he 100 0 180 0 0 1,00E+08	0 ptane 300 0 0 365 0 0 0
Average Average Average Average Average Distribution-type Average Distribution-type Average Repain Distribution-type	43,473 dent involving da release leading t es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson	0 angerous goo to a no igniti 0 97,17% 0 88,25% 0 0 1,00E+03 0	0 ods vehicle ion 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00%	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0	1,13E-08 mmable li 10 0,00% 2,76E-07 14 0 0 1,00E+06 0	6,01E-01 quids resu 30 0 0 30 0 0 1,00E+07 0	9,80E+01 Iting in he 100 0 0 180 0 0 1,00E+08 0	0 ptane 300 0 0 365 0 0 0 1,00E+0 0
Average Average Average Average Average Distribution-type Average Distribution-type Average Repain	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs	0 angerous goo to a no ignit 97,17% 0 97,17% 0 88,25% 0 1,00E+03	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0	6,01E-01 quids resu 30 0 0 30 0 0 1,00E+07	9,80E+01 Iting in he 100 0 180 0 0 1,00E+08	0 ptane 300 0 0 365 0 0 0
Average Average Average Average Average Distribution-type Average Distribution-type Average Repain Distribution-type	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson 5,00E+03	0 angerous goo to a no igniti 0 97,17% 0 88,25% 0 0 1,00E+03 0	0 ods vehicle ion 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00%	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0	1,13E-08 mmable li 10 0,00% 2,76E-07 14 0 0 1,00E+06 0	6,01E-01 quids resu 30 0 0 30 0 0 1,00E+07 0	9,80E+01 Iting in he 100 0 0 180 0 0 1,00E+08 0	0 ptane 300 0 0 365 0 0 0 1,00E+(0
Average .4.5 - traffic acci elease, medium Fatalitic Distribution-type Average Distribution-type Average Repair Distribution-type Average	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson 5,00E+03	0 angerous goo o a no igniti 0 97,17% 0 88,25% 0 1,00E+03 0 0 0	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00% 1,00E+04 1	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0 0	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	6,01E-01 quids resu 30 0 0 30 0 0 1,00E+07 0 0	9,80E+01 ilting in he 100 0 180 0 0 1,00E+08 0 0 0	0 ptane 300 0 0 365 0 0 1,00E+C 0 0
Average Average Average Average Average Distribution-type Average Distribution-type Average Repain Distribution-type Average	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson 5,00E+03 ion rail	0 angerous goo o a no igniti 0 97,17% 0 88,25% 0 1,00E+03 0	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00% 1,00E+04	0 carrying fla 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14	6,01E-01 quids resu 30 0 0 30 0 1,00E+07 0 0 30 30	9,80E+01 Iting in he 100 0 180 0 1,00E+08 0 0 180 180	0 ptane 300 0 0 365 0 0 0 1,00E+(0 0 0 365
Average Average Average Average Average Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Distribution-type Average Average Distribution-type Average	43,473 dent involving da release leading to release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson 5,00E+03 ion rail Poisson 0,063	0 angerous goo to a no igniti 0 97,17% 0 88,25% 0 1,00E+03 0 1,00E+03 0 0 9,39E-01 0	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+04 5,87E-02 5,87E-02	0 carrying fla 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0 0 7 1,87E-03 1,31E-02	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	6,01E-01 quids resu 30 0 0 30 0 0 1,00E+07 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	9,80E+01 ilting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 0 180 0 0	0 ptane 300 0 0 365 0 0 1,00E+(0 0 365 0 0 0 365
Average Averag	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson 5,00E+03 ion rail Poisson 0,063 I passengers	0 angerous goo o a no igniti 0 97,17% 0 88,25% 0 1,00E+03 0 1,00E+03 0 9,39E-01 0 0 0	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00% 1,00E+04 1 5,87E-02 5,87E-02 5,87E-02 1	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0 0 7 1,87E-03 1,31E-02 3	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	6,01E-01 quids resu 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	9,80E+01 Iting in he 100 0 0 180 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0	0 ptane 300 0 365 0 0 1,00E+(0 0 365 0 0 0 365 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average Distribution-type Average Distribution-type Average Average Fatalities rail Distribution-type	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson 5,00E+03 ion rail Poisson 0,063 I passengers Poisson	0 angerous goo o a no ignit 0 97,17% 0 88,25% 0 1,00E+03 0 9,39E-01 0 1,00E+00	0 ods vehicle on 1 2,79% 2,79E-02 1 1,03% 1,10E-01 1,00E+04 100,00% 1,00E+04 1 5,87E-02 5,87E-02 1 0	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0 0 7 1,87E-03 1,31E-02 3 0	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0	6,01E-01 quids resu 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	9,80E+01 Iting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ptane 300 0 0 365 0 0 0 365 0 0 365 0 0 0 365 0 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average Averag	43,473 dent involving da release leading to es road Poisson 0,0287 on road Poisson 0,1250 r costs Poisson 5,00E+03 ion rail Poisson 0,063 I passengers	0 angerous goo o a no igniti 0 97,17% 0 88,25% 0 1,00E+03 0 1,00E+03 0 9,39E-01 0 0 0	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00% 1,00E+04 1 5,87E-02 5,87E-02 5,87E-02 1	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0 0 7 1,87E-03 1,31E-02 3	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	6,01E-01 quids resu 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	9,80E+01 Iting in he 100 0 0 180 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0	0 ptane 300 0 365 0 0 1,00E+(0 0 365 0 0 0 365 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average Average A.5 - traffic acci elease, medium Fatalitic Distribution-type Average Distribution-type Average Bistribution-type Average Distribution-type Average Bistribution-type Average Fatalities rail Distribution-type	43,473 dent involving da release leading to release leading to release leading to road Poisson 0,0287 On road Poisson 0,1250 r costs Poisson 5,00E+03 ion rail Poisson 0,063 I passengers Poisson 0,000	0 angerous goo o a no ignit 0 97,17% 0 88,25% 0 1,00E+03 0 9,39E-01 0 1,00E+00	0 ods vehicle on 1 2,79% 2,79E-02 1 1,03% 1,10E-01 1,00E+04 100,00% 1,00E+04 1 5,87E-02 5,87E-02 1 0	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0 0 7 1,87E-03 1,31E-02 3 0	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0	6,01E-01 quids resu 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	9,80E+01 Iting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ptane 300 0 0 365 0 0 0 365 0 0 365 0 0 0 365 0 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average Average Average Average Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rail Distribution-type Average	43,473 dent involving da release leading to release leading to release leading to road Poisson 0,0287 On road Poisson 0,1250 r costs Poisson 5,00E+03 ion rail Poisson 0,063 I passengers Poisson 0,000	0 angerous goo o a no igniti 0 97,17% 0 88,25% 0 1,00E+03 0 0 9,39E-01 0 1,00E+00 0	0 ods vehicle on 1 2,79% 2,79E-02 1 11,03% 1,10E-01 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+04 100,00% 1,00E+04 0 0 0	0 carrying fla 3 0,04% 1,21E-03 7 0,72% 5,03E-02 1,00E+05 0 0 0 7 1,87E-03 1,31E-02 3 0 0	1,13E-08 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 0 10 0	6,01E-01 quids resu 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	9,80E+01 ilting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ptane 300 0 365 0 0 1,00E+(0 0 365 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

1.4.6 - traffic acci release, medium	release leading t	o a bleve						
Fataliti		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	215,3177	0	0	0	0	0	0	3,00E+02
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	365,0000	0	0	0	0	0	0	1,88E+02
			•	•		•		
Repair	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	5,00E+08	0	0	0	0	0	0	1,00E+09
		•	•	•	•	•	•	
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	5,14E-01
Average	365,000	0	0	0	0	0	0	1,88E+02
		•	•	•	•	•	•	
Fatalities rai	lpassengers	0	1	3	10	30	100	300
Distribution-type	Poisson	2,13E-01	3,29E-01	3,86E-01	7,17E-02	7,43E-07	0	0
Average	1,547	0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
		•	•	•		•	•	
Fatalities rai		0	1	3	10	30	100	300
ratanues fai	i employees	v						
Distribution-type	Poisson	2,13E-01	3,29E-01	3,86E-01	7,17E-02	7,43E-07	0	0
	Poisson 1,547	2,13E-01 0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
Distribution-type Average	Poisson 1,547 dent involving da ease leading to r	2,13E-01 0 Ingerous goo	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
Distribution-type Average 1.4.8 - traffic acci release, large rele	Poisson 1,547 dent involving da ease leading to r	2,13E-01 0 ingerous goo	3,29E-01 ods vehicle	1,16E+00 carrying fla	7,17E-01 mmable li	2,23E-05 quids resu	0 Ilting in he	0 ptane
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitie	Poisson 1,547 dent involving da ease leading to r es road	2,13E-01 0 no ignition 0	3,29E-01 ods vehicle	1,16E+00 carrying fla 3	7,17E-01 mmable li 10	2,23E-05 quids resu 30	0 Ilting in he 100	0 ptane 300
Distribution-type Average 1.4.8 - traffic acci release, large relu Fataliti Distribution-type	Poisson 1,547 dent involving da ease leading to r es road Poisson	2,13E-01 0 ingerous goo o ignition 0 97,17%	3,29E-01 ods vehicle 1 2,79%	1,16E+00 carrying fla 3 0,04%	7,17E-01 mmable li <u>10</u> 0,00%	2,23E-05 quids resu 30 0	0 Ilting in he 100 0	0 ptane 300 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fataliti Distribution-type	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287	2,13E-01 0 ingerous goo o ignition 0 97,17%	3,29E-01 ods vehicle 1 2,79%	1,16E+00 carrying fla 3 0,04%	7,17E-01 mmable li <u>10</u> 0,00%	2,23E-05 quids resu 30 0	0 Ilting in he 100 0	0 ptane 300 0
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitic Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287	2,13E-01 0 ingerous goo o ignition 0 97,17% 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02	1,16E+00 carrying fla 0,04% 1,21E-03	7,17E-01 mmable li 0,00% 2,76E-07	2,23E-05 quids resu 30 0	0 Ilting in he 100 0 0	0 ptane 300 0 0
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitie Distribution-type Average Disrupti	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road	2,13E-01 0 ingerous goo o ignition 97,17% 0 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1	1,16E+00 carrying fla 3 0,04% 1,21E-03 7	7,17E-01 mmable li 0,00% 2,76E-07 14	2,23E-05 quids resu 30 0 0 30	0 Ilting in he 100 0 0 180	0 ptane 300 0 0 365
Distribution-type Average 1.4.8 - traffic acci release, large relu Fataliti Distribution-type Average Distribution-type Distribution-type	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson	2,13E-01 0 ingerous goo o ignition 0 97,17% 0 0 82,90%	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54%	1,16E+00 carrying fla <u>3</u> 0,04% 1,21E-03 7 1,55%	7,17E-01 mmable li 0,00% 2,76E-07 14 0	2,23E-05 quids resu 30 0 0 30 0	0 Iting in he 100 0 0 180 0	0 ptane 300 0 0 365 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fataliti Distribution-type Average Distribution-type Distribution-type	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875	2,13E-01 0 ingerous goo o ignition 0 97,17% 0 0 82,90%	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54%	1,16E+00 carrying fla <u>3</u> 0,04% 1,21E-03 7 1,55%	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0	2,23E-05 quids resu 30 0 0 30 0	0 Ilting in he 0 0 180 0 0	0 ptane 300 0 0 365 0
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitic Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875	2,13E-01 0 ingerous goo o ignition 0 97,17% 0 82,90% 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0	2,23E-05 quids resu 30 0 0 30 0 0	0 Ilting in he 0 0 180 0 0	0 ptane 300 0 0 365 0 0
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitic Distribution-type Average Distribution-type Average Repai	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs	2,13E-01 0 ingerous goo ignition 97,17% 0 97,17% 0 82,90% 0 1,00E+03	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0	2,23E-05 quids resu 30 0 0 30 0 0 1,00E+07	0 Ilting in he 100 0 0 180 0 0 1,00E+08	0 ptane 300 0 0 365 0 0 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fataliti Distribution-type Average Distribution-type Average Repain Distribution-type	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00%	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0	2,23E-05 quids resu 30 0 0 30 0 0 1,00E+07 0	0 Iting in he 100 0 0 180 0 0 1,00E+08 0	0 ptane 300 0 0 365 0 0 0 0 1,00E+09 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fataliti Distribution-type Average Distribution-type Average Repain Distribution-type	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00%	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0	2,23E-05 quids resu 30 0 0 30 0 0 1,00E+07 0	0 Iting in he 100 0 0 180 0 0 1,00E+08 0	0 ptane 300 0 0 365 0 0 0 0 1,00E+09 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fatalitic Distribution-type Average Distribution-type Average Repair Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03	2,13E-01 0 ingerous goo o ignition 97,17% 0 82,90% 0 1,00E+03 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 1,00E+04	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	2,23E-05 quids resu 30 0 0 30 0 0 1,00E+07 0 0	0 Ilting in he 100 0 0 180 0 0 1,00E+08 0 0	0 ptane 300 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitie Distribution-type Average Distribution-type Average Repair Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14	2,23E-05 quids resu 30 0 0 30 0 1,00E+07 0 0 30	0 Ilting in he 100 0 0 180 0 1,00E+08 0 0 0	0 ptane 300 0 0 365 0 0 0 1,00E+09 0 0 365
Distribution-type Average 1.4.8 - traffic acci release, large relu Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0 0 0 9,11E-01	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0	2,23E-05 quids resu 30 0 0 30 0 0 1,00E+07 0 0 30 0	0 Ilting in he 100 0 0 180 0 0 1,00E+08 0 0 0 180 0	0 ptane 300 0 0 365 0 0 1,00E+09 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fatalitic Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0 0 9,11E-01 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0	2,23E-05 quids resu 30 0 0 30 0 0 1,00E+07 0 0 30 0	0 Ilting in he 100 0 0 180 0 0 1,00E+08 0 0 0 180 0	0 ptane 300 0 0 365 0 0 1,00E+09 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094	2,13E-01 0 ingerous goo o ignition 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 0 9,11E-01 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	2,23E-05 quids resu 30 0 0 30 0 0 1,00E+07 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Iting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 0 180 0 0	0 ptane 300 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitie Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rai	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 1,00E+03 0 0 9,11E-01 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0	2,23E-05 quids resu 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Ilting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ptane 300 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 365 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fatalitit Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson 0,000	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 9,11E-01 0 9,11E-01 0 1,00E+00	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0	2,23E-05 quids resu 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Ilting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ptane 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 1.4.8 - traffic acci release, large rele Fatalitic Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson 0,000	2,13E-01 0 ingerous goo ignition 0 97,17% 0 82,90% 0 1,00E+03 0 0 9,11E-01 0 0 1,00E+00 0 0 1,00E+00 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0	2,23E-05 quids resu 30 0 0 30 0 1,00E+07 0 0 30 0 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Ilting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ptane 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 1.4.8 - traffic acci release, large relu Fatalitit Distribution-type Average Distribution-type Average Repain Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 1,547 dent involving da ease leading to r es road Poisson 0,0287 on road Poisson 0,1875 r costs Poisson 5,00E+03 ion rail Poisson 0,094 I passengers Poisson 0,000	2,13E-01 0 ingerous goo o ignition 97,17% 0 97,17% 0 82,90% 0 82,90% 0 1,00E+03 0 9,11E-01 0 9,11E-01 0 1,00E+00 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 15,54% 1,55E-01 1,00E+04 100,00% 1,00E+04 1 8,54E-02 8,54E-02 1 0 0	1,16E+00 carrying fla 3 0,04% 1,21E-03 7 1,55% 1,09E-01 1,00E+05 0 0 0 7 4,13E-03 2,89E-02 3 0 0	7,17E-01 mmable li 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14 0 0 0	2,23E-05 quids resu 30 0 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Iting in he 100 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ptane 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

1.4.9 - traffic acci release, large rel		0	ods vehicle	carrying fla	mmable li	quids resu	lting in he	ptane
Fataliti	es road	0	0	0	0	0	0	0
Distribution-type	Poisson	in DGV-fire e	0	0	0	0	0	0
Average	0,0000	0	0	0	0	0	0	0
Disrupti	on road	0	1	7	14	30	180	365
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0,0000	0	0	0	0	0	0	0
Repai	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0,00E+00	1,00E+03	0	0	0	0	0	0
Disrupt	ion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	lpassengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
Fatalities rai	l employees	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0

12.6 Road accidents involving vehicles carrying explosives

.5.1 - traffic acc							_	
	es road	0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
Average	215,3177	0	0	0	0	0	0	3,00E+0
Disrupt	ion road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average		0	0	0	0	0	0	1,88E+0
_								
	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06		1,00E+08	1,00E+0
Distribution-type		0	0	0	0	0	0	100,00%
Average	5,00E+08	0	0	0	0	0	0	1,00E+0
Disrup	tion rail	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	5,14E-0
Average		0	0	0	0	0	0	1,88E+0
	,	-	-	-	-			.,
Fatalities rai	il passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	2,13E-01	3,29E-01	3,86E-01	7,17E-02	7,43E-07	0	0
Average	1,547	0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
	il employees	0	1	3	10	30	100	300
Distribution-type	Poisson			2 965 01	7,17E-02	7 425 07	0	0
	1 0133011	2,13E-01	3,29E-01	3,86E-01	7,17E-02	7,43E-07	0	0
Average	1,547	0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
Average		0	3,29E-01	1,16E+00	7,17E-01	2,23E-05	0	0
Average .5.2 - traffic acc Fataliti	1,547 ident involving da es road	0 angerous goo	3,29E-01	1,16E+00 carrying ex	7,17E-01 posives re	2,23E-05	0 no detona	0 tion
Average	1,547 ident involving da es road	0 angerous goo 0	3,29E-01 ods vehicle 1	1,16E+00 carrying ex 3	7,17E-01 posives re 10	2,23E-05 sulting in 30	0 no detona 100	0 tion 300
Average .5.2 - traffic acc Fataliti Distribution-type	1,547 ident involving da es road Poisson	0 angerous goo 0 97,17%	3,29E-01 ods vehicle 1 2,79%	1,16E+00 carrying ex 3 0,04%	7,17E-01 posives re 10 0,00%	2,23E-05 sulting in 30 0	0 no detona 100 0	0 tion 300 0
Average .5.2 - traffic acc Fataliti Distribution-type Average	1,547 ident involving da es road Poisson	0 angerous goo 0 97,17% 0 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1	1,16E+00 carrying ex 3 0,04% 1,21E-03 7	7,17E-01 posives re 10 0,00%	2,23E-05 sulting in 30 0	0 no detona 100 0	0 tion 300 0
Average .5.2 - traffic acc Fataliti Distribution-type Average	1,547 ident involving da es road Poisson 0,0287 ion road	0 angerous goo 97,17% 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02	1,16E+00 carrying ex 3 0,04% 1,21E-03	7,17E-01 posives re 10 0,00% 2,76E-07	2,23E-05 sulting in 1 30 0 0	0 no detona 100 0 0	0 tion 300 0 0
Average .5.2 - traffic acc Fataliti Distribution-type Average Disrupt	1,547 ident involving da es road Poisson 0,0287 ion road	0 angerous goo 0 97,17% 0 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1	1,16E+00 carrying ex 3 0,04% 1,21E-03 7	7,17E-01 posives re 10 0,00% 2,76E-07 14	2,23E-05 sulting in 30 0 0 30	0 no detona 100 0 0 180	0 tion 0 0 0 365
Average .5.2 - traffic acc Fataliti Distribution-type Average Disrupt Distribution-type Average	1,547 ident involving da es road Poisson 0,0287 ion road Poisson 0,0625	0 angerous goo 97,17% 0 93,94% 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 5,87% 5,87E-02	1,16E+00 carrying ex 3 0,04% 1,21E-03 7 0,19% 1,31E-02	7,17E-01 posives re 10 0,00% 2,76E-07 14 0 0	2,23E-05 sulting in 1 30 0 0 30 0 0	0 no detona 100 0 0 180 0 0	0 tion 0 0 365 0 0
Average	1,547 ident involving da es road Poisson 0,0287 ion road Poisson 0,0625 r costs	0 angerous goo 97,17% 0 93,94% 0 1,00E+03	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04	1,16E+00 carrying ex 3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05	7,17E-01 posives re 10 0,00% 2,76E-07 14 0 0 1,00E+06	2,23E-05 sulting in 30 0 30 0 30 0 0 1,00E+07	0 no detona 100 0 0 180 0 0 0	0 tion 0 0 365 0 0 0 1,00E+0
Average .5.2 - traffic acc Fataliti Distribution-type Average Disrupt Distribution-type Average	1,547 ident involving da es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson	0 angerous goo 97,17% 0 93,94% 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 5,87% 5,87E-02	1,16E+00 carrying ex 3 0,04% 1,21E-03 7 0,19% 1,31E-02	7,17E-01 posives re 10 0,00% 2,76E-07 14 0 0	2,23E-05 sulting in 1 30 0 0 30 0 0	0 no detona 100 0 0 180 0 0	0 tion 0 0 365 0 0
Average .5.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type	1,547 ident involving da es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson	0 angerous goo 97,17% 0 93,94% 0 1,00E+03 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00%	1,16E+00 carrying ex 3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0	7,17E-01 posives re 10 0,00% 2,76E-07 14 0 0 1,00E+06 0	2,23E-05 sulting in 30 0 0 30 0 0 1,00E+07 0	0 no detona 100 0 0 180 0 0 0 1,00E+08 0	0 tion 0 0 0 365 0 0 0 1,00E+0 0
Average .5.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	1,547 ident involving da es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson	0 angerous goo 97,17% 0 93,94% 0 1,00E+03 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00%	1,16E+00 carrying ex 3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0	7,17E-01 posives re 10 0,00% 2,76E-07 14 0 0 1,00E+06 0	2,23E-05 sulting in 30 0 0 30 0 0 1,00E+07 0	0 no detona 100 0 0 180 0 0 0 1,00E+08 0	0 tion 0 0 0 365 0 0 0 1,00E+0 0
Average .5.2 - traffic acc Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	1,547 ident involving da es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03	0 angerous goo 97,17% 0 93,94% 0 1,00E+03 0 0	3,29E-01 ods vehicle 1 2,79% 2,79E-02 1 5,87% 5,87F-02 1,00E+04 100,00% 1,00E+04	1,16E+00 carrying ex 3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0	7,17E-01 posives re 10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	2,23E-05 sulting in 1 30 0 0 30 0 0 1,00E+07 0 0	0 no detona 100 0 0 180 0 0 0 1,00E+08 0 0	0 tion 0 0 365 0 0 0 1,00E+0 0 0
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	Distribution-type Average Distribution-type Distribution-type Average Constribution-type Distribution-type Distribution-type Constribution-type Co	Poisson 0,0287 road Poisson 0,1875	97,17% 0 0 82,90% 0	2,79% 2,79E-02 1 15,54%	0,04% 1,21E-03 7	0,00% 2,76E-07	0	0	0
Average 0.0287 0 2.79E-02 1.21E-03 2.76E-07 0 0 0 Disruption road 0 1 7 14 30 180 385 Distribution-type Poisson 82.90% 15.54% 1.055% 0 0 0 0 0 Repair costs 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 1,00E+08 1,00E+08 Distribution-type Poisson 0 100.00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 </th <th>Average Disruption Distribution-type Average Distribution-type Distribution-type</th> <th>0,0287 road Poisson 0,1875 ssts</th> <th>0 0 82,90% 0</th> <th>2,79E-02 1 15,54%</th> <th>1,21E-03 7</th> <th>2,76E-07</th> <th>0</th> <th>-</th> <th>-</th>	Average Disruption Distribution-type Average Distribution-type Distribution-type	0,0287 road Poisson 0,1875 ssts	0 0 82,90% 0	2,79E-02 1 15,54%	1,21E-03 7	2,76E-07	0	-	-
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Distribution-type Poisson 82.90% 15,54% 1,55% 0 0 0 0 0 Average 0,1875 0 1,55E-01 1,09E-01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>Distribution-type Average Repair co Distribution-type</td> <td>Poisson 0,1875</td> <td>82,90% 0</td> <td>15,54%</td> <td></td> <td>14</td> <td>30</td> <td></td> <td></td>	Distribution-type Average Repair co Distribution-type	Poisson 0,1875	82,90% 0	15,54%		14	30		
Distribution-type Poisson 82,90% 15,54% 1,55% 0 0 0 0 0 Average 0,1875 0 1,55E-01 1,09E-05 1,00E+06 1,00E+07 1,00E+08 1,00E+04 Distribution-type Poisson 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Distribution-type Average Repair co Distribution-type	Poisson 0,1875	0					180	365
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Disruption rail 0 1 7 14 30 180 365 Distribution-type Poisson 9,11E-01 8,54E-02 2,43E-03 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 </td <td>Average</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td>0</td> <td>0</td>	Average		-		-		-	0	0
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Distribution-type Poisson 9,11E-01 8,54E-02 4,13E-03 0 0 0 0 Average 0,094 0 8,54E-02 2,89E-02 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th< td=""><td>Disruption</td><td>rail</td><td>0</td><td>1</td><td>7</td><td>14</td><td>30</td><td>190</td><td>365</td></th<>	Disruption	rail	0	1	7	14	30	190	365
Average 0,094 0 8,54E-02 2,89E-02 0 0 0 0 Fatalities rail passengers 0 1 3 10 30 100 300 Distribution-type Poisson 1,00E+00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			-						
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Fatalities rail employees 0 1 3 10 30 100 300 Distribution-type Poisson 1,00E+00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Fatalities rail employees 0 1 3 10 30 100 300 Distribution-type Poisson 1,00E+00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0,000		0	0	0	0	0	0
Distribution-type Poisson 1,00E+00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td><u> </u></td></th<>									<u> </u>
Average 0,000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th< td=""><td>Fatalities rail er</td><td>nployees</td><td>0</td><td>1</td><td>3</td><td>10</td><td>30</td><td>100</td><td>300</td></th<>	Fatalities rail er	nployees	0	1	3	10	30	100	300
Average Overage Overage <t< td=""><td>Distribution-type</td><td>Poisson</td><td>1,00E+00</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></t<>	Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Patalities road 0 1 3 10 30 100 300 Distribution-type Poisson 97,17% 2,79% 0,04% 0,00% 0 0 0 Average 0,0287 0 2,79E-02 1,21E-03 2,76E-07 0 0 0 Disruption road 0 1 7 14 30 180 365 Distribution-type Poisson 88,25% 11,03% 0,72% 0 0 0 0 Average 0,1250 0 1,10E-01 5,03E-02 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Average	0,000	0	0	0	0	0	0	0
Average 0,0287 0 2,79E-02 1,21E-03 2,76E-07 0 0 0 Disruption road 0 1 7 14 30 180 365 Distribution-type Poisson 88,25% 11,03% 0,72% 0 0 0 0 Average 0,1250 0 1,10E-01 5,03E-02 0 0 0 0 0 Repair costs 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 1,00E+08 1,00E+08 Distribution-type Poisson 0 100,00% 0 0 0 0 0 Average 5,00E+03 0 1,00E+04 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <		oad	0	1	3	10	30	100	300
Disruption road 0 1 7 14 30 180 365 Distribution-type Poisson 88,25% 11,03% 0,72% 0 0 0 0 Average 0,1250 0 1,10E-01 5,03E-02 0 0 0 0 Repair costs 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 1,00E+08 1,00E+ Distribution-type Poisson 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	0	0	0
Distribution-type Poisson 88,25% 11,03% 0,72% 0 0 0 0 Average 0,1250 0 1,10E-01 5,03E-02 0 0 0 0 0 Repair costs 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 1,00E+08 1,00E+ Distribution-type Poisson 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
Distribution-type Poisson 88,25% 11,03% 0,72% 0 0 0 0 Average 0,1250 0 1,10E-01 5,03E-02 0 0 0 0 0 Repair costs 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 1,00E+08 1,00E+ Distribution-type Poisson 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									
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Repair costs 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 1,00E+08 1,00E+ Distribution-type Poisson 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<>								-	
Distribution-type Poisson 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Average	0,1250	0	1,10E-01	5,03E-02	0	0	0	0
Distribution-type Poisson 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Deneir ee	ata	4.0051.02	4 005-04	4 005 05	4 005 000	4 005 07	4 005 00	4 0051
Average 5,00E+03 0 1,00E+04 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			-			,	,	•	
Disruption rail 0 1 7 14 30 180 365			-		-	-		-	-
	Average	5,00L+05	0	1,002+04	0	0	0	0	0
	Disruption	rail	0	1	7	14	30	180	365
	Distribution-type	Poisson	9,39E-01	5,87E-02	1,87E-03	0	0	0	0
Average 0,063 0 5,87E-02 1,31E-02 0 0 0 0		0,063				0	0	0	0
Fatalities rail passengers0131030100300	Fatalities rail pa	ssengers	0	1	3	10	30	100	300
	Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
	Average	0,000	0	0	0	0	0	0	0
	P. 4 1141		-		-	4.5		465	
Average 0,000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th< td=""><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td></th<>			-						
Average 0,000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <th< td=""><td>Distribution-type Average</td><td>Poisson 0,000</td><td>1,00E+00 0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></th<>	Distribution-type Average	Poisson 0,000	1,00E+00 0	0	0	0	0	0	0

12.7 Road accidents involving vehicles carrying acids and bases

	ident involving da	angerous goo	ods vehicle	carrying ac	ids and ba	ses resulti	ing in smal	li release
Fataliti	es road	0	1	3	10	30	100	300
Distribution-type	Poisson	97,17%	2,79%	0,04%	0,00%	0	0	0
Average	0,0287	0	2,79E-02	1,21E-03	2,76E-07	0	0	0
Disrupt	ion road	0	1	7	14	30	180	365
Distribution-type	Poisson	90,11%	9,39%	0,51%	0	0	0	0
Average	0,1042	0	9,39E-02	3,54E-02	0	0	0	0
Repai	r costs	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	100,00%	0	0	0	0	0
Average	5,00E+03	0	1,00E+04	0	0	0	0	0
Disrupt	tion rail	0	1	7	14	30	180	365
Distribution-type	Poisson	9,49E-01	4,94E-02	1,31E-03	0	0	0	0
Average	0,052	0	4,94E-02	9,17E-03	0	0	0	0
Fatalities rai	il passengers	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
	il employees	0	1	3	10	30	100	300
Distribution-type	Poisson	1,00E+00	0	0	0	0	0	0
Average	0,000	0	0	0	0	0	0	0
1.6.4 - traffic acc								
	ident involving da						-	
Fataliti	es road	0	1	3	10	30	100	300
Fataliti Distribution-type	es road Poisson	0 97,17%	1 2,79%	3 0,04%	10 0,00%	30 0	100 0	300 0
Fataliti	es road	0	1	3	10	30	100	300
Fataliti Distribution-type Average	es road Poisson 0,0287	0 97,17% 0	1 2,79% 2,79E-02	3 0,04% 1,21E-03	10 0,00% 2,76E-07	30 0 0	100 0 0	300 0 0
Fataliti Distribution-type Average Disrupt	es road Poisson 0,0287	0 97,17% 0	1 2,79% 2,79E-02 1	3 0,04% 1,21E-03 7	10 0,00% 2,76E-07 14	30 0 0 30	100 0 0 180	300 0 0 365
Fataliti Distribution-type Average	es road Poisson 0,0287	0 97,17% 0	1 2,79% 2,79E-02	3 0,04% 1,21E-03	10 0,00% 2,76E-07	30 0 0	100 0 0	300 0 0
Fataliti Distribution-type Average Distribution-type Distribution-type Average	es road Poisson 0,0287 on road Poisson 0,0625	0 97,17% 0 97 97,17% 0 93,94% 0	1 2,79% 2,79E-02 1 5,87% 5,87E-02	3 0,04% 1,21E-03 7 0,19% 1,31E-02	10 0,00% 2,76E-07 14 0 0	30 0 0 30 0 0	100 0 0 180 0 0	300 0 0 365 0 0
Fataliti Distribution-type Average Disrupti Distribution-type Average Repai	es road Poisson 0,0287 ion road Poisson 0,0625 r costs	0 97,17% 0 93,94% 0 1,00E+03	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05	10 0,00% 2,76E-07 14 0 0	30 0 0 30 0 0 1,00E+07	100 0 0 180 0 0 0 1,00E+08	300 0 365 0 0 1,00E+09
Fataliti Distribution-type Average Distribution-type Average Average Repai Distribution-type	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson	0 97,17% 0 93,94% 0 1,00E+03 0	1 2,79% 2,79E-02 1 5,87% 5,87F-02 1,00E+04 100,00%	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0	10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0	30 0 0 30 0 0 0 1,00E+07 0	100 0 0 180 0 0 1,00E+08 0	300 0 365 0 0 0 1,00E+09 0
Fataliti Distribution-type Average Disrupti Distribution-type Average Repai	es road Poisson 0,0287 ion road Poisson 0,0625 r costs	0 97,17% 0 93,94% 0 1,00E+03	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05	10 0,00% 2,76E-07 14 0 0	30 0 0 30 0 0 1,00E+07	100 0 0 180 0 0 0 1,00E+08	300 0 365 0 0 1,00E+09
Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Average	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson	0 97,17% 0 93,94% 0 1,00E+03 0	1 2,79% 2,79E-02 1 5,87% 5,87F-02 1,00E+04 100,00%	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0	10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0	30 0 0 30 0 0 0 1,00E+07 0	100 0 0 180 0 0 1,00E+08 0	300 0 365 0 0 0 1,00E+09 0
Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03	0 97,17% 0 93,94% 0 1,00E+03 0	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00% 1,00E+04	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0	30 0 0 30 0 0 1,00E+07 0 0	100 0 0 180 0 0 0 1,00E+08 0 0	300 0 365 0 0 0 1,00E+09 0 0
Fataliti Distribution-type Average Disrupti Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Distribution-type	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03 tion rail	● 0 97,17% 0 ● 33,94% 0 ■ 1,00E+03 0 0 ■ 0	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00% 1,00E+04	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0 0	10 0,00% 2,76E-07 14 0 0 0 1,00E+06 0 0 0	30 0 30 0 0 0 1,00E+07 0 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0	300 0 365 0 0 0 1,00E+09 0 0 0
Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03 tion rail Poisson	0 97,17% 0 93,94% 0 1,00E+03 0 1,00E+00	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00% 1,00E+04 1 0	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0 0 7 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 0 1,00E+07 0 0 0 30 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0	300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Fataliti Distribution-type Average Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03 tion rail Poisson 0,000	0 97,17% 0 93,94% 0 1,00E+03 0 1,00E+03 0 0 0	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00% 1,00E+04 1 0 0	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0 0 7 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0	30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0	300 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Fataliti Distribution-type Average Disrupti Distribution-type Average Repai Distribution-type Average Distribution-type Average Distribution-type Average Fatalities rai	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03 tion rail Poisson 0,000	0 97,17% 0 93,94% 0 1,00E+03 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00% 1,00E+04 1 0 0 0	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0 0 0 7 0 0 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 14 0 0 14	30 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 30 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0 0	300 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Average Average Average Average Average Average Average Average	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03 tion rail Poisson 0,000	0 97,17% 0 93,94% 0 1,00E+03 0 1,00E+00 0 1,00E+00 0	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00% 1,00E+04 1 0 0 0	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0 0 0 7 0 0 0 0 3 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0	30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 30 0 0	100 0 0 180 0 0 0 1,00E+08 0 0 0 180 0 0 0 180 0 0	300 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365 0 0 300
Fataliti Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	es road Poisson 0,0287 ion road Poisson 0,0625 r costs Poisson 5,00E+03 tion rail Poisson 0,000 il passengers Poisson 0,000	0 97,17% 0 93,94% 0 1,00E+03 0 1,00E+00 0 1,00E+00 0	1 2,79% 2,79E-02 1 5,87% 5,87E-02 1,00E+04 100,00% 1,00E+04 1 0 0 0	3 0,04% 1,21E-03 7 0,19% 1,31E-02 1,00E+05 0 0 0 0 7 0 0 0 0 3 0 0 0	10 0,00% 2,76E-07 14 0 0 1,00E+06 0 0 0 14 0 0 0 10 0 0	30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 30 0 0 0 0	100 0 180 0 0 1,00E+08 0 0 1,00E+08 0 0 0 180 0 0 0 100 0 0	300 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 300 0 0 0

12.8 Fire Road

Scenario	0	1	3	10	30	100	300	Mean
2.1.2	1,00	0	0	0	0	0	0	0
2.1.3	1,00	0	0	0	0	0	0	0
2.1.4	1,00	0	0	0	0	0	0	0
2.1.5	1,00	0	0	0	0	0	0	0
2.1.6	1,00	0	0	0	0	0	0	0
2.1.7	1,00	0	0	0	0	0	0	0
2.1.8	1,00	0	0	0	0	0	0	0
2.1.9	0,43	0,09	0,27	0,21	0,00	0	0	3,00
2.2.2	1,00	0	0	0	0	0	0	0
2.2.3	1,00	0	0	0	0	0	0	0
2.2.4	1,00	0	0	0	0	0	0	0
2.2.5	1,00	0	0	0	0	0	0	0
2.2.6	1,00	0	0	0	0	0	0	0
2.2.7	1,00	0	0	0	0	0	0	0
2.2.8	1,00	0	0	0	0	0	0	0
2.2.9	0,43	0,09	0,27	0,21	0,00	0	0	3,00
2.3.2	1,00	0	0	0	0	0	0	0
2.3.3	1,00	0	0	0	0	0	0	0
2.3.4	1,00	0	0	0	0	0	0	0
2.3.5	1,00	0	0	0	0	0	0	0
2.3.6	1,00	0	0	0	0	0	0	0
2.3.7	1,00	0	0	0	0	0	0	0
2.3.8	0,40	0,02	0,13	0,43	0,01	0	0	5,00
2.3.9	0,43	0,09	0,27	0,21	0,00	0	0	3,00
2.3.10	1,00	0	0	0	0	0	0	0
2.3.11	1,00	0	0	0	0	0	0	0
2.3.12	1,00	0	0	0	0	0	0	0
2.3.13	1,00	0	0	0	0	0	0	0
2.3.14	1,00	0	0	0	0	0	0	0
2.3.15	1,00	0	0	0	0	0	0	0
2.3.16	1,00	0	0	0	0	0	0	0
2.3.17	0,43	0,09	0,27	0,21	0,00	0	0	3,00
2.4.2	1,00	0	0	0	0	0	0	0
2.4.3	1,00	0	0	0	0	0	0	0
2.4.4	1,00	0	0	0	0	0	0	0
2.4.5	1,00	0	0	0	0	0	0	0
2.4.6	1,00	0	0	0	0	0	0	0
2.4.7	1,00	0	0	0	0	0	0	0
2.4.8	1,00	0	0	0	0	0	0	0
2.4.9	0,43	0,09	0,27	0,21	0,00	0	0	3,00
2.1.1	1,00	0	0	0	0	0	0	0
2.2.1	1,00	0	0	0	0	0	0	0
2.3.1	1,00	0	0	0	0	0	0	0
2.4.1	1,00	0	0	0	0	0	0	0
2.5.1	1,00	0	0	0	0	0	0	0
2.6.1	1,00	0	0	0	0	0	0	0
2.7.1	1,00	0	0	0	0	0	0	0
2.8.1	1,00	0	0	0	0	0	0	0

Repair co	sts		_					
					inside enclos			
Fire size	1,00E+03	,	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09	Mean
1	9,44E-01	5,56E-02	0	0	0	0	0	1.500
2,5	7,26E-02	9,27E-01		0	0	0	0	9.375
8	0	5,05E-02	9,49E-01	6,09E-04	0	0	0	96.000
15	0	1,10E-05	7,36E-01	2,64E-01	1,84E-08	0	0	337.500
20	0	2,66E-07	4,44E-01	5,56E-01	1,10E-06	0	0	600.000
30	0	0	9,30E-04	9,60E-01	3,90E-02	0	0	1.350.000
50	0	0	0	5,16E-04	9,44E-01	5,56E-02	0	15.000.000
200	0	0	0	2,66E-07	4,44E-01	5,56E-01	1,10E-06	60.000.000
350	0	0	0	0	8,53E-03	9,85E-01	6,41E-03	105.000.000
			Damain	e ete l'Eurel	fine on lond	aida a		Meen
Fire size	1 005+02	1 005+04			fire on lands			Mean
Fire size	1,00E+03	1,00E+04		1,00E+06	1,00E+07	1,00E+08	1,00E+09	1.000
1	1,00E+00	0	0	0	0	0	0	1.000
2,5	1,00E+00	0	0	0	0	0	0	1.000
15	1,10E-05	7,36E-01	2,64E-01	1,84E-08	0	0	0	33.750
30	0	9,30E-04	9,60E-01	3,90E-02	0	0	0	135.000
200	0	0	2,66E-07	4,44E-01	5,56E-01	1,10E-06	0	6.000.000
350	0	0	0	8,53E-03	9,85E-01	6,41E-03	0	10.500.000
Disruption								
Jisiuption								
	_					el - Incident tu		
Fire size	0	1	7	14	30	180	365	Mean
1	8,73E-01	1,14E-01	1,22E-02	0	0	0	0	0,20
2,5	8,11E-01	1,53E-01	3,52E-02	6,52E-09	0	0	0	0,40
8	7,71E-01	1,67E-01	6,18E-02	1,24E-07	0	0	0	0,60
15	7,15E-01	1,66E-01	1,19E-01	4,62E-06	0	0	0	1,00
20	4,22E-01	4,32E-02	5,05E-01	3,01E-02	1,17E-05	0	0	4,00
30	2,90E-01	4,53E-03	4,20E-01	2,81E-01	4,06E-03	0	0	7,00
50	6,93E-01	0	1,61E-07	2,82E-04	1,68E-01	1,39E-01	0	30,00
200	5,00E-01	0	0	0	0	5,00E-01	0	90,00
350	5,00E-01	0	0	0	0			
				U	U	5,00E-01	0	90,00
		Disruption	-	-		,		90,00
Fire size	0	Disruption	-	-		Non incident		
Fire size 1	0	1	[days] - fire 7	inside encl	osed tunnel -	,	tube	Mean
1	0 9,63E-01	1 3,63E-02	[days] - fire 7 7,67E-04	inside encl 14 0	osed tunnel - 30 0	Non incident 180 0	tube 365 0	Mean 0,04
1 2,5	0 9,63E-01 9,33E-01	1 3,63E-02 6,41E-02	[days] - fire 7 7,67E-04 2,75E-03	inside encl 14 0 0	osed tunnel - 30 0 0	Non incident 180 0 0	tube 365 0 0	Mean 0,04 0,08
1 2,5 8	0 9,63E-01 9,33E-01 9,09E-01	1 3,63E-02 6,41E-02 8,58E-02	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03	inside encl 14 0 0 0	osed tunnel - 30 0 0 0	Non incident 180 0 0 0 0	tube 365 0 0 0	Mean 0,04 0,08 0,13
1 2,5 8 15	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02	inside encl 14 0 0 0 0 0	osed tunnel - 30 0 0 0 0 0	Non incident 180 0 0 0 0 0 0	tube 365 0 0 0 0	Mean 0,04 0,08 0,13 0,25
1 2,5 8 15 20	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01 8,29E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02	inside encl 14 0 0 0 0 0 1,70E-09	osed tunnel - 30 0 0 0 0 0 0 0	Non incident 180 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33
1 2,5 8 15 20 30	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02	inside encl 14 0 0 0 1,70E-09 3,33E-08	osed tunnel - 30 0 0 0 0 0 0 0 0 0	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50
1 2,5 8 15 20 30 50	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01 5,83E-02	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02	osed tunnel - 30 0 0 0 0 0 0 2,35E-06	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50
1 2,5 8 15 20 30 50 200	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01 5,83E-02 4,53E-03	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01	inside encl 14 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01	osed tunnel - 30 0 0 0 0 2,35E-06 4,06E-03	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00
1 2,5 8 15 20 30 50	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01 5,83E-02	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02	osed tunnel - 30 0 0 0 0 0 0 2,35E-06	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50
1 2,5 8 15 20 30 50 200	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01 5,83E-02 4,53E-03	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01 4,20E-01	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01 2,81E-01	osed tunnel - 30 0 0 0 0 2,35E-06 4,06E-03	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00
1 2,5 8 15 20 30 50 200 350	0 9,63E-01 9,33E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01 5,83E-02 4,53E-03	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01 4,20E-01	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01 2,81E-01 2,81E-01 cion [days] -	osed tunnel - 30 0 0 0 0 2,35E-06 4,06E-03 4,06E-03 fire on lands	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00 7,00
1 2,5 8 15 20 30 50 200 350	0 9,63E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01 2,90E-01 0	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01 5,83E-02 4,53E-03 4,53E-03 4,53E-03	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01 4,20E-01 4,20E-01 7	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01 2,81E-01	osed tunnel - 30 0 0 0 0 2,35E-06 4,06E-03 4,06E-03 4,06E-03	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 365	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00 7,00 Mean
1 2,5 8 15 20 30 50 200 350 Fire size 1	0 9,63E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01 2,90E-01 2,90E-01 0 8,73E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,42E-01 5,83E-02 4,53E-03 4,53E-03 4,53E-03 1,14E-01	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01 4,20E-01 4,20E-01 Disrupt 7 1,22E-02	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01 2,81E-01 2,81E-01 cion [days] - 14 0	osed tunnel - 30 0 0 0 0 2,35E-06 4,06E-03 4,06E-03 4,06E-03	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00 7,00 0,00 0,020
1 2,5 8 15 20 30 50 200 350 Fire size 1 2,5	0 9,63E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01 2,90E-01 2,90E-01 8,73E-01 8,11E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,42E-01 5,83E-02 4,53E-03 4,53E-03 4,53E-03 1,14E-01 1,53E-01	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01 4,20E-01 4,20E-01 5 1,22E-02 3,52E-02	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01 2,81E-01 2,81E-01 ion [days] - 14 0 6,52E-09	osed tunnel - 30 0 0 0 0 2,35E-06 4,06E-03 4,06E-03 4,06E-03 fire on landsi 30 0	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00 7,00 0,20 0,20 0,40
2,5 8 15 20 30 50 200 350 Fire size 1 2,5 15	0 9,63E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01 2,90E-01 2,90E-01 8,73E-01 8,11E-01 7,90E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,62E-01 5,83E-02 4,53E-03 4,53E-03 4,53E-03 1,14E-01 1,53E-01 1,62E-01	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01 4,20E-01 4,20E-01 4,20E-01 7 1,22E-02 3,52E-02 4,83E-02	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01 2,81E-01 2,81E-01 ion [days] - 14 0 6,52E-09 3,33E-08	osed tunnel - 30 0 0 0 0 0 0 0 2,35E-06 4,06E-03 4,06E-03 4,06E-03 fire on landsi 30 0 0 0	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00 7,00 0,20 0,40 0,50
1 2,5 8 15 20 30 50 200 350 Fire size 1 2,5	0 9,63E-01 9,09E-01 8,55E-01 8,29E-01 7,90E-01 4,65E-01 2,90E-01 2,90E-01 2,90E-01 8,73E-01 8,11E-01	1 3,63E-02 6,41E-02 8,58E-02 1,28E-01 1,44E-01 1,42E-01 5,83E-02 4,53E-03 4,53E-03 4,53E-03 1,14E-01 1,53E-01	[days] - fire 7 7,67E-04 2,75E-03 5,60E-03 1,74E-02 2,70E-02 4,83E-02 4,62E-01 4,20E-01 4,20E-01 4,20E-01 7 1,22E-02 3,52E-02 4,83E-02 1,93E-01	inside encl 14 0 0 0 1,70E-09 3,33E-08 1,48E-02 2,81E-01 2,81E-01 2,81E-01 ion [days] - 14 0 6,52E-09	osed tunnel - 30 0 0 0 0 2,35E-06 4,06E-03 4,06E-03 4,06E-03 fire on landsi 30 0	Non incident 180 0 0 0 0 0 0 0 0 0 0 0 0 0	tube 365 0 0 0 0 0 0 0 0 0 0 0 0 0	Mean 0,04 0,08 0,13 0,25 0,33 0,50 3,50 7,00 7,00 0,20 0,20 0,40

RAMBØLL ARUP TEC

FEHMARNBELT FIXED LINK – TUNNEL DESIGN SERVICES

12.9 Train Collision

3.0 - No severe coll Fatalities passe Distribution-type Average Fatalities emplo Distribution-type Average	e ngers Poisson	0	1	3	40			
Distribution-type Average Fatalities emplo Distribution-type	Poisson		1	3	40	~~		
Average Fatalities emplo Distribution-type				0	10	30	100	300
Fatalities emplo	-	100,00%	0	0	0	0	0	0
Distribution-type	0	0	0	0	0	0	0	0
Distribution-type								
	oyees	0	1	3	10	30	100	300
Average	Poisson	100,00%	0	0	0	0	0	0
1.1010.80	0	0	0	0	0	0	0	0
Disruption	า	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair cos	sts	1,00E+03	1,00E+04	-	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	100,00%	0	0	0	0
Average	5,00E+04	0	0	1,00E+05	0	0	0	0
Disruption ro	bad	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Fatalities ro	ad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.1 - Front- Front - [·] dangerous goods	Train coll	ision with	one passe	nger train	and one fr	eight trair	n not carry	ing
Fatalities passe	engers	0	1	3	10	30	100	300
Distribution-type		0,00%	0,04%	0,81%	54,20%	44,95%	0,00%	0
Average	10,26	0	3,59E-04	2,44E-02	5,42E+00	1,35E+01	1,38E-05	0
							. ·	
Fatalities emplo	oyees	0	1	3	10	30	100	300
Distribution-type	Poisson	29,00%	35,90%	31,39%	3,72%	0,00%	0	0
Average	1,238	0	3,59E-01	9,42E-01	3,72E-01	2,54E-06	0	0
0								
Disruption	า	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	ts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average		0	0	0	0	1,00E+07	0	0
							I	
Disruption ro	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
	-		L .	L .			1	L
	ad	0	1	3	10	30	100	300
Fatalities ro		100,00%	0	0				
Fatalities ro Distribution-type	Poisson	100.00%	0	0	0	0	0	0
Distribution-type Average Disruption Distribution-type Average	Poisson 1,238 Poisson 2,00E+00	29,00% 0 13,53% 0	35,90% 3,59E-01 1 27,07% 2,71E-01	31,39% 9,42E-01 7 59,29% 4,15E+00	3,72% 3,72E-01 14 0,11% 1,54E-02	0,00% 2,54E-06 30 0,00% 1,16E-07	0 0 180 0 0	1

3.3 - Front- Front -	Train coll	ision with	two freigh	t trains no	t carrying	dangerous	goods	
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	36,79%	36,79%	24,53%	1,90%	0,00%	0	0
Average	1	0	3,68E-01	7,36E-01	1,90E-01	3,01E-07	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
0	-	-		0	•		0	•
5	-	_	Ū.	•	0	, , , , , , , , , , , , , , , , , , ,	Ŭ	, , , , , , , , , , , , , , , , , , ,
3.5 - Front- Front -	_							
	Train coll					30	100	300
3.5 - Front- Front -	Train coll	ision with	two passe	nger trains	8			
3.5 - Front- Front - Fatalities pass	Train coll engers	ision with 0	two passe 1	nger trains 3	s 10	30	100	300
3.5 - Front- Front - Fatalities pass Distribution-type	Train coll engers Poisson	ision with 0,00%	two passe 1 0,04%	nger trains <u>3</u> 0,81%	10 54,20%	30 44,95%	100 0,00%	300 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp	Train coll engers Poisson 10,26 loyees	ision with 0 0,00% 0 0	two passe 1 0,04% 3,59E-04 1	nger trains 3 0,81% 2,44E-02 3	10 54,20% 5,42E+00 10	30 44,95% 1,35E+01 30	100 0,00%	300 0
3.5 - Front- Front - Fatalities pass Distribution-type Average	Train coll engers Poisson 10,26 loyees	ision with 0,00% 0	two passe 1 0,04% 3,59E-04	nger trains 3 0,81% 2,44E-02	10 54,20% 5,42E+00	30 44,95% 1,35E+01	100 0,00% 1,38E-05	300 0 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp	Train coll engers Poisson 10,26 loyees	ision with 0 0,00% 0 0	two passe 1 0,04% 3,59E-04 1	nger trains 3 0,81% 2,44E-02 3	10 54,20% 5,42E+00 10	30 44,95% 1,35E+01 30	100 0,00% 1,38E-05 100	300 0 0 300
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Train coll engers Poisson 10,26 loyees Poisson	ision with 0,00% 0 27,47%	two passe 1 0,04% 3,59E-04 1 35,49%	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01	10 54,20% 5,42E+00 10 4,23%	30 44,95% 1,35E+01 30 0,00%	100 0,00% 1,38E-05 100 0	300 0 0 300 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Train coll engers Poisson 10,26 loyees Poisson 1,292	ision with 0,00% 0 27,47%	two passe 1 0,04% 3,59E-04 1 35,49%	nger trains 3 0,81% 2,44E-02 3 32,80%	10 54,20% 5,42E+00 10 4,23%	30 44,95% 1,35E+01 30 0,00%	100 0,00% 1,38E-05 100 0	300 0 0 300 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson	ision with 0 0,00% 0 27,47% 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01	10 54,20% 5,42E+00 10 4,23% 4,23E-01	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00%	100 0,00% 1,38E-05 100 0 0	300 0 0 300 0 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Train coll engers Poisson 10,26 loyees Poisson 1,292 n	ision with 0,00% 0 27,47% 0 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 1	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7	10 54,20% 5,42E+00 10 4,23% 4,23E-01 14	30 44,95% 1,35E+01 30 0,00% 3,87E-06	100 0,00% 1,38E-05 100 0 0	300 0 0 300 0 0 365
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00	ision with 0,00% 0 27,47% 0 4,98% 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 1 14,94% 1,49E-01	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00	10 54,20% 5,42E+00 4,23% 4,23E-01 4,23E-01 1,19% 1,67E-01	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05	100 0,00% 1,38E-05 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00	ision with 0,00% 0 0 27,47% 0 0 4,98%	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 1 14,94%	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89%	10 54,20% 5,42E+00 4,23% 4,23E-01 4,23E-01 1,19% 1,67E-01	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05 1,00E+07	100 0,00% 1,38E-05 100 0 0 180 0	300 0 0 300 0 0 0 365 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00	ision with 0 0,00% 0 27,47% 0 27,47% 0 1,00E+03 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 1 14,94% 1,49E-01	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0	10 54,20% 5,42E+00 4,23% 4,23E-01 4,23E-01 1,19% 1,67E-01	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05	100 0,00% 1,38E-05 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00	ision with 0 0,00% 0 27,47% 0 4,98% 0 1,00E+03	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 14,94% 1,49E-01 1,00E+04	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05	10 54,20% 5,42E+00 4,23% 4,23E-01 4,23E-01 1,19% 1,67E-01	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05 1,00E+07	100 0,00% 1,38E-05 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Constribution-type Distribution-type Constribution-type	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00 sts Poisson	ision with 0 0,00% 0 27,47% 0 4,98% 0 1,00E+03 0 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 1 14,94% 1,49E-01 1,00E+04 0	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0 0 0	10 54,20% 5,42E+00 4,23% 4,23E-01 4,23E-01 1,19% 1,67E-01 1,00E+06 50,03% 5,00E+05	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 2,01E-05 1,00E+07 49,97%	100 0,00% 1,38E-05 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Constribution-type Distribution-type Constribution-type	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00 sts Poisson 1,00E+06	ision with 0 0,00% 0 27,47% 0 27,47% 0 1,00E+03 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 1 14,94% 1,49E-01 1,00E+04 0	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0	10 54,20% 5,42E+00 4,23% 4,23& 10 4,23& 1,10% 1,19% 1,67E-01 5,00E+05 5,00E+05 14	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 2,01E-05 1,00E+07 49,97%	100 0,00% 1,38E-05 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00 sts Poisson 1,00E+06	ision with 0 0,00% 0 27,47% 0 4,98% 0 1,00E+03 0 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 14,94% 1,49E-01 1,00E+04 0 0	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0 0 0	10 54,20% 5,42E+00 4,23% 4,23E-01 4,23E-01 1,19% 1,67E-01 1,00E+06 50,03% 5,00E+05	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05 1,00E+07 49,97% 5,00E+06	100 0,00% 1,38E-05 100 0 0 180 0 0 1,00E+08 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00 sts Poisson 1,00E+06 oad Poisson	ision with 0,00% 0 27,47% 0 27,47% 0 1,00E+03 0 0 0 0 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 1 14,94% 1,49E-01 1,00E+04 0 0 0 1	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0 0 0 7	10 54,20% 5,42E+00 4,23% 4,23& 10 4,23& 1,10% 1,19% 1,67E-01 5,00E+05 5,00E+05 14	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 2,01E-05 49,97% 5,00E+06	100 0,00% 1,38E-05 100 0 0 180 0 180 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00 sts Poisson 1,00E+06 oad Poisson	ision with 0,00% 0 0 27,47% 0 27,47% 0 0 1,00E+03 0 0 1,00E+03 0 0 1,00E+03	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 14,94% 1,49E-01 1,00E+04 0 0 0 1 23,88%	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	10 54,20% 5,42E+00 4,23% 4,23% 4,23& 10 4,23% 1,07E-01 1,67E-01 5,00E+05 5,00E+05 14 0,00%	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05 1,00E+07 49,97% 5,00E+06	100 0,00% 1,38E-05 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00 sts Poisson 1,00E+06 oad Poisson 3,33E-01	ision with 0,00% 0 0 27,47% 0 27,47% 0 0 1,00E+03 0 0 1,00E+03 0 0 1,00E+03	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 14,94% 1,49E-01 1,00E+04 0 0 0 1 23,88%	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	10 54,20% 5,42E+00 4,23% 4,23% 4,23& 10 4,23% 1,07E-01 1,67E-01 5,00E+05 5,00E+05 14 0,00%	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05 1,00E+07 49,97% 5,00E+06	100 0,00% 1,38E-05 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
3.5 - Front- Front - Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Train coll engers Poisson 10,26 loyees Poisson 1,292 n Poisson 3,00E+00 sts Poisson 1,00E+06 oad Poisson 3,33E-01	ision with 0,00% 0 27,47% 0 27,47% 0 4,98% 0 1,00E+03 0 1,00E+03 0 1,00E+03 0 0 1,65% 0	two passe 1 0,04% 3,59E-04 1 35,49% 3,55E-01 14,94% 1,49E-01 1,49E-01 1,00E+04 0 0 0 1 23,88% 2,39E-01	nger trains 3 0,81% 2,44E-02 3 32,80% 9,84E-01 7 78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46% 3,12E-01	10 54,20% 5,42E+00 4,23% 4,23% 4,23E-01 1,10% 1,19% 1,67E-01 50,03% 5,00E+05 50,03% 5,00E+05 14 0,00% 3,94E-08	30 44,95% 1,35E+01 30 0,00% 3,87E-06 30 0,00% 2,01E-05 49,97% 5,00E+06 30 00 0	100 0,00% 1,38E-05 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0

dangerous goods			ne passen				-	-
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		0,59%	3,04%	21,10%	73,65%	1,62%	0	0
Average	5,13	0	3,04E-02	6,33E-01	7,37E+00	4,86E-01	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	53,85%	33,33%	12,44%	0,37%	0	0	0
Average	0,619	0	3,33E-01	3,73E-01	3,75E-02	2,18E-09	0	0
¥		l			l		I	•
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.7 - Front- End- T	rain collisi	on with tw	o freight t	rains not c	arrying da	ngerous g	oods	
3.7 - Front- End- T Fatalities pass		on with tw 0	o freight t 1	rains not c 3	arrying da 10	ngerous g 30	oods 100	300
	engers							300 0
Fatalities pass	engers	0	1	3	10	30	100	
Fatalities pass	e ngers Poisson	0 100,00%	1 0	3 0	10 0	30 0	100 0	0
Fatalities pass	engers Poisson O	0 100,00%	1 0	3 0	10 0	30 0	100 0	0
Fatalities pass Distribution-type Average	engers Poisson O	0 100,00% 0	1 0 0	3 0 0	10 0 0	30 0 0	100 0 0	0
Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 loyees	0 100,00% 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	0 0 300
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	Poisson 0 loyees Poisson 0,592	0 100,00% 0 0 55,32%	1 0 0 1 32,75%	3 0 0 3 11,61%	10 0 0 10 0,32%	30 0 0 30 0	100 0 0 100 0	0 0 300 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 loyees Poisson 0,592	0 100,00% 0 0 55,32%	1 0 0 1 32,75%	3 0 0 3 11,61%	10 0 0 10 0,32%	30 0 0 30 0	100 0 0 100 0	0 0 300 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 loyees Poisson 0,592 n Poisson	0 100,00% 0 55,32% 0	1 0 0 1 32,75% 3,28E-01	3 0 0 3 11,61% 3,48E-01	10 0 0 10 0,32% 3,20E-02 14 0,00%	30 0 0 30 0 1,37E-09	100 0 0 100 0 0	0 0 300 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 loyees Poisson 0,592	0 100,00% 0 55,32% 0	1 0 0 1 32,75% 3,28E-01	3 0 0 3 11,61% 3,48E-01	10 0 0 10 0,32% 3,20E-02	30 0 0 30 1,37E-09 30	100 0 0 100 0 0 180	0 0 300 0 0 365
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 loyees Poisson 0,592 n Poisson	0 100,00% 0 55,32% 0 0 36,79%	1 0 0 1 32,75% 3,28E-01 1 36,79%	3 0 0 3 11,61% 3,48E-01 7 26,42%	10 0 0 10 0,32% 3,20E-02 14 0,00%	30 0 0 30 0 1,37E-09 30 0	100 0 0 100 0 0 180 0	0 0 300 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00	0 100,00% 0 55,32% 0 0 36,79%	1 0 0 1 32,75% 3,28E-01 1 36,79%	3 0 0 3 11,61% 3,48E-01 7 26,42%	10 0 0 10 0,32% 3,20E-02 14 0,00%	30 0 0 30 0 1,37E-09 30 0	100 0 0 100 0 0 180 0	0 0 300 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00	0 100,00% 0 55,32% 0 36,79% 0	1 0 0 1 32,75% 3,28E-01 36,79% 3,68E-01	3 0 0 3 11,61% 3,48E-01 3,48E-01 26,42% 1,85E+00	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04	30 0 0 30 0 1,37E-09 30 0 0 0	100 0 0 100 0 0 180 0 0	0 0 300 0 0 365 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00	0 100,00% 0 55,32% 0 36,79% 0 1,00E+03	1 0 0 1 32,75% 3,28E-01 3,28E-01 1 36,79% 3,68E-01	3 0 0 3 11,61% 3,48E-01 7 26,42% 1,85E+00	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06	30 0 0 30 0 1,37E-09 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08	0 0 300 0 0 365 0 0 0 1,00E+09
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	engers Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00 sts Poisson	0 100,00% 0 55,32% 0 36,79% 0 1,00E+03	1 0 0 1 32,75% 3,28E-01 36,79% 3,68E-01 1,00E+04 0	3 0 0 11,61% 3,48E-01 7 26,42% 1,85E+00 1,85E+00	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06 100,00%	30 0 0 30 0 1,37E-09 30 0 0 0 1,00E+07 0	100 0 0 100 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	engers Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 100,00% 0 55,32% 0 36,79% 0 1,00E+03	1 0 0 1 32,75% 3,28E-01 36,79% 3,68E-01 1,00E+04 0	3 0 0 11,61% 3,48E-01 7 26,42% 1,85E+00 1,85E+00	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06 100,00%	30 0 0 30 0 1,37E-09 30 0 0 0 1,00E+07 0	100 0 0 100 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average	engers Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 100,00% 0 55,32% 0 36,79% 0 36,79% 0 1,00E+03 0 0	1 0 0 32,75% 3,28E-01 36,79% 3,68E-01 1,00E+04 0 0	3 0 0 3 11,61% 3,48E-01 7 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06 1,00E+06	30 0 0 30 0 1,37E-09 30 0 0 0 1,00E+07 0 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 100,00% 0 55,32% 0 36,79% 0 36,79% 0 1,00E+03 0 0	1 0 0 32,75% 3,28E-01 36,79% 3,68E-01 1,00E+04 0 0 0	3 0 0 3 11,61% 3,48E-01 7 26,42% 1,85E+00 1,85E+00 0 0 0	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06 1,00E+06	30 0 0 30 0 1,37E-09 30 0 0 0 1,00E+07 0 0 0 0	100 0 100 100 0 180 0 1,00E+08 0 0 180	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 100,00% 0 55,32% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 0 84,65%	1 0 0 32,75% 3,28E-01 3,28E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 1,00E+04	3 0 0 3 11,61% 3,48E-01 7 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0 0 7 1,24%	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	30 0 0 30 0 1,37E-09 30 0 0 1,00E+07 0 0 0 30 30	100 0 100 100 100 0 180 0 1,00E+08 0 1,80 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	engers Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00 5,00E+05 oad Poisson 1,67E-01	0 100,00% 0 55,32% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 0 84,65%	1 0 0 32,75% 3,28E-01 3,28E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 1,00E+04	3 0 0 3 11,61% 3,48E-01 7 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0 0 7 1,24%	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	30 0 0 30 0 1,37E-09 30 0 0 1,00E+07 0 0 0 30 30	100 0 100 100 100 0 180 0 1,00E+08 0 1,80 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	engers Poisson 0 loyees Poisson 0,592 n Poisson 1,00E+00 5,00E+05 oad Poisson 1,67E-01	0 100,00% 0 55,32% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 84,65%	1 0 0 32,75% 3,28E-01 36,79% 3,68E-01 1,00E+04 0 0 0 0 1,14,11% 1,41E-01	3 0 0 3 11,61% 3,48E-01 7 26,42% 1,85E+00 1,85E+00 0 0 0 0 7 1,24% 8,71E-02	10 0 0 10 0,32% 3,20E-02 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06 100,00%	30 0 0 30 0 1,37E-09 30 0 0 0 1,00E+07 0 0 0 30 0 0 0 0 0	100 0 100 100 0 100 0 180 0 1,00E+08 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0

3.9 - Front- End - T	rain collis	ion with ty	vo passen	ger trains				
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	0,59%	3,04%	21,10%	73,65%	1,62%	0	0
Average	5,13	0	3,04E-02	6,33E-01	7,37E+00	4,86E-01	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	52,41%	33,86%	13,29%	0,44%	0	0	0
Average	0,646	0	3,39E-01	3,99E-01	4,35E-02	3,40E-09	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	50,08%	49,92%	0	0	0
Average	1,00E+05	0	0	5,01E+04	4,99E+05	0	0	0
			-				-	
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

3.1.1 - front- front dangerous g invo	lving amm	nonia resu	-	release		-		
Fatalities pass	-	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	•	Ŭ	Ŭ	Ŭ	Ū	Ŭ	Ŭ	Ŭ
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
	,		· ·					
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
	•	0	0	0	0	0	0	0
3.1.2 - front- front dangerous g invo	t - train col Iving amm	llision with nonia resu	n one pass ulting in sn	enger train nall releas	n and one e	freight tra	in carrying	
3.1.2 - front- front dangerous g invo Fatalities pass	t - train col Iving amm engers	llision with nonia resu 0	n one pass ulting in sn 1	enger train nall releas 3	n and one e 10	freight trai	in carrying 100	300
3.1.2 - front-front dangerous g invo Fatalities pass Distribution-type	t - train col Iving amm engers Poisson	Ilision with nonia resu 0 100,00%	n one pass ulting in sn 1 0	enger train nall releas 3 0	n and one e 10 0	freight trai	in carrying 100 0	300 0
3.1.2 - front- front dangerous g invo Fatalities pass	t - train col Iving amm engers	llision with nonia resu 0	n one pass ulting in sn 1	enger train nall releas 3	n and one e 10	freight trai	in carrying 100	300
3.1.2 - front-front dangerous g invo Fatalities pass Distribution-type Average	t - train col lving amm engers Poisson 0	Ilision with nonia resu 0 100,00%	n one pass ulting in sn 1 0	enger train nall releas 3 0	n and one e 10 0	freight trai	in carrying 100 0	300 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp	t - train col lving amm engers Poisson 0 loyees	Ilision with nonia resu 0 100,00% 0	n one pass ulting in sn 1 0 0	enger train nall releas 3 0 0	n and one e 10 0 0	freight trai	in carrying 100 0 0	300 0 0
3.1.2 - front-front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type	t - train col lving amm engers Poisson 0	Ilision with nonia resu 0 100,00% 0 0	n one pass ulting in sn 1 0 0	enger train nall releas 0 0 0	n and one e 10 0 0	freight trai	in carrying 100 0 100 100	300 0 0 300
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp	t - train col lving amm engers Poisson 0 loyees Poisson	Ilision with nonia resu 0 100,00% 0 100,00%	n one pass ulting in sn 1 0 0 1 0	enger train nall releas 0 0 0 3 0	10 0 0 10 0	freight trai	in carrying 100 0 0 100 0	300 0 0 300 0
3.1.2 - front-front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type	t - train col lving amm engers Poisson 0 loyees Poisson 0	Ilision with nonia resu 0 100,00% 0 100,00%	n one pass ulting in sn 1 0 0 1 0	enger train nall releas 0 0 0 3 0	10 0 0 10 0	freight trai	in carrying 100 0 0 100 0	300 0 0 300 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0	Ilision with nonia resu 0 100,00% 0 100,00% 0	1 0 0 1 0 0	enger train nall releas 0 0 0 3 0 0	10 0 0 10 0 10 0	freight trai	in carrying 100 0 0 100 0 0	300 0 0 300 0 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distruption	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson	Ilision with nonia resu 0 100,00% 0 100,00% 0	n one pass ulting in sn 1 0 0 1 0 0	enger train all releas 0 0 0 3 0 0 7	10 0 0 10 0 10 0 0	freight trai	in carrying 100 0 0 100 0 180	300 0 0 300 0 0 365
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 13,53%	1 0 0 0 1 0 0 1 0 0 1 27,07%	enger train nall releas 0 0 0 3 0 0 0 7 59,29%	10 0 0 0 10 0 0 10 0 0 14 0,11%	freight tra 30 0 0 30 0 0 30 0 0 30 0,00%	in carrying 100 0 0 100 0 180 0	300 0 0 300 0 0 0 365 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 13,53%	1 0 0 0 1 0 0 1 0 0 1 27,07%	enger train nall releas 0 0 0 3 0 0 0 7 59,29%	10 0 0 0 10 0 0 10 0 0 14 0,11%	freight tra 30 0 0 30 0 0 30 0 0 30 0,00%	in carrying 100 0 0 100 0 180 0	300 0 0 300 0 0 0 365 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0	n one pass ulting in sn 1 0 0 1 0 1 27,07% 2,71E-01	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00	10 0 0 0 10 0 0 0 14 0,11% 1,54E-02	freight trai	in carrying 100 0 0 100 0 180 0 0 0	300 0 0 300 0 0 365 0 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	Ilision with nonia resu 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0	n one pass ulting in sn 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05	10 0 0 0 10 0 10 0 0 14 0,11% 1,54E-02 1,00E+06	freight tra 30 0 0 30 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07	in carrying 100 0 0 100 0 180 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06	Ilision with nonia resu 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 1,00E+03 0 0	n one pass alting in sn 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0	10 0 0 0 10 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0	freight tra 30 0 0 0 30 0 0 0 30 0 0 0 1,16E-07 1,00E+07 100,00% 1,00E+07	in carrying 100 0 0 100 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0	n one pass alting in sn 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 1	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 0 10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0	freight trai 30 0 0 30 0 0 30 0,00% 1,16E-07 1,00E+07 100,00% 1,00E+07 30	in carrying 100 0 0 100 0 180 0 0 1,00E+08 0 0 180	300 0 0 300 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 1,00E+03 0 0 0 1,00E+03	n one pass ilting in sn 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 1 23,88%	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 4,46%	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 14 0,00%	freight tra 30 0 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 100,00% 1,00E+07 30 0	in carrying 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	300 0 0 300 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0	n one pass alting in sn 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 1	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 0 10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0	freight trai 30 0 0 30 0 0 30 0,00% 1,16E-07 1,00E+07 100,00% 1,00E+07 30	in carrying 100 0 0 100 0 180 0 0 1,00E+08 0 0 180	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06 oad Poisson 3,33E-01	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 10,00% 0 10,00% 0 10,00% 0 10,00% 0 10,00% 0 10,00% 0 0 10,00% 0 0 10,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	n one pass ilting in sn 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 1 23,88% 2,39E-01	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 4,46% 3,12E-01	10 0 0 0 10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 0 14 0,00% 3,94E-08	freight trai	in carrying 100 0 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06 oad Poisson 3,33E-01	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 71,65% 0	n one pass ilting in sn 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 1 23,88% 2,39E-01 1	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 4,46% 3,12E-01 3	10 0 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 14 0,00% 3,94E-08	freight tra 30 0 0 0 30 0 0 0 30 0 0 1,16E-07 1,00E+07 1,00E+07 1,00E+07 30 0 0 0 30 0 30 1,00E+07 30 0 30 0 30 30 30 30 30 30	in carrying 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 100 10	300 0 0 300 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 0 365 0 0 0 0 365 0 0 0 0 365
3.1.2 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	t - train col lving amm engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06 oad Poisson 3,33E-01	Ilision with nonia resu 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0 71,65% 0	n one pass ilting in sn 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 1 23,88% 2,39E-01	enger train nall releas 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 4,46% 3,12E-01	10 0 0 0 10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 0 14 0,00% 3,94E-08	freight trai	in carrying 100 0 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

Average		ionia resu	-	enger trair edium rele		freight trai	in carrying	J
Average	igers	0	1	3	10	30	100	300
	Poisson	0	0,00%	0,00%	0,13%	91,17%	8,71%	0
	23,75	0	1,15E-09	3,66E-07	1,26E-02	2,74E+01	8,71E+00	0
Fatalities employ	vees	0	1	3	10	30	100	300
	Poisson	47,24%	35,43%	16,61%	0,73%	0	0	0
Average	0,75	0	3,54E-01	4,98E-01	7,29E-02	1,60E-08	0	0
Average	0,10	0	0,012.01	1,002 01	1,202 02	1,002 00	Ŭ	Ŭ
Disruption		0	1	3	10	30	100	300
-	Poisson	4,98%	14,94%	44,81%	35,25%	0,03%	0	0
Average 3		0	1,49E-01	1,34E+00	3,52E+00	8,77E-03	0	0
	<u> </u>			·	· ·			
Repair costs	3	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type F	Poisson	0	0	0	0	100,00%	0	0
Average 5	,00E+06	0	0	0	0	1,00E+07	0	0
						-	-	-
Disruption roa	ad	0	1	3	10	30	100	300
Distribution-type F	Poisson	71,65%	23,88%	4,42%	0,04%	0	0	0
Average 3	3,33E-01	0	2,39E-01	1,33E-01	3,95E-03	0	0	0
								-
Fatalities roa	d	0	1	3	10	30	100	300
Distribution-type F	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.1.4 - front- front - dangerous g involv Fatalities passen	ring amm					freight trai	in carrying	300
Distribution-type F	-	0	0	0	0,00%	19,72%	80,28%	0
	35,625	0	0	0	4,20E-06	5,91E+00		0
Average	00,020		Ū		1,202 00	0,012,00	0,002 01	Ŭ
Fatalities employ	yees	0	1	3	10	30	100	300
Distribution-type F	Poisson	32,47%	36,52%	28,25%	2,76%	0,00%	0	0
	1,125	0	3,65E-01	8,47E-01	2,76E-01	9,83E-07	0	
Average					2,700 01	9,032-07	0	0
Average					2,702 01	9,032-07	0	0
Disruption		0	1	7	14	30 30	180	0 365
Disruption	Poisson	0 4,98%	1 14,94%	7 78,89%				
Disruption Distribution-type F	Poisson ,00E+00				14	30	180	365
Disruption Distribution-type Average 3	,00E+00	4,98% 0	14,94% 1,49E-01	78,89% 5,52E+00	14 1,19% 1,67E-01	30 0,00% 2,01E-05	180 0 0	365 0 0
Disruption Distribution-type Average Repair costs	,00E+00	4,98% 0 1,00E+03	14,94% 1,49E-01 1,00E+04	78,89% 5,52E+00 1,00E+05	14 1,19% 1,67E-01 1,00E+06	30 0,00% 2,01E-05 1,00E+07	180 0 0 1,00E+08	365 0 0 1,00E+09
Disruption Distribution-type Average Repair costs Distribution-type F	s,00E+00	4,98% 0 1,00E+03 0	14,94% 1,49E-01 1,00E+04 0	78,89% 5,52E+00 1,00E+05 0	14 1,19% 1,67E-01 1,00E+06 0	30 0,00% 2,01E-05 1,00E+07 100,00%	180 0 0 1,00E+08 0	365 0 0 1,00E+09 0
Disruption Distribution-type Average Repair costs	s,00E+00	4,98% 0 1,00E+03	14,94% 1,49E-01 1,00E+04	78,89% 5,52E+00 1,00E+05	14 1,19% 1,67E-01 1,00E+06	30 0,00% 2,01E-05 1,00E+07	180 0 0 1,00E+08	365 0 0 1,00E+09
Distribution-type F Average 3 Repair costs Distribution-type F Average 5	,00E+00 s Poisson ,00E+06	4,98% 0 1,00E+03 0 0	14,94% 1,49E-01 1,00E+04 0 0	78,89% 5,52E+00 1,00E+05 0 0	14 1,19% 1,67E-01 1,00E+06 0 0	30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07	180 0 0 1,00E+08 0 0	365 0 0 1,00E+09 0 0
Disruption Distribution-type F Average 3 Repair costs Distribution-type F Average 5 Disruption roa	,00E+00 S Poisson G,00E+06	4,98% 0 1,00E+03 0 0	14,94% 1,49E-01 1,00E+04 0 0	78,89% 5,52E+00 1,00E+05 0 0 7	14 1,19% 1,67E-01 1,00E+06 0 0	30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30	180 0 0 1,00E+08 0 0	365 0 0 1,00E+09 0 0 365
Disruption Distribution-type F Average 3 Repair costs Distribution-type F Average 5 Distribution-type F Distribution-type F Distribution-type F	,00E+00 s Poisson d,00E+06 ad Poisson	4,98% 0 1,00E+03 0 0 0 71,65%	14,94% 1,49E-01 1,00E+04 0 0 0 0 2 3,88%	78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	14 1,19% 1,67E-01 1,00E+06 0 0 0 14 0,00%	30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0	180 0 0 1,00E+08 0 0 180 0	365 0 0 1,00E+09 0 0 0 365 0
Disruption Distribution-type F Average 3 Repair costs Distribution-type F Average 5 Distribution-type F Distribution-type F Distribution-type F Distribution-type F	,00E+00 S Poisson G,00E+06	4,98% 0 1,00E+03 0 0	14,94% 1,49E-01 1,00E+04 0 0	78,89% 5,52E+00 1,00E+05 0 0 7	14 1,19% 1,67E-01 1,00E+06 0 0	30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30	180 0 0 1,00E+08 0 0	365 0 0 1,00E+09 0 0 365
Disruption Distribution-type F Average 3 Repair costs Distribution-type F Average 5 Distribution roa Distribution roa Distribution-type F Average 3	,00E+00 S Poisson G,00E+06 Ad Poisson B,33E-01	4,98% 0 1,00E+03 0 0 0 71,65% 0	14,94% 1,49E-01 1,00E+04 0 0 0 2 3,88% 2,39E-01	78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46% 3,12E-01	14 1,19% 1,67E-01 1,00E+06 0 0 0 14 0,00% 3,94E-08	30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0 0	180 0 0 1,00E+08 0 0 0 180 0 0	365 0 0 1,00E+09 0 0 0 365 0 0
Disruption Distribution-type F Average 3 Repair costs Distribution-type F Average 5 Distribution-type F Average 3 Fatalities roa	,00E+00 S Poisson G,00E+06 Ad Poisson B,33E-01	4,98% 0 1,00E+03 0 0 0 71,65%	14,94% 1,49E-01 1,00E+04 0 0 0 0 2 3,88%	78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	14 1,19% 1,67E-01 1,00E+06 0 0 0 14 0,00%	30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0	180 0 0 1,00E+08 0 0 180 0	365 0 0 1,00E+09 0 0 0 365 0

3.1.5 - front- front			-	-	n and one	freight trai	in carrying	I
dangerous g invo Fatalities pass		o o	1	3	10	30	100	300
Distribution-type		100,00%	0	3 0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	U	0	0	0	0	0	0	0
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	•	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ
Disruptio	n	0	1	3	10	30	100	300
Distribution-type		13,53%	27,07%	45,11%	14,29%	0,00%	0	0
	2,00E+00	0	2,71E-01	1,35E+00	1,43E+00	2,49E-04	0	0
	,	-	, -	,	,	,	_	
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
	5,00E+06	0	0	0	0	1,00E+07	0	0
								<u>.</u>
Disruption r	oad	0	1	3	10	30	100	300
Distribution-type	Poisson	71,65%	23,88%	4,42%	0,04%	0	0	0
Average	3,33E-01	0	2,39E-01	1,33E-01	3,95E-03	0	0	0
-								
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
	-	-	•	0	0	Ŭ	0	Ŭ,
	-	-			0	•	0	Ŭ
3.1.6 - front- front	t - train co	llision with			_			
3.1.6 - front- front dangerous g invo	lving chlo		n one pass	enger train all release	n and one	freight trai	in carrying]
3.1.6 - front- front dangerous g invo Fatalities pass	lving chlo engers	rine resul 0	n one pass ting in sma 1	enger train all release 3	n and one	freight trai	in carrying 100	300
3.1.6 - front-front dangerous g invo Fatalities pass Distribution-type	lving chlo engers Poisson	rine resul 0 100,00%	n one pass ting in sma 1 0	enger train all release 3 0	10 0	freight trai	in carrying 100 0	300 0
3.1.6 - front- front dangerous g invo Fatalities pass	lving chlo engers	rine resul 0	n one pass ting in sma 1	enger train all release 3	n and one	freight trai	in carrying 100	300
3.1.6 - front-front dangerous g invo Fatalities pass Distribution-type Average	Iving chlo engers Poisson 0	rine resul 0 100,00% 0	n one pass ting in sma 1 0 0	enger train all release 3 0 0	10 0	freight trai 30 0 0	in carrying 100 0 0	300 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp	lving chlo engers Poisson 0 loyees	rine resul 0 100,00% 0 0	n one pass ting in sma 1 0 0	enger train all release 3 0 0 3	10 0 0 10	freight trai	in carrying 100 0 100 100	300 0 0 300
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson Poisson 0 loyees Poisson	rine resul 0 100,00% 0 0 100,00%	n one pass ting in sma 1 0 0 1 0	enger train all release 3 0 0 0 3 0	10 0 0 10 0	freight trai	in carrying 100 0 100 0	300 0 0 300 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp	lving chlo engers Poisson 0 loyees	rine resul 0 100,00% 0 0	n one pass ting in sma 1 0 0	enger train all release 3 0 0 3	10 0 0 10	freight trai	in carrying 100 0 100 100	300 0 0 300
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	lving chlo engers Poisson 0 loyees Poisson 0	rine resul 0 100,00% 0 100,00% 0	n one pass ting in sma 1 0 0 1 0	enger train all release 3 0 0 0 3 0 0	10 0 0 10 0 10 0	freight trai	in carrying 100 0 0 100 0 0	300 0 0 300 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distruption	lving chlo engers Poisson 0 loyees Poisson 0	rine resul 0 100,00% 0 100,00% 0 0	n one pass ting in sma 1 0 0 1 0 0	enger train all release 3 0 0 0 3 0 0 0 7	10 0 0 10 0 10 0 0 14	freight trai	in carrying 100 0 0 100 0 180	300 0 0 300 0 0 365
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type	lving chlo engers Poisson 0 loyees Poisson 0 n Poisson	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53%	1 0 0 0 1 0 0 1 27,07%	enger train all release 3 0 0 0 3 0 0 0 7 59,29%	10 0 0 10 0 10 0 0 14 0,11%	freight trai	in carrying 100 0 0 100 0 180 0	300 0 0 300 0 0 365 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type	lving chlo engers Poisson 0 loyees Poisson 0	rine resul 0 100,00% 0 100,00% 0 0	n one pass ting in sma 1 0 0 1 0 0	enger train all release 3 0 0 0 3 0 0 7	10 0 0 10 0 10 0 0 14	freight trai	in carrying 100 0 0 100 0 180	300 0 0 300 0 0 365
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	lving chlo engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0	1 one pass ting in sma 0 0 0 1 0 0 1 27,07% 2,71E-01	enger train all release 3 0 0 0 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00	10 0 0 10 0 10 0 0 0 14 0,11% 1,54E-02	freight trai	in carrying 100 0 0 100 0 180 0 0 0	300 0 0 300 0 0 365 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	lving chlo engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0	n one pass ting in sma 1 0 0 1 0 1 27,07% 2,71E-01 1,00E+04	enger train all release 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06	freight tra 30 0 0 30 0 0 30 0,00% 1,16E-07 1,00E+07	in carrying 100 0 0 100 0 180 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Iving chlo engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0	n one pass ting in sma 1 0 0 0 1 27,07% 2,71E-01 1,00E+04 0	enger train all release 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0	freight trai 30 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 100,00%	in carrying 100 0 0 100 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	Iving chlo engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0	n one pass ting in sma 1 0 0 1 0 1 27,07% 2,71E-01 1,00E+04	enger train all release 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06	freight tra 30 0 0 30 0 0 30 0,00% 1,16E-07 1,00E+07	in carrying 100 0 0 100 0 180 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	lving chlo engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0	n one pass ting in sma 1 0 0 1 0 1 27,07% 2,71E-01 1,00E+04 0 0	enger train all release 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0	freight tra 30 0 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 100,00% 1,00E+07	in carrying 100 0 0 100 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving chlo engers Poisson 0 Ioyees Poisson 0 2,00E+00 5,00E+06	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0 0	n one pass ting in sma 1 0 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0	enger train all release 3 0 0 0 3 0 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 0 10 0 0 10 0 0 0 14 1,54E-02 1,00E+06 0 0 0	freight trai 30 0 0 30 0 0 30 0,00% 1,16E-07 1,00E+07 1,00E+07 30	in carrying 100 0 0 100 0 180 0 0 1,00E+08 0 0 180	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving chlo engers Poisson o loyees Poisson o c yooE+00 sts Poisson 5,00E+06	rine resul 0 100,00% 0 100,00% 0 100,00% 0 1,00E+03 0 0 0 1,00E+03 0 0 1,00E+03	1 0 0 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 1 23,88%	enger train all release 3 0 0 0 3 0 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 4,46%	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 14 0,00%	freight tra 30 0 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 100,00% 1,00E+07 30 0 0	in carrying 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving chlo engers Poisson 0 Ioyees Poisson 0 2,00E+00 5,00E+06	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0 0	n one pass ting in sma 1 0 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0	enger train all release 3 0 0 0 3 0 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 0 10 0 0 10 0 0 0 14 1,54E-02 1,00E+06 0 0 0	freight trai 30 0 0 30 0 0 30 0,00% 1,16E-07 1,00E+07 1,00E+07 30	in carrying 100 0 0 100 0 180 0 0 1,00E+08 0 0 180	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving chlo engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 5,00E+06 5,00E+06 oad Poisson 3,33E-01	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 0 13,55% 0 0 13,55% 0 0 13,55% 0 0 13,55% 0 0 13,55% 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 23,88% 2,39E-01	enger train all release 3 0 0 0 3 0 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 4,46% 3,12E-01	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 0 14 0,00% 3,94E-08	freight trai 30 0 0 0 30 0 0 0 0 0 0 1,16E-07 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	in carrying 100 0 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving chlo engers Poisson o loyees Poisson o c poisson 2,00E+00 sts Poisson 5,00E+06 coad Poisson 3,33E-01	rine resul 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 1,00E+03 0 0 1,00E+03 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 1 23,88% 2,39E-01 1	enger train all release 3 0 0 0 3 0 0 0 3 59,29% 4,15E+00 1,00E+05 0 0 0 7 4,46% 3,12E-01 3	10 0 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 14 0,00% 3,94E-08	freight tra 30 0 0 0 30 0 0 0 0 0 30 0,00% 1,16E-07 1,00E+07 100,00% 1,00E+07 30 0 0 0 30 0 30 0 30 1,00E+07 30 0 30 0 30 30 30 30 30 30	in carrying 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 100 10	300 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3.1.6 - front- front dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving chlo engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 5,00E+06 5,00E+06 oad Poisson 3,33E-01	rine resul 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 0 13,55% 0 0 13,55% 0 0 13,55% 0 0 13,55% 0 0 13,55% 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 23,88% 2,39E-01	enger train all release 3 0 0 0 3 0 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 4,46% 3,12E-01	10 0 0 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0 0 14 0,00% 3,94E-08	freight trai 30 0 0 0 30 0 0 0 0 0 0 1,16E-07 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	in carrying 100 0 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

3.1.7 - front- front dangerous g invo			-	-		freight tra	in carrying	I
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	-	0	0,00%	0,00%	0,13%	91,17%	8,71%	0
Average	23,75	0	1,15E-09	3,66E-07	1,26E-02	2,74E+01	8,71E+00	0
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	Poisson	47,24%	35,43%	16,61%	0,73%	0	0	0
Average	0,75	0	3,54E-01	4,98E-01	7,29E-02	1,60E-08	0	0
	-		· ·		· ·	· ·		
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	4,98%	14,94%	78,89%	1,19%	0,00%	0	0
Average	3,00E+00	0	1,49E-01	5,52E+00	1,67E-01	2,01E-05	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.1.8 - front- front dangerous g invo Fatalities pass					n and one	freight tra	in carrying	I
i atanties bass	ondore	0	1		10	30	100	300
	- -	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	3 0	0,00%	19,72%	80,28%	0
	- -	-	-	3			80,28%	
Distribution-type Average	Poisson 35,625	0	0	3 0 0	0,00% 4,20E-06	19,72% 5,91E+00	80,28% 8,03E+01	0
Distribution-type Average Fatalities emp	Poisson 35,625 Ioyees	0 0 0	0 0 1	3 0 0 3	0,00% 4,20E-06 10	19,72% 5,91E+00 30	80,28%	0 0 300
Distribution-type Average Fatalities emp Distribution-type	Poisson 35,625 Ioyees Poisson	0	0 0 1 36,52%	3 0 0	0,00% 4,20E-06	19,72% 5,91E+00 30 0,00%	80,28% 8,03E+01 100	0
Distribution-type Average Fatalities emp	Poisson 35,625 Ioyees	0 0 0 32,47%	0 0 1	3 0 0 3 28,25%	0,00% 4,20E-06 10 2,76%	19,72% 5,91E+00 30	80,28% 8,03E+01 100 0	0 0 300 0
Distribution-type Average Fatalities emp Distribution-type	Poisson 35,625 Ioyees Poisson 1,125	0 0 0 32,47%	0 0 1 36,52%	3 0 0 3 28,25%	0,00% 4,20E-06 10 2,76%	19,72% 5,91E+00 30 0,00%	80,28% 8,03E+01 100 0	0 0 300 0
Distribution-type Average Fatalities emp Distribution-type Average	Poisson 35,625 Ioyees Poisson 1,125	0 0 0 32,47% 0	0 0 1 36,52% 3,65E-01	3 0 0 3 28,25% 8,47E-01	0,00% 4,20E-06 10 2,76% 2,76E-01	19,72% 5,91E+00 30 0,00% 9,83E-07	80,28% 8,03E+01 100 0 0	0 0 300 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 35,625 Ioyees Poisson 1,125	0 0 32,47% 0	0 0 1 36,52% 3,65E-01	3 0 0 3 28,25% 8,47E-01 7	0,00% 4,20E-06 10 2,76% 2,76E-01 14	19,72% 5,91E+00 30 0,00% 9,83E-07 30	80,28% 8,03E+01 100 0 0 180	0 0 300 0 0 365
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 35,625 Ioyees Poisson 1,125 n Poisson	0 0 32,47% 0 4,98%	0 0 1 36,52% 3,65E-01 1 14,94%	3 0 0 3 28,25% 8,47E-01 78,89%	0,00% 4,20E-06 10 2,76% 2,76E-01 14 1,19%	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00%	80,28% 8,03E+01 100 0 0 180 0	0 0 300 0 0 365 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 35,625 loyees Poisson 1,125 n Poisson 3,00E+00	0 0 32,47% 0 4,98%	0 0 1 36,52% 3,65E-01 1 14,94%	3 0 0 3 28,25% 8,47E-01 78,89%	0,00% 4,20E-06 10 2,76% 2,76E-01 14 1,19%	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00%	80,28% 8,03E+01 100 0 0 180 0	0 0 300 0 0 365 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	Poisson 35,625 loyees Poisson 1,125 n Poisson 3,00E+00 sts	0 0 32,47% 0 4,98% 0	0 0 1 36,52% 3,65E-01 1 14,94% 1,49E-01	3 0 0 28,25% 8,47E-01 7 78,89% 5,52E+00	0,00% 4,20E-06 10 2,76% 2,76E-01 14 1,19% 1,67E-01	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05	80,28% 8,03E+01 0 0 180 0 0	0 0 300 0 0 365 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Bistribution-type Distribution-type	Poisson 35,625 loyees Poisson 1,125 n Poisson 3,00E+00 sts	0 0 32,47% 0 4,98% 0 1,00E+03	0 0 1 36,52% 3,65E-01 14,94% 1,49E-01 1,00E+04	3 0 0 3 28,25% 8,47E-01 7 8,89% 5,52E+00 1,00E+05	0,00% 4,20E-06 2,76% 2,76E-01 4 1,19% 1,67E-01 1,00E+06	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07	80,28% 8,03E+01 0 0 180 0 0 1,00E+08	0 0 300 0 0 365 0 0 0 1,00E+09
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Bistribution-type Distribution-type	Poisson 35,625 Poisson 1,125 n Poisson 3,00E+00 sts Poisson	0 0 32,47% 0 4,98% 0 1,00E+03 0	0 0 1 36,52% 3,65E-01 14,94% 1,49E-01 1,00E+04 0	3 0 0 3 28,25% 8,47E-01 7 78,89% 5,52E+00 1,00E+05 0	0,00% 4,20E-06 10 2,76% 2,76E-01 14 1,19% 1,67E-01 1,00E+06 0	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07 100,00%	80,28% 8,03E+01 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Bistribution-type Distribution-type	Poisson 35,625 Poisson 1,125 n Poisson 3,00E+00 sts Poisson 5,00E+06	0 0 32,47% 0 4,98% 0 1,00E+03 0	0 0 1 36,52% 3,65E-01 14,94% 1,49E-01 1,00E+04 0	3 0 0 3 28,25% 8,47E-01 7 78,89% 5,52E+00 1,00E+05 0	0,00% 4,20E-06 10 2,76% 2,76E-01 14 1,19% 1,67E-01 1,00E+06 0	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07 100,00%	80,28% 8,03E+01 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 35,625 Poisson 1,125 n Poisson 3,00E+00 sts Poisson 5,00E+06	0 0 32,47% 0 4,98% 0 1,00E+03 0 0	0 0 1 36,52% 3,65E-01 14,94% 1,49E-01 1,00E+04 0 0	3 0 0 3 28,25% 8,47E-01 78,89% 5,52E+00 1,00E+05 0 0	0,00% 4,20E-06 2,76% 2,76E-01 4 1,19% 1,67E-01 1,00E+06 0 0	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07	80,28% 8,03E+01 0 0 180 0 0 1,00E+08 0 0	0 0 0 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 35,625 loyees Poisson 1,125 n Poisson 3,00E+00 sts Poisson 5,00E+06 oad Poisson	0 0 32,47% 0 4,98% 0 1,00E+03 0 0	0 0 1 36,52% 3,65E-01 14,94% 1,49E-01 1,00E+04 0 0	3 0 0 3 28,25% 8,47E-01 7 78,89% 5,52E+00 1,00E+05 0 0 0	0,00% 4,20E-06 10 2,76% 2,76E-01 14 1,19% 1,67E-01 1,00E+06 0 0	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07	80,28% 8,03E+01 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 35,625 loyees Poisson 1,125 n Poisson 3,00E+00 sts Poisson 5,00E+06 oad Poisson	0 0 32,47% 0 4,98% 0 4,98% 0 1,00E+03 0 0 0 71,65%	0 0 1 36,52% 3,65E-01 14,94% 1,49E-01 1,00E+04 0 0 0	3 0 0 3 28,25% 8,47E-01 7 8,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	0,00% 4,20E-06 2,76% 2,76E-01 4 1,19% 1,67E-01 1,00E+06 0 0 0	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0	80,28% 8,03E+01 0 0 180 0 0 1,00E+08 0 0 1,00E+08	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 35,625 loyees Poisson 1,125 n Poisson 3,00E+00 sts Poisson 5,00E+06 0ad Poisson 3,33E-01	0 0 32,47% 0 4,98% 0 4,98% 0 1,00E+03 0 0 0 71,65%	0 0 1 36,52% 3,65E-01 14,94% 1,49E-01 1,00E+04 0 0 0	3 0 0 3 28,25% 8,47E-01 7 8,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	0,00% 4,20E-06 2,76% 2,76E-01 4 1,19% 1,67E-01 1,00E+06 0 0 0	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0	80,28% 8,03E+01 0 0 180 0 0 1,00E+08 0 0 1,00E+08	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 35,625 loyees Poisson 1,125 n Poisson 3,00E+00 sts Poisson 5,00E+06 0ad Poisson 3,33E-01	0 0 32,47% 0 4,98% 0 4,98% 0 1,00E+03 0 0 1,00E+03 0 0 71,65% 0	0 0 0 1 36,52% 3,65E-01 1 14,94% 1,49E-01 1,00E+04 0 0 0 0 1 23,88% 2,39E-01	3 0 0 3 28,25% 8,47E-01 7 78,89% 5,52E+00 5,52E+00 0 0 0 0 7 4,46% 3,12E-01	0,00% 4,20E-06 10 2,76% 2,76E-01 14 1,19% 1,67E-01 1,00E+06 0 0 0 14 0,00% 3,94E-08	19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0 0	80,28% 8,03E+01 0 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0

dangerous g invo			-	-		-	in carrying	
Fatalities pass			1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
	•	<u> </u>	<u> </u>	•	•	•	<u> </u>	•
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	-	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.1.10 - front- fro								
dangerous g invo	lving flam	mable res	ulting in s	nall releas	se and no	ignition	-	-
dangerous g invo Fatalities pass	lving flam engers	mable res 0	ulting in s 1	nall releas 3	se and no 10	ignition 30	100	300
dangerous g invo Fatalities pass Distribution-type	engers Poisson	mable res 0 100,00%	ulting in s 1 0	nall releas 3 0	se and no 10 0	ignition 30 0	100 0	300 0
dangerous g invo Fatalities pass	lving flam engers	mable res 0	ulting in s 1	nall releas 3	se and no 10	ignition 30	100	300
dangerous g invo Fatalities pass Distribution-type	elving flam engers Poisson 0	mable res 0 100,00%	ulting in s 1 0	nall releas 3 0	se and no 10 0	ignition 30 0	100 0	300 0
dangerous g invo Fatalities pass Distribution-type Average	elving flam engers Poisson 0	mable res 0 100,00% 0	ulting in s 1 0	mall releases 3 0 0	se and no 10 0	ignition 30 0 0	100 0	300 0 0
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 10yees	mable res 0 100,00% 0 0	ulting in si 1 0 0	mall releases 3 0 0 3	se and no 10 0 10 10	ignition 30 0 0 30 30	100 0 0 100	300 0 0 300
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 Poisson 0 Poisson Poisson	o 100,00% 0 100,00% 100,00%	ulting in si 1 0 0 1 0	3 0 0 0 0 0 0 0 0 0	se and no 10 0 0 10 0	ignition 30 0 0 0 30 0 0 0 0	100 0 0 100 0	300 0 0 300 0
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 loyees Poisson 0 loyees 0	o 100,00% 0 100,00% 100,00%	ulting in si 1 0 0 1 0	3 0 0 0 0 0 0 0	se and no 10 0 0 10 0	ignition 30 0 0 0 30 0 0 0 0	100 0 0 100 0	300 0 0 300 0
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson Poisson O Ioyees Poisson O N Poisson	O 100,00% 0 100,00% 100,00% 0	ulting in si 1 0 0 1 0 0 0	3 0 0 0 0 0 0 0 0 0	se and nd 0 0 0 0 0 0 10 0 0 0 0 0 0 0 0	ignition 30 0 0 0 0 0 0 0 0 0	100 0 0 100 0 0	300 0 0 300 0 0
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 Poisson 0 loyees Poisson 0	O 100,00% 0 100,00% 0 100,00% 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 1	3 0 0 0 3 0 0 0 3 0 0 0 7 7	se and nd 0 0 0 0 0 0 10 0 0 0 0 0 10 0 0 11 0 0 11 0 0 11 0 0	ignition 30 0 0 0 0 30 0 30 30 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	Poisson 0 Poisson 0 Poisson 0 n Poisson 7,20E+01	O 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 0 0	3 0 0 0 3 0 0 0 3 0 0 0 7 0 0 0	se and nd 0 0 0 0 0 0 10 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ignition 30 0 0 0 30 0 30 0 0 0 0 0 0 0 0 0 5,39E-07	100 0 0 100 0 0 180 100,00% 1,80E+02	300 0 0 300 0 0 365 0 0
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 Poisson 0 Poisson 0 n Poisson 7,20E+01	O 100,00% 0 100,00% 0 100,00% 0 0 0 0 0	ulting in sr 1 0 0 1 0 0 1 0 1 0	3 0 0 0 3 0 0 0 3 0 0 0 7 0	se and nd 0 0 0 0 0 0 10 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ignition 30 0 0 0 0 30 0 30 0 30 0 30 0 0 0 0 0 0 0 0 0 0 0 0,00%	100 0 0 100 0 0 180 100,00%	300 0 0 300 0 0 0 365 0
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average	Poisson Poisson Poisson Poisson Poisson 0 Poisson 7,20E+01 sts Poisson	0 100,00% 0 100,00% 0 100,00% 0 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0	3 0 0 0 3 0 0 0 3 0 0 0 7 0 0 0	se and nd 0 0 0 0 0 0 10 0 0 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ignition 30 0 0 30 0 0 0 0 0 0 30 5,39E-07 1,00E+07 100,00%	100 0 0 100 0 0 100,00% 1,80E+02 1,00E+08 0	300 0 0 300 0 0 365 0 0
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average	Poisson Poisson Poisson Poisson 0 Poisson 7,20E+01 sts	o 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 100,00% 100,00% 100,00% 0 0 1,00E+03	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04	all release 3 0 0 3 0 0 7 0 1,00E+05	se and nd 0 0 0 0 0 0 10 0 0 10 0 0 10 0 0 10 0 0 14 0 0 1,00E+06 0 0	ignition 30 0 0 30 0 30 0 30 0 0 0 30 0,00% 5,39E-07 1,00E+07	100 0 0 100 0 0 100,00% 1,80E+02 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average	lving flam engers Poisson 0 loyees Poisson 0 r Poisson 7,20E+01 sts Poisson 5,00E+06	0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0	7 0 1,00E+05 0	se and no 10 0 0 0 10 0 10 0 10 0 10 10 0 10 10 10 0 0 14 0 0 1,00E+06 0 0 0	ignition 30 0 0 30 0 0 0 0 0 0 30 5,39E-07 1,00E+07 100,00%	100 0 0 100 0 0 0 100,00% 1,80E+02 1,00E+08 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	lving flam engers Poisson 0 loyees Poisson 0 r Poisson 7,20E+01 sts Poisson 5,00E+06	mable res 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 1	7 0 1,00E+05 0 0	se and no 10 0 0 0 10 0 10 0 10 0 10 0 10 0 14 0 0 0 0 0 1,00E+06 0 0 14	ignition 30 0 0 30 0 0 0 0 0 0 30 5,39E-07 1,00E+07 100,00%	100 0 0 100 0 0 100,00% 1,80E+02 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average	lving flam engers Poisson 0 loyees Poisson 0 r Poisson 7,20E+01 sts Poisson 5,00E+06	0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0	7 0 1,00E+05 0	se and no 10 0 0 0 10 0 10 0 10 0 10 10 0 10 10 10 0 0 14 0 0 1,00E+06 0 0 0	ignition 30 0 0 30 0 0 0 0 30 0,00% 5,39E-07 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 0 180 100,00% 1,80E+02 1,00E+08 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson Poisson O Poisson O Poisson 7,20E+01 Sts Poisson 5,00E+06 O O	mable res 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 1	7 0 1,00E+05 0 0	se and no 10 0 0 0 10 0 10 0 10 0 10 0 14 0 0 1,00E+06 0 0 14	ignition 30 0 0 30 0 30 0 0 0 0 30 0 0 30 0,00% 5,39E-07 1,00E+07 1,00E+07 30	100 0 0 100 0 0 0 100,00% 1,80E+02 1,80E+02 1,80E+02	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving flam engers Poisson 0 Ioyees Poisson 0 Poisson 7,20E+01 5,00E+06 5,00E+06 oad Poisson 3,33E-01	O 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 23,88% 2,39E-01	7 0 7 0 7 0 7 0 0 7 0 0 7 0 0 3,12E-01	se and no 10 0 0 0 10 0 0 10 0 0 14 0 0 1,00E+06 0 0 14 0,00% 3,94E-08	ignition 30 0 0 30 0 0 0 0 30 0,00% 5,39E-07 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 0 180 100,00% 1,80E+02 1,80E+02 1,80E+02 1,80E+02 0 0 0	300 0 300 0 300 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving flam engers Poisson 0 Ioyees Poisson 0 Poisson 7,20E+01 5,00E+06 5,00E+06 oad Poisson 3,33E-01	mable res 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1,00E+04 1 23,88% 2,39E-01	7 0 7 0 7 0 7 0 7 0 7 0 7 3,12E-01 3	se and nd 10 0 0 0 0 0 10 0 0 0 0 0 14 0 0 0 0 0 1,00E+06 0 0 0 0 1	ignition 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0,00% 5,39E-07 1,00E+07 100,00% 1,00E+07 30 0 0 0 30 0 30	100 0 0 100 0 0 0 100,00% 1,80E+02 1,00E+08 0 0 0 180 0	300 0 300 0 300 0 0 365 0 0 1,00E+09 0 0 365 0 0
dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Iving flam engers Poisson 0 Ioyees Poisson 0 Poisson 7,20E+01 5,00E+06 5,00E+06 oad Poisson 3,33E-01	O 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ulting in si 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 23,88% 2,39E-01	7 0 7 0 7 0 0 7 0 0 7 0 0 7 0 3,12E-01	se and no 10 0 0 0 10 0 0 10 0 0 14 0 0 1,00E+06 0 0 14 0,00% 3,94E-08	ignition 30 0 0 30 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0	100 0 0 100 0 0 0 180 100,00% 1,80E+02 1,80E+02 1,80E+02 1,80E+02 0 0 0	300 0 300 0 300 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

3.1.11 - front- fron dangerous g invo			-	-		-		g
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	-	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average		0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
		•	-	-			400	005
Disruptio		0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Discustion	aad	0	4	7	44	20	400	205
Disruption r	I	0	1	7	14	30	180	365
Distribution-type		71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
	2,15E+02	0	0	0	0	0	0	3,00E+02
3.1.13 - front- fron dangerous g invo			-	-		-	-	g
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0,00%	100,00%	0
	7,20E+01	0	0	0	0	5,39E-07	1,80E+02	0
///////////////////////////////////////	.,					0,002 01	.,	
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
<i>,</i> ,	5,00E+06		0	0	0	1,00E+07	0	0
5								
Disruption r		0	1	7	14	30	180	365
Distribution-type		71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	oad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	-
Average	U	0	U	U	0	U	U	0

3.1.14 - front- end dangerous good r			-	-		-		
Fatalities pass			1	3	10	30	100	300
Distribution-type		0	0	0	0	0	85,92%	14,08%
Average		0	0	0	0	0	8,59E+01	4,22E+01
	, -	-	-	-	-	-	-,	, -
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruption	n	0	1	7	14	30	180	365
=		0	0	0	0	0	0	51,39%
Distribution-type	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	3,032702	0	0	0	0	0	0	1,000+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	I	0	1	7	14	30	180	365
Distribution-type		71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	oad	0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
	2,15E+02	0	0	0	0	0	0	3,00E+02
3.1.16 - front- froi	nt - train co		-	-		-	-	g
dangerous goods Fatalities pass			1 1	Sulting In	10	30	<u>9 to no ig</u> 100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
7000080	-	-		-	-	-		-
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		-		-	-			
Disruption		0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0,00%	100,00%	0
Average	7,20E+01	0	0	0	0	5,39E-07	1,80E+02	0
Repair cos	ete	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	1,00E+08	0
	5,00E+06		0	0	0	1,00E+07	0	0
Average	0,002.00	Ŭ	Ŭ	Ŭ	Ŭ	1,002.07	Ū	Ŭ
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
		-		-	-			-
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

			-	-	in and one	e freight tra	ain carryin	g
dangerous g invo					- 10		100	
Fatalities pass	-	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		-		-				
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption		0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
				=		=		
Repair cos		1,00E+03		1,00E+05				
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption re		0	1	7	14	30	180	365
Distribution-type		71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.1.19 - front- fror			-				ain carryin	g
dangerous g invo Fatalities passe	iving ipg i	esulling ir			no ignitior			-
Distribution-type	anders		_				100	300
		0	1	3	10	30	100	300
	Poisson	0 100,00%	1 0	3 0	10 0	30 0	0	0
Average		0	1	3	10	30		
Average	Poisson 0	0 100,00% 0	1 0 0	3 0 0	10 0 0	30 0 0	0	0
Average Fatalities emp	Poisson 0 loyees	0 100,00% 0 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	0 0 100	0 0 300
Average Fatalities emp Distribution-type	Poisson 0 loyees Poisson	0 100,00% 0 100,00%	1 0 0 1 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	0 0 100 0	0 0 300 0
Average Fatalities emp	Poisson 0 loyees	0 100,00% 0 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	0 0 100	0 0 300
Average Fatalities emp Distribution-type Average	Poisson 0 loyees Poisson 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0	10 0 0 10 0 0	30 0 0 30 0 0	0 0 100 0 0	0 0 300 0 0
Average Fatalities emp Distribution-type Average Disruption	Poisson 0 loyees Poisson 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	0 0 100 0 0 180	0 0 300 0 0 365
Average Fatalities emp Distribution-type Average Disruption Distribution-type	Poisson 0 loyees Poisson 0 n Poisson	0 100,00% 0 100,00% 0 0	1 0 0 1 0 0 1 0	3 0 0 3 0 0 0 7 0	10 0 0 10 0 0 14 0	30 0 0 30 0 0 30 0,00%	0 0 100 0 0 180 100,00%	0 0 300 0 0 365 0
Average Fatalities emp Distribution-type Average Disruption Distribution-type	Poisson 0 loyees Poisson 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	0 0 100 0 0 180	0 0 300 0 0 365
Average Fatalities emp Distribution-type Average Disruption Distribution-type Average	Poisson 0 loyees Poisson 0 n Poisson 7,20E+01	0 100,00% 0 100,00% 0 0 0 0	1 0 0 1 0 0 1 0 0	3 0 0 3 0 0 0 7 0 0 0	10 0 0 10 0 0 14 0 0	30 0 0 30 0 0 0 30 5,39E-07	0 0 0 0 0 180 100,00% 1,80E+02	0 0 300 0 0 365 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Average Repair cos	Poisson 0 loyees Poisson 0 n Poisson 7,20E+01	0 100,00% 0 100,00% 0 0 0 0 1,00E+03	1 0 0 1 0 0 1 0 0 1,00E+04	3 0 0 3 0 0 0 7 0 0 0 1,00E+05	10 0 0 10 0 0 14 0 0 0 1,00E+06	30 0 0 30 0 0 0 30 0,00% 5,39E-07	0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08	0 0 300 0 0 365 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Average Repair cos Distribution-type	Poisson 0 loyees Poisson 0 n Poisson 7,20E+01 sts Poisson	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0	1 0 0 1 0 0 1 0 0 1,00E+04 0	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	10 0 10 0 10 0 0 14 0 0 14 0 0 1,00E+06 0	30 0 0 30 0 0 0 30 5,39E-07 1,00E+07 100,00%	0 0 0 0 0 180 100,00% 1,80E+02 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	Poisson 0 loyees Poisson 0 n Poisson 7,20E+01	0 100,00% 0 100,00% 0 0 0 0 1,00E+03	1 0 0 1 0 0 1 0 0 1,00E+04	3 0 0 3 0 0 0 7 0 0 0 1,00E+05	10 0 0 10 0 0 14 0 0 0 1,00E+06	30 0 0 30 0 0 0 30 30 5,39E-07 1,00E+07	0 0 0 0 0 180 100,00% 1,80E+02 1,00E+08 0	0 0 300 0 0 365 0 0 0 1,00E+09
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average	Poisson 0 loyees Poisson 0 Poisson 7,20E+01 sts Poisson 5,00E+06	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0	1 0 0 1 0 0 1 0 0 1,00E+04 0 0	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0	10 0 10 10 0 10 0 0 14 0 0 1,00E+06 0 0	30 0 0 30 0 0 0 30 0,00% 5,39E-07 1,00E+07 1,00E+07	0 0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 loyees Poisson 0 Poisson 7,20E+01 sts Poisson 5,00E+06	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0 0	1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	10 0 10 0 10 0 0 14 0 1,00E+06 0 0 14	30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type	Poisson 0 loyees Poisson 0 Poisson 7,20E+01 sts Poisson 5,00E+06 oad Poisson	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0 0 0 71,65%	1 0 0 1 0 0 0 1,00E+04 0 0 0 1,00E+04 23,88%	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 4,46%	10 0 10 0 10 0 0 14 0 0 140 0 0 1,00E+06 0 14 0 0 14 0 0	30 0 0 30 0 0 0 0 30 0,00% 5,39E-07 1,00E+07 1,00E+07 1,00E+07	0 0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 loyees Poisson 0 Poisson 7,20E+01 sts Poisson 5,00E+06	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0 0	1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	10 0 10 0 10 0 0 14 0 1,00E+06 0 0 14	30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 loyees Poisson 0 Poisson 7,20E+01 sts Poisson 5,00E+06 oad Poisson 3,33E-01	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0 0 71,65% 0	1 0 0 1 0 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 1 23,88% 2,39E-01	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 1,00E+05 0 0 0 0 1,00E+05	10 0 10 0 10 0 0 14 0 0 1,00E+06 0 0 14 0,00% 3,94E-08	30 0 0 30 0 0 0 0 0 0 30 5,39E-07 100,00% 1,00E+07 100,00% 1,00E+07	0 0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Fatalities reference	Poisson 0 loyees Poisson 0 Poisson 7,20E+01 sts Poisson 5,00E+06 oad Poisson 3,33E-01	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0 0 71,65% 0	1 0 0 1 0 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 1 23,88% 2,39E-01	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 4,46% 3,12E-01	10 0 0 10 0 10 0 0 14 0 0 1,00E+06 0 3,94E-08 10	30 0 0 30 0 0 0 0 30 5,39E-07 1,00E+07 1,00E+07 1,00E+07 30 0 0 0 30	0 0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08 0 0 0 180 0 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 365 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 loyees Poisson 0 Poisson 7,20E+01 sts Poisson 5,00E+06 oad Poisson 3,33E-01	0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0 0 71,65% 0	1 0 0 1 0 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 23,88% 2,39E-01	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 1,00E+05 0 0 0 0 1,00E+05	10 0 10 0 10 0 0 14 0 0 1,00E+06 0 0 14 0,00% 3,94E-08	30 0 0 30 0 0 0 0 0 0 30 5,39E-07 100,00% 1,00E+07 100,00% 1,00E+07	0 0 0 100 0 0 180 100,00% 1,80E+02 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 365 0 0

dangerous g invo		small relea	ase resultir	ng in delay		n and exp		
Fatalities pass	-	0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
Average		0	0	0	0	0	0	1,88E+02
Average	3,032.02	0	0	0	0	0	0	1,002102
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	aad	0	1	7	14	30	180	365
-	I					0	0	0
Distribution-type		71,65%	23,88%	4,46%	0,00%	-	-	÷
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
3.1.22 - front- fron dangerous g invo								g
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
			l.	l.	ł	l.		I
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Diamantia	-	•		-	44	20	400	205
Disruptio		0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
	5,00E+06	0	0	0	0	1,00E+07	0	0
	-,	-	-	-	-	,	-	-
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average		0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson 2,15E+02	0	0	0	0	0	0	100,00% 3,00E+02

3.1.24 - front- froi dangerous g invo			lease resu	ıltina in no	ianition			
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
5								
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0,00%	100,00%	0
Average	7,20E+01	0	0	0	0	5,39E-07	1,80E+02	0
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06	-	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
	had	0	1	3	10	30	100	300
Fatalities ro	Jau							
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
				0	0	0	0	0
Distribution-type Average 3.1.25 - front- fron dangerous g invo	Poisson 0 nt - train co Iving Ipg,r	100,00% 0 ollision wi	0 0 th one pas	0 senger tra llting in de	0 in and one layed igni	0 e freight tra tion and e	0 ain carryin explosion	a
Distribution-type Average 3.1.25 - front-fron dangerous g invo Fatalities pass	Poisson 0 nt - train co lving lpg,r engers	100,00% 0 ollision wi medium re 0	0 0 th one pas lease resu 1	0 senger tra Ilting in de 3	0 in and one layed igni 10	0 freight tra tion and e 30	0 ain carryin explosion 100	0 g 300
Distribution-type Average 3.1.25 - front-fron dangerous g invo Fatalities pass Distribution-type	Poisson 0 nt - train co lving lpg,r engers Poisson	100,00% 0 ollision wi nedium re 0 0	0 0 th one pas lease resu 1 0	0 senger tra ilting in de 3 0	0 in and one layed igni 10 0	0 e freight tra tion and e 30 0	0 ain carryin explosion 100 85,92%	0 g <u>300</u> 14,08%
Distribution-type Average 3.1.25 - front-fron dangerous g invo Fatalities pass	Poisson 0 nt - train co lving lpg,r engers	100,00% 0 ollision wi medium re 0	0 0 th one pas lease resu 1	0 senger tra Ilting in de 3	0 in and one layed igni 10	0 freight tra tion and e 30	0 ain carryin explosion 100	0 g 300
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities pass Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25	100,00% 0 ollision wi nedium re 0 0 0	0 0 th one pas lease resu 1 0	0 senger tra ilting in de 3 0	0 in and one layed igni 10 0	0 e freight tra tion and e 30 0	0 ain carryin explosion 100 85,92% 8,59E+01	0 g 14,08% 4,22E+01
Distribution-type Average 3.1.25 - front- fron dangerous g invo Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees	100,00% 0 ollision wi nedium re 0 0	0 0 th one pas lease resu 1 0 0	0 senger tra ilting in de 3 0 0	0 in and one layed igni 10 0 0	0 e freight tra tion and e 30 0 0	0 ain carryin explosion 100 85,92%	0 g <u>300</u> 14,08%
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities pass Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25	100,00% 0 ollision wi nedium re 0 0 0 0	0 0 th one pas lease resu 1 0 0	0 senger tra ilting in de 3 0 0 3	0 in and one layed igni 10 0 0 10 31,90%	0 e freight tra tion and e 30 0 0 30 30	0 ain carryin explosion 100 85,92% 8,59E+01 100	0 9 14,08% 4,22E+01 300
Distribution-type Average 3.1.25 - front-from dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 Int - train co lving lpg,r engers Poisson 90,25 loyees Poisson	100,00% 0 ollision wi nedium re 0 0 0 0 0 5,78%	0 0 th one pas lease resu 1 0 0 0 16,49%	0 senger tra ilting in de 3 0 0 0 3 45,81%	0 in and one layed igni 10 0 0 10 31,90%	0 e freight tra tion and e 30 0 0 30 0,02%	0 ain carryin explosion 100 85,92% 8,59E+01 100 0	0 300 14,08% 4,22E+01 300 0
Distribution-type Average 3.1.25 - front-from dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 Int - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85	100,00% 0 ollision wi nedium re 0 0 0 0 0 5,78%	0 0 th one pas lease resu 1 0 0 0 16,49%	0 senger tra ilting in de 3 0 0 0 3 45,81%	0 in and one layed igni 10 0 0 10 31,90%	0 e freight tra tion and e 30 0 0 30 0,02%	0 ain carryin explosion 100 85,92% 8,59E+01 100 0	0 300 14,08% 4,22E+01 300 0
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average	Poisson 0 Int - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85	100,00% 0 0 0 0 0 0 0 0 5,78% 0	0 0 th one pas lease resu 1 0 0 0 1 16,49% 1,65E-01	0 senger tra ilting in de 3 0 0 0 3 45,81% 1,37E+00	0 in and one layed igni 10 0 0 10 31,90% 3,19E+00	0 e freight tra tion and e 30 0 0 30 0,02% 5,71E-03	0 ain carryin explosion 100 85,92% 8,59E+01 100 0 0	0 9 14,08% 4,22E+01 300 0 0
Distribution-type Average 3.1.25 - front- fron dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type	Poisson 0 Int - train co lving Ipg,r engers Poisson 90,25 Ioyees Poisson 2,85	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0	0 0 th one pass lease resu 1 0 0 0 1 16,49% 1,65E-01	0 senger tra 11ting in de 3 0 0 0 3 45,81% 1,37E+00 7	0 in and one layed igni 10 0 0 10 31,90% 3,19E+00	0 e freight tra tion and e 30 0 0 0 0 0 0 0 0 0 0 30 0,02% 5,71E-03 30	0 ain carryin 2xplosion 100 85,92% 8,59E+01 100 0 0	0 9 300 14,08% 4,22E+01 300 0 0 0 365
Distribution-type Average 3.1.25 - front- fron dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 0 0	0 0 1 1 0 0 0 1 16,49% 1,65E-01 1 0	0 senger tra ilting in de 3 0 0 0 3 45,81% 1,37E+00 7 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0	0 e freight tra tion and e 30 0 0 0 0 0 0 0 5,71E-03 30 0 0 0	0 ain carryin explosion 100 85,92% 8,59E+01 100 0 0 180 0	0 9 14,08% 4,22E+01 300 0 0 0 0 365 51,39%
Distribution-type Average 3.1.25 - front- fron dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type	Poisson 0 Int - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 0 0	0 0 1 1 0 0 0 1 16,49% 1,65E-01 1 0	0 senger tra ilting in de 3 0 0 0 3 45,81% 1,37E+00 7 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0	0 e freight tra tion and e 30 0 0 0 0 0 0 0 5,71E-03 30 0 0 0	0 ain carryin explosion 100 85,92% 8,59E+01 100 0 0 180 0	0 9 14,08% 4,22E+01 300 0 0 0 0 365 51,39%
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02	100,00% 0 0 0 0 0 0 0 0 0 5,78% 0 0 0 0 0 0 0	0 0 1 0 0 0 0 1 16,49% 1,65E-01 1 0 0	0 senger tra 1ting in de 3 0 0 0 3 45,81% 1,37E+00 7 0 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0	0 e freight tra tion and e 30 0 0 0 0 0 0 5,71E-03 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ain carryin 2xplosion 100 85,92% 8,59E+01 0 0 0 180 0 0	0 9 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities passe Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 1 16,49% 1,65E-01 1 0 0 0	0 senger tra ilting in de 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0	0 e freight tra tion and e 30 0 0 0 0 0 0 0 5,71E-03 30 0 0 0 1,00E+07	0 ain carryin explosion 100 85,92% 8,59E+01 100 0 0 180 0 0 180 0	0 9 300 14,08% 4,22E+01 300 0 0 0 0 365 51,39% 1,88E+02 1,00E+09
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities passe Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02 sts Poisson	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 5,78% 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 0 1 16,49% 1,65E-01 1 0 0 0 1,00E+04 0	0 senger tra 11ting in de 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0 1,00E+06 0	0 e freight tra tion and e 30 0 0 0 30 0,02% 5,71E-03 30 0 0 1,00E+07 100,00%	0 ain carryin 2xplosion 100 85,92% 8,59E+01 100 0 0 180 0 0 1,00E+08 0	0 9 300 14,08% 4,22E+01 300 0 0 0 0 365 51,39% 1,88E+02 1,88E+02 0
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities passe Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02 sts Poisson 5,00E+06	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 5,78% 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 0 1 16,49% 1,65E-01 1 0 0 0 1,00E+04 0	0 senger tra 11ting in de 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0 1,00E+06 0	0 e freight tra tion and e 30 0 0 0 30 0,02% 5,71E-03 30 0 0 1,00E+07 100,00%	0 ain carryin 2xplosion 100 85,92% 8,59E+01 100 0 0 180 0 0 1,00E+08 0	0 9 300 14,08% 4,22E+01 300 0 0 0 0 365 51,39% 1,88E+02 1,88E+02 0
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02 sts Poisson 5,00E+06	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 0 1 16,49% 1,65E-01 1 0 0 0 1,00E+04 0 0	0 senger tra ilting in de 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0 1,00E+06 0 0	0 freight tra tion and e 30 0 0 0 30 0,02% 5,71E-03 30 0 0 0 1,00E+07 1,00E+07	0 ain carryin explosion 100 85,92% 8,59E+01 100 0 0 180 0 0 180 0 0 1,00E+08 0 0	0 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities passe Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02 sts Poisson 5,00E+06	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 0 1 16,49% 1,65E-01 1 1,05E-01 1 0 0 0 1,00E+04 0 0	0 senger tra 11ting in de 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0 1,00E+06 0 0	0 e freight tra tion and e 30 0 0 0 30 0,02% 5,71E-03 30 0 0 1,00E+07 1,00E+07 1,00E+07 30	0 ain carryin explosion 100 85,92% 8,59E+01 100 0 0 180 0 1,00E+08 0 0 0	0 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 0
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities passe Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02 sts Poisson 5,00E+06 oad Poisson 3,33E-01	100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 0 1 16,49% 1,65E-01 1 1,65E-01 1 0 0 0 0 1,00E+04 0 0 0	0 senger tra 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0 1,00E+06 0 0	0 freight tra tion and e 30 0 0 0 30 0,02% 5,71E-03 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0	0 ain carryin 2xplosion 100 85,92% 8,59E+01 0 0 0 180 0 0 1,00E+08 0 0	0 9 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,88E+02 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.1.25 - front- fron dangerous g invo Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02 sts Poisson 5,00E+06 oad Poisson 3,33E-01	100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 0 1 16,49% 1,65E-01 1 1,65E-01 1 0 0 0 0 1,00E+04 0 0 0	0 senger tra 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0 0	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0 1,00E+06 0 0	0 freight tra tion and e 30 0 0 0 30 0,02% 5,71E-03 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0	0 ain carryin 2xplosion 100 85,92% 8,59E+01 0 0 0 180 0 0 1,00E+08 0 0	0 9 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,88E+02 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.1.25 - front- from dangerous g invo Fatalities passe Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 nt - train co lving lpg,r engers Poisson 90,25 loyees Poisson 2,85 n Poisson 3,65E+02 sts Poisson 5,00E+06 oad Poisson 3,33E-01	100,00% 0 0 0 0 0 0 0 0 5,78% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 1 1 0 0 0 0 1 16,49% 1,65E-01 1 1,65E-01 1 0 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0	0 senger tra 11ting in de 3 0 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0 0 7 4,46% 3,12E-01	0 in and one layed igni 10 0 0 31,90% 3,19E+00 14 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 3,94E-08	0 freight tra tion and e 30 0 0 0 30 0,02% 5,71E-03 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ain carryin explosion 100 85,92% 8,59E+01 0 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 0 0 0 0 0 0 0 0 0 0

				Iting in im				
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	0,002-02	Ŭ	Ŭ	0	•	•	Ŭ	1,002.02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	aad	0	1	7	14	30	180	365
Disruption r	C	0 71,65%				30		365 0
Distribution-type			23,88%	4,46%	0,00%	-	0	-
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
3.1.29 - front- fror dangerous g invo						e freight tra	ain carryin	g
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Diamuntia	-	•	4	7	44	20	400	205
Disruption		0	1 0	7	14	30	180 100,00%	365
Distribution-type		0		0	0	0,00%		0
Average	7,20E+01	0	0	0	0	5,39E-07	1,80E+02	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	[0	0	0	0	100,00%	0	0
	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro		0	1	3	10	30	100	300
Fatalities ro Distribution-type Average	oad Poisson 0	0 100,00% 0	1 0 0	3 0 0	10 0 0	30 0 0	100 0 0	300 0

3.1.30 - front-fron dangerous g invo			-	-		-	•	Ig
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	-	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average		0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	0,002102	Ŭ	Ŭ	Ŭ	Ŭ	•		1,002.02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	I	71,65%	23,88%	4,46%	0.00%	0	0	0
Average		0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
3.1.33 - front- fron dangerous g invo					in and one	e freight tra	ain carryir	g
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
	,	<u> </u>	,	,	,	,	<u> </u>	
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r		0	1	7	14	30	180	365
Distribution-type		71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
, we lage		, J	, J	, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , ,		, J	, v

3.1.34 - front- fro	nt - train co	ollision wit	th one pas	senger tra	in and one	e freight tra	ain carryin	g
dangerous goods								
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
///////////////////////////////////////	-							-
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
			· ·		·			
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
	5,00E+06	0	0	0	0	1,00E+07	0	0
	•		•	•		•	•	·
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities re	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
2 4 2E Sugar 6								
3.1.35 - front- from			-	-		e freight tra	ain carryin	g
dangerous goods	involving	acid and	resulting i	n medium	release	-	-	-
dangerous goods Fatalities pass	involving engers	acid and 0	resulting i 1	n medium 3	release 10	30	100	300
dangerous goods Fatalities pass Distribution-type	involving engers Poisson	acid and 0 100,00%	resulting i	n medium 3 0	release 10 0	30 0	100 0	300 0
dangerous goods Fatalities pass	involving engers	acid and 0	resulting i 1	n medium 3	release 10	30	100	300
dangerous goods Fatalities pass Distribution-type Average	involving engers Poisson 0	acid and 0 100,00% 0	resulting i 1 0 0	n medium 3 0 0	release 10 0 0	30 0	100 0 0	300 0 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp	involving engers Poisson 0 loyees	acid and 0 100,00% 0 0	resulting i 1 0 0	n medium 3 0 0 3	release 10 0 0 10	30 0 0 30	100 0 0 100	300 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type	involving engers Poisson 0	acid and 0 100,00% 0	resulting i 1 0 0	n medium 3 0 0	release 10 0 0	30 0	100 0 0	300 0 0 300
dangerous goods Fatalities pass Distribution-type Average Fatalities emp	involving engers Poisson 0 loyees Poisson	acid and 0 100,00% 0 0 100,00%	resulting i 1 0 0 1 0 1 0	n medium 3 0 0 3 0	release 10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	involving engers Poisson 0 loyees Poisson 0	acid and 0 100,00% 0 0 100,00%	resulting i 1 0 0 1 0 1 0	n medium 3 0 0 3 0	release 10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type	involving engers Poisson 0 loyees Poisson 0	acid and 0 100,00% 0 100,00% 0	resulting i 1 0 0 1 0 0 0	n medium 3 0 0 3 0 0 0	release 10 0 10 0 10 0 0 14	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	involving engers Poisson 0 loyees Poisson 0 n Poisson	acid and 0 100,00% 0 100,00% 0 0	resulting i 1 0 0 1 0 0 1 1	n medium 3 0 0 3 0 0 0 7	release 10 0 0 10 0 0 0	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type	involving engers Poisson 0 loyees Poisson 0 n Poisson	acid and 0 100,00% 0 100,00% 0 100,00% 0 4,98%	resulting i 1 0 0 1 0 0 1 14,94%	n medium 3 0 0 3 0 0 0 7 78,89%	release 10 0 10 10 0 0 0 14 1,19%	30 0 0 30 0 0 0 30 0,00%	100 0 0 100 0 0 180 0	300 0 0 300 0 0 0 365 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type	involving engers Poisson 0 loyees Poisson 0 n Poisson 3,00E+00	acid and 0 100,00% 0 100,00% 0 100,00% 0 4,98%	resulting i 1 0 0 1 0 0 1 14,94%	n medium 3 0 0 3 0 0 0 7 78,89%	release 10 0 10 10 0 0 0 14 1,19%	30 0 0 30 0 0 0 30 0,00%	100 0 0 100 0 0 180 0	300 0 0 300 0 0 365 0 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Average	involving engers Poisson 0 loyees Poisson 0 n Poisson 3,00E+00	acid and 0 100,00% 0 100,00% 0 100,00% 0 4,98% 0	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01	n medium 3 0 0 3 0 0 0 7 78,89% 5,52E+00	release 10 0 10 0 0 0 14 1,19% 1,67E-01	30 0 0 30 0 0 0 30 0,00% 2,01E-05	100 0 0 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	involving engers Poisson 0 Ioyees Poisson 0 n Poisson 3,00E+00	acid and 0 100,00% 0 100,00% 100,00% 4,98% 0 1,00E+03	resulting i 1 0 0 1 1 14,94% 1,49E-01 1,00E+04	n medium 3 0 0 3 0 0 0 7 78,89% 5,52E+00 1,00E+05	release 10 0 0 10 0 0 0 0 14 1,19% 1,67E-01	30 0 0 30 0 0 0 30 0,00% 2,01E-05 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	involving engers Poisson 0 loyees Poisson 0 n Poisson 3,00E+00	acid and 0 100,00% 0 100,00% 100,00% 4,98% 0 1,00E+03	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01 1,00E+04 0	n medium 3 0 0 3 0 0 7 78,89% 5,52E+00 1,00E+05 0	release 10 0 0 10 0 0 0 14 1,19% 1,67E-01 1,00E+06 0	30 0 0 30 0 0 0 30 0,00% 2,01E-05 1,00E+07 100,00%	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	involving engers Poisson 0 Ioyees Poisson 0 n Poisson 3,00E+00	acid and 0 100,00% 0 100,00% 100,00% 4,98% 0 1,00E+03	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01 1,00E+04 0	n medium 3 0 0 3 0 0 7 78,89% 5,52E+00 1,00E+05 0	release 10 0 0 10 0 0 0 14 1,19% 1,67E-01 1,00E+06 0	30 0 0 30 0 0 0 30 0,00% 2,01E-05 1,00E+07 100,00%	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving engers Poisson 0 Ioyees Poisson 0 n Poisson 3,00E+00	acid and 0 100,00% 0 100,00% 100,00% 0 4,98% 0 4,98% 0 1,00E+03 0 0	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01 1,00E+04 0 0 0	n medium 3 0 0 3 0 0 0 7 78,89% 5,52E+00 1,00E+05 0 0 0	release 10 0 0 0 10 0 10 10 0 1,10 1,19% 1,67E-01 1,00E+06 0 0 0	30 0 0 30 0 0 0 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving engers Poisson 0 Ioyees Poisson 0 n Poisson 3,00E+00 sts Poisson 5,00E+06	acid and 0 100,00% 0 100,00% 0 100,00% 0 4,98% 0 1,00E+03 0 0 0	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01 1,00E+04 0 0 0 1	n medium 3 0 0 3 0 0 7 78,89% 5,52E+00 1,00E+05 0 0 0 7	release 10 0 10 0 10 0 0 14 1,19% 1,67E-01 1,00E+06 0 0 0 14	30 0 0 30 0 0 0 0 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving engers Poisson 0 Ioyees Poisson 0 n Poisson 3,00E+00 sts Poisson 5,00E+06	acid and 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01 1,00E+04 0 0 0 1 23,88%	n medium 3 0 0 3 0 0 0 7 78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	release 10 0 10 10 0 10 0 10 0 14 1,67E-01 1,00E+06 0 0 14 0,00%	30 0 0 30 0 0 0 0 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving engers Poisson 0 Ioyees Poisson 0 3,00E+00 5,00E+06 5,00E+06 oad Poisson 3,33E-01	acid and 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01 1,00E+04 0 0 0 1 23,88%	n medium 3 0 0 3 0 0 0 7 78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46%	release 10 0 10 10 0 10 0 10 0 14 1,67E-01 1,00E+06 0 0 14 0,00%	30 0 0 30 0 0 0 0 30 0,00% 2,01E-05 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
dangerous goods Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving engers Poisson 0 Ioyees Poisson 0 3,00E+00 5,00E+06 5,00E+06 oad Poisson 3,33E-01	acid and 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 1,00E+03 0 0 0 1,00E+03 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	resulting i 1 0 0 1 0 0 1 14,94% 1,49E-01 1,49E-01 1,00E+04 0 0 0 1 23,88% 2,39E-01	n medium 3 0 0 3 0 0 7 78,89% 5,52E+00 1,00E+05 0 0 0 7 4,46% 3,12E-01	release 10 0 0 10 0 10 0 10 1,19% 1,67E-01 1,00E+06 0 0 0 14 0,00% 3,94E-08	30 0 0 30 0 0 0 0 0 0 0 30 2,01E-05 1,00E+07 100,00% 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

3.1.36 - front- fron			-	•		freight tra	ain carryin	g
dangerous goods		acid and	resulting i	n large re	ease			
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	4,98%	14,94%	78,89%	1,19%	0,00%	0	0
Average	3,00E+00	0	1,49E-01	5,52E+00	1,67E-01	2,01E-05	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

R/	AMBØLL
A	RUP
TE	C

12.10 Train collision involving dangerous goods

3.2.1 - front- front ammonia resultin								
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
	hee	0	1	3	10	30	100	300
Fatalities ro	Jau	-						
Fatalities ro Distribution-type	1	100,00%	0	0	0	0	0	0
Distribution-type Average	Poisson 0	100,00% 0	0	0	0	0	0	0
Distribution-type Average 3.2.2 - front- front ammonia resultin	Poisson 0 - train col ng in small	100,00% 0 Ilision with release	0 n two freig	0 ht trains ca	0 arrying dat	0 ngerous go	0 Dods invol	0 ving
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass	Poisson 0 - train col ng in small engers	100,00% 0 Illision with release 0	0 n two freig 1	0 ht trains ca 3	0 arrying dar 10	0 ngerous go 30	0 Dods invol	0 ving 300
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type	Poisson 0 - train col ing in small engers Poisson	100,00% 0 Ilision with release 0 100,00%	0 n two freig 1 0	0 ht trains ca 3 0	0 arrying dar 10 0	0 ngerous go 30 0	0 Dods invol 100 0	0 ving 300 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass	Poisson 0 - train col ing in small engers Poisson	100,00% 0 Illision with release 0	0 n two freig 1	0 ht trains ca 3	0 arrying dar 10	0 ngerous go 30	0 Dods invol	0 ving 300
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average	Poisson 0 - train col ing in small engers Poisson 0	100,00% 0 Ilision with release 0 100,00% 0	0 1 two freig 1 0 0	0 ht trains ca 3 0 0	0 arrying dat 10 0 0	0 ngerous go 30 0 0	0 Dods invol 100 0 0	0 ving 300 0 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 - train col ig in small engers Poisson 0 loyees	100,00% 0 Ilision with release 0 100,00% 0	0 n two freig 1 0 0	0 ht trains ca 3 0 0 3	0 arrying dar 10 0 0	0 ngerous go 30 0 0 30	0 0 0 0 0 100 100	0 ving 300 0 0 300
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 - train col in small engers Poisson 0 loyees Poisson	100,00% 0 Ilision with release 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0	0 ht trains ca 3 0 0 3 0	0 arrying dar 10 0 0 10 0	0 ngerous go 30 0 0 30 0	0 0 0 0 0 0 100 0 0 0	0 ving 300 0 0 300 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 - train col ig in small engers Poisson 0 loyees	100,00% 0 Ilision with release 0 100,00% 0	0 n two freig 1 0 0	0 ht trains ca 3 0 0 3	0 arrying dar 10 0 0	0 ngerous go 30 0 0 30	0 0 0 0 0 100 100	0 ving 300 0 0 300
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0	100,00% 0 Illision with release 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0	0 ht trains ca 3 0 0 3 0	0 arrying dar 10 0 0 10 0	0 ngerous go 30 0 0 30 0	0 0 0 0 0 0 100 0 0 0	0 ving 300 0 0 300 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ing in small engers Poisson 0 loyees Poisson 0	100,00% 0 Ilision with release 0 100,00% 0 100,00% 0	0 1 two freig 1 0 0 1 0 0	0 ht trains ca 3 0 0 3 0 0	0 arrying dar 10 0 0 10 0 0	0 ngerous go 30 0 0 30 0 30	0 0 0 100 0 100 0 0 180	0 ving 300 0 0 300 0 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson	100,00% 0 Ilision with release 0 100,00% 0 100,00% 0	0 1 two freig 1 0 0 1 0 0 1 1	0 ht trains ca 3 0 0 3 0 0 7	0 arrying dar 10 0 0 10 0 0	0 ngerous go 0 0 30 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 0 365
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson	100,00% 0 0 llision with release 0 100,00% 0 100,00% 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0	0 ht trains ca 3 0 0 3 0 0 7 0	0 arrying dar 10 0 0 10 0 0 14 0,00%	0 ngerous go 0 0 0 30 0 0 30 0 0,36%	0 0 0 0 0 0 0 0 0 0 100 0 0 180 99,64%	0 ving 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 - train col ing in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	100,00% 0 0 llision with release 0 100,00% 0 100,00% 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 0	0 ht trains ca 3 0 0 3 0 0 7 0	0 arrying dar 10 0 0 10 0 10 0 10 0 10 0 10 1	0 ngerous go 0 0 0 30 0 0 30 0 0,36%	0 0 0 0 0 0 0 0 0 0 100 0 0 180 99,64%	0 ving 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts	100,00% 0 Ilision with release 0 100,00% 0 100,00% 0 0 0 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0	0 arrying dar 10 0 0 10 0 10 0 10 0 10 0 10 1	0 ngerous go 30 0 0 30 0 0 30 0 30 0,36% 1,09E-01	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02	0 ving 300 0 0 300 0 0 365 0 0 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson	100,00% 0 0 llision with release 0 100,00% 0 100,00% 0 0 0 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05	0 arrying dar 10 0 0 10 0 10 0 0 10 0 0 10 0 10 0 10 1	0 ngerous go 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 1,09E-01	0 0 100 0 0 100 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08	0 ving 300 0 0 300 0 0 365 0 0 0 365
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Average	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	0 arrying dar 10 0 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00%	0 0 100 0 0 0 100 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 1,00E+09
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	0 arrying dar 10 0 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00%	0 0 100 0 0 0 100 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 1,00E+09
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06	100,00% 0 0 Ilision with release 0 100,00% 0 100,00% 0 0 0 0 100,00% 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1,00E+04 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0	0 arrying dar 10 0 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0 0	0 ving 300 0 0 300 0 0 0 365 0 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1 1 0 1 0 1 0 1 0 1 0 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	0 arrying dar 10 0 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0	0 ngerous go 30 0 0 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 0 0 0 0 365
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ig in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 100,00%	0 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 0 1,00E+05 0 0 0 7 6,61%	0 arrying dar 10 0 0 10 0 0 10 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 14 0,00%	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 0 100 0 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0	0 ving 300 0 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col g in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 100,00%	0 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 0 1,00E+05 0 0 0 7 6,61%	0 arrying dar 10 0 0 10 0 0 10 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 14 0,00%	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 0 100 0 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0	0 ving 300 0 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.2.2 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col g in small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	100,00% 0 0 100,00% 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 0 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1,00E+04 0 0 1,00E+04 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 0 1,00E+04 0 0 0 0 1,00E+04 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 1,00E+05 0 0 0 7 6,61% 4,63E-01	0 arrying dar 10 0 0 10 0 10 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 1,10E-07 1,00E+06 0 0 1,10E-07	0 ngerous go 30 0 0 30 0 0 30 0 0 0 30 0 0 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0	0 ving 300 0 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365

3.2.3 - front-front ammonia resultir			0					
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	60,65%	30,33%	8,85%	0,18%	0	0	0
Average	0,5	0	3,03E-01	2,65E-01	1,75E-02	0	0	0
			l	I		I		
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0,00%	0,36%	99,64%	0
Average	4,80E+01	0	0	0	1,10E-07	1,09E-01	1,79E+02	0
Repair co	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities r	bec	0	1	3	10	30	100	300
ratanties f	Jau							
Distribution-type	1	100,00%	0	0	0	0	0	0
Distribution-type Average	Poisson 0	0	0	0	0	0	0	0
Distribution-type Average 3.2.4 - front- front ammonia resultir	Poisson 0 - train col ng in large	0 Ilision with release	0 n two freig	0 ht trains ca	0 arrying dat	0 ngerous go	0 Dods invol	0 ving
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass	Poisson 0 - train col ng in large engers	0 Ilision with release 0	0 n two freig 1	0 ht trains ca 3	0 arrying dar 10	0 ngerous go 30	0 pods invol 100	0 ving 300
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type	Poisson 0 - train col ng in large engers Poisson	0 Ilision with release 0 100,00%	0 n two freig 1 0	0 ht trains ca 3 0	0 arrying dat 10 0	0 ngerous go 30 0	0 Dods invol 100 0	0 ving 300 0
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass	Poisson 0 - train col ng in large engers Poisson	0 Ilision with release 0	0 n two freig 1	0 ht trains ca 3	0 arrying dar 10	0 ngerous go 30	0 pods invol 100	0 ving 300
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average	Poisson 0 - train col ing in large engers Poisson 0	0 Ilision with release 0 100,00% 0	0 1 two freig 1 0 0	0 ht trains ca 3 0 0	0 arrying dar 10 0 0	0 ngerous go 30 0 0	0 bods invol 100 0 0	0 ving 300 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 - train col ig in large engers Poisson 0 loyees	0 Ilision with release 0 100,00% 0	0 n two freig 1 0 0	0 ht trains ca 3 0 0 3	0 arrying dar 10 0 0	0 ngerous go 30 0 0 30	0 0 0 0 0 100 100	0 ving 300 0 0 300
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 - train col in large engers Poisson 0 loyees Poisson	0 Ilision with release 0 100,00% 0 47,24%	0 1 two freig 1 0 0 1 35,43%	0 ht trains ca 3 0 0 0 3 16,61%	0 arrying dar 10 0 0 10 0,73%	0 ngerous go 30 0 0 30 0	0 0 0 0 0 0 100 0 0 0	0 ving 300 0 0 300 0
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 - train col in large engers Poisson 0 loyees Poisson	0 Ilision with release 0 100,00% 0	0 n two freig 1 0 0	0 ht trains ca 3 0 0 3	0 arrying dar 10 0 0	0 ngerous go 30 0 0 30	0 0 0 0 0 100 100	0 ving 300 0 0 300
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75	0 Ilision with release 0 100,00% 0 47,24%	0 1 two freig 1 0 0 1 35,43%	0 ht trains ca 3 0 0 0 3 16,61%	0 arrying dar 10 0 0 10 0,73%	0 ngerous go 30 0 0 30 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ing in large engers Poisson 0 loyees Poisson 0,75	0 Ilision with release 0 100,00% 0 47,24% 0	0 two freig 1 0 0 1 35,43% 3,54E-01	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01	0 arrying dar 10 0 0 10 0,73% 7,29E-02 14	0 ngerous go 30 0 0 1,60E-08 30	0 0 0 100 0 100 0 100 0 180	0 ving 300 0 0 300 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 - train col ing in large engers Poisson 0 loyees Poisson 0,75 n Poisson	0 Ilision with release 0 100,00% 0 47,24% 0 0 0	0 1 two freig 1 0 0 1 35,43% 3,54E-01 1	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7	0 arrying dar 10 0 0 10 0,73% 7,29E-02	0 ngerous go 30 0 0 30 0 1,60E-08	0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 0 365
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ing in large engers Poisson 0 loyees Poisson 0,75 n Poisson	0 Ilision with release 0 100,00% 0 47,24% 0 0 0 0 0 0 0	0 1 two freig 1 0 0 1 35,43% 3,54E-01 1 0	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0	0 arrying dar 10 0 0 10 0,73% 7,29E-02 14 0,00%	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36%	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 - train col ing in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01	0 Ilision with release 0 100,00% 0 47,24% 0 0 0 0 0 0 0	0 1 two freig 1 0 0 1 35,43% 3,54E-01 1 0 0	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0	0 arrying dar 10 0 0 10 0,73% 7,29E-02 14 0,00%	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36%	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts	0 Ilision with release 0 100,00% 0 47,24% 0 0 0 0 0 0 0	0 1 two freig 1 0 0 1 35,43% 3,54E-01 1 0 0	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0	0 arrying dar 10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01	0 0 100 0 0 100 0 0 180 99,64% 1,79E+02	0 ving 300 0 0 300 0 0 365 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson	0 llision with release 0 100,00% 0 47,24% 0 0 0 0 0 1,00E+03	0 1 two freig 1 0 0 0 1 35,43% 3,54E-01 1 0 0 0 1,00E+04	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0	0 arrying dar 10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07	0 0 100 0 0 100 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08	0 ving 300 0 0 300 0 365 0 0 0 365 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts	0 Ilision with release 0 100,00% 0 47,24% 0 0 0 0 0 1,00E+03 0	0 1 two freig 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05 0	0 arrying dat 10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00%	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 1,00E+09
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06	0 Ilision with release 0 100,00% 0 47,24% 0 0 0 0 0 1,00E+03 0	0 1 two freig 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05 0	0 arrying dat 10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00%	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultir Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06	0 Ilision with release 0 100,00% 0 47,24% 0 0 0 0 0 1,00E+03 0 0 0	0 1 two freig 1 0 0 0 1 35,43% 3,54E-01 1 0 0 0 1,00E+04 0 0	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0	0 arrying dan 10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 0	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0 0	0 ving 300 0 0 300 0 0 365 0 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	0 llision with release 0 100,00% 0 47,24% 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 two freig 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0 0 1	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0 0	0 arrying dat 10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 0 0 0 0 365
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col ig in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	0 Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 1,00E+03 0 0 0 1,00E+03 0 0 0 0	0 1 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1 27,47%	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0 0 7 6,61%	0 arrying dar 10 0 0 0 10 0 0 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 14 0,00%	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 0 100 0 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0	0 ving 300 0 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col g in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	0 Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 1,00E+03 0 0 0 1,00E+03 0 0 0 0	0 1 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1 27,47%	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0 0 7 6,61%	0 arrying dar 10 0 0 0 10 0 0 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 14 0,00%	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 0 100 0 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0	0 ving 300 0 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.2.4 - front- front ammonia resultin Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col g in large engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	0 Ilision with release 0 100,00% 0 47,24% 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1,27,47% 2,75E-01	0 ht trains ca 3 0 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0 0 7 6,61% 4,63E-01	0 arrying dar 10 0 0 10 0 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00% 2,18E-07	0 ngerous go 30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0 0 0 0	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0	0 ving 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365

3.2.5 - front-front chlorine resulting			i the holy					
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
			1					
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
— ,	had	0	1	3	10	30	100	300
Fatalities re	Juu	•						
Fatalities ro Distribution-type	1	100,00%	0	0	0	0	0	0
	Poisson	100,00% 0	0 0	0 0	0	0	0	0
Distribution-type Average	Poisson 0	0	0	0	0	0	0	0
Distribution-type	Poisson 0 - train col	0 Ilision with	0	0	0	0	0	0
Distribution-type Average 3.2.6 - front- front	Poisson 0 - train col g in small r	0 Ilision with	0	0	0	0	0	0
Distribution-type Average 3.2.6 - front- front chlorine resulting	Poisson 0 - train col g in small r engers	0 Ilision with elease	0 n two freig	0 ht trains ca	0 arrying dat	0 ngerous go	0 Dods invol	0 ving
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass	Poisson 0 - train col in small r engers Poisson	0 Ilision with release 0	0 n two freig 1	0 ht trains ca 3	0 arrying dar 10	0 ngerous go 30	0 pods invol 100	0 ving 300
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type	Poisson 0 - train col in small r engers Poisson	0 Ilision with release 0 100,00%	0 n two freig 1 0	0 ht trains ca 3 0	0 arrying dat 10 0	0 ngerous go 30 0	0 Dods invol 100 0	0 ving 300 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type	Poisson 0 - train col in small r engers Poisson 0	0 Ilision with release 0 100,00%	0 n two freig 1 0	0 ht trains ca 3 0	0 arrying dat 10 0	0 ngerous go 30 0	0 Dods invol 100 0	0 ving 300 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees	0 Ilision with release 0 100,00% 0	0 1 two freig 1 0 0	0 ht trains ca 3 0 0	0 arrying dar 10 0 0	0 ngerous go 30 0 0	0 bods invol 100 0 0	0 ving 300 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson	0 Ilision with release 0 100,00% 0	0 n two freig 1 0 0	0 ht trains ca 3 0 0 3	0 arrying dar 10 0 0	0 ngerous go 30 0 0 30	0 0 0 0 0 100 100	0 ving 300 0 0 300
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson	0 Ilision with release 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0	0 ht trains ca 3 0 0 3 0	0 arrying dar 10 0 0 10 0	0 ngerous go 30 0 0 30 0	0 0 0 0 0 0 100 0 0 0	0 ving 300 0 0 300 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0	0 Ilision with release 0 100,00% 0 100,00%	0 1 two freig 1 0 0 1 0	0 ht trains ca 3 0 0 3 0	0 arrying dar 10 0 0 10 0	0 ngerous go 30 0 0 30 0	0 0 0 0 0 0 100 0 0 0	0 ving 300 0 0 300 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 n	0 Ilision with release 0 100,00% 0 100,00% 0	0 1 two freig 1 0 0 1 0 0	0 ht trains ca 3 0 0 3 0 0	0 arrying dar 10 0 0 10 0 0	0 ngerous go 0 0 30 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 n Poisson	0 Ilision with elease 0 100,00% 0 100,00% 0	0 1 two freig 1 0 0 1 0 0 1 1	0 ht trains ca 3 0 0 3 0 0 7	0 arrying dar 10 0 0 10 0 0	0 ngerous go 30 0 0 30 0 30	0 0 0 100 0 100 0 100 0 180	0 ving 300 0 0 300 0 0 365
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	0 Ilision with elease 0 100,00% 0 100,00% 0 0 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0	0 arrying dar 10 0 0 10 0 10 0 10 0 10 0 10 0 10 1	0 ngerous go 30 0 0 30 0 0 30 0 30 0,36% 1,09E-01	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02	0 ving 300 0 0 300 0 0 365 0 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	0 Ilision with elease 0 100,00% 0 100,00% 0 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 0	0 ht trains ca 3 0 0 3 0 0 7 0	0 arrying dar 10 0 0 10 0 0 14 0,00%	0 ngerous go 30 0 0 30 0 0 30 0 0 0 30 0 0 1,09E-01 1,00E+07	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson	0 Ilision with elease 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0	0 1 two freig 1 0 0 1 0 0 1 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0	0 arrying dar 10 0 0 10 0 10 0 10 0 10 0 10 0 10 1	0 ngerous go 30 0 0 30 0 0 30 0 30 0,36% 1,09E-01	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02	0 ving 300 0 0 300 0 0 365 0 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts	0 Ilision with elease 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05	0 arrying dar 10 0 0 10 0 10 0 0 10 0 10 0 10 0 10 1	0 ngerous go 30 0 0 30 0 0 30 0 0 0 30 0 0 1,09E-01 1,00E+07	0 0 100 0 0 100 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08	0 ving 300 0 0 300 0 365 0 0 0 365
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col 9 in small r engers Poisson 0 loyees Poisson 0 r Poisson 4,80E+01 sts Poisson 5,00E+06	0 Ilision with release 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0	0 arrying dat 10 0 0 10 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 1,00E+09
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 - train col 9 in small r engers Poisson 0 loyees Poisson 0 r Poisson 4,80E+01 sts Poisson 5,00E+06	0 Ilision with elease 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	0 arrying dat 10 0 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00%	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 1,00E+09
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col 9 in small r engers Poisson 0 loyees Poisson 0 r Poisson 4,80E+01 sts Poisson 5,00E+06	0 Ilision with release 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 1 0 0 1,00E+04 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0	0 arrying dat 10 0 0 10 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	0 0 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0 0	0 ving 300 0 0 300 0 0 365 0 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 r Poisson 4,80E+01 sts Poisson 5,00E+06 road Poisson	0 Ilision with elease 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0	0 1 two freig 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1 1 0 1 0 1 0 1 0 1 0 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	0 arrying dat 10 0 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0	0 ngerous go 30 0 0 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180	0 ving 300 0 0 300 0 365 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 r Poisson 4,80E+01 sts Poisson 5,00E+06 road Poisson	0 Ilision with elease 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 7 0 0 0 7 7 0 0 0 7 7 0 0 0 7 7 0 0 7 7 0 0 0 7 7 0 0 0 0 7 7 7 7 7 9 7 7 7 7	0 arrying dar 10 0 0 10 0 10 0 10 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 1,10E-07	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0 1,79E+02 1,00E+08 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 r Poisson 4,80E+01 sts Poisson 5,00E+06 Poisson 4,17E-01	0 Ilision with elease 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 7 0 0 0 7 7 0 0 0 7 7 0 0 0 7 7 0 0 7 7 0 0 0 7 7 0 0 0 0 7 7 7 7 7 9 7 7 7 7	0 arrying dar 10 0 0 10 0 10 0 10 0 10 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 1,10E-07	0 ngerous go 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0 1,79E+02 1,00E+08 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ving 300 0 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.2.6 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col in small r engers Poisson 0 loyees Poisson 0 r Poisson 4,80E+01 sts Poisson 5,00E+06 Poisson 4,17E-01	0 Ilision with elease 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 0 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1,00E+04 0 0 1,00E+04 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 0 1,00E+04 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0 0 0 7 0 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 7 0 0 0 0 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 arrying dan 10 0 0 10 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 1,10E-07 1,00E+06 0 0 1,10E-07	0 ngerous go 30 0 0 30 0 0 30 0 0 0 30 0 0 1,09E-01 1,09E-01 1,09E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0	0 ving 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 365

chlorine resulting			n two freig	ht trains ca	arrying da	ngerous go	oods invol	ving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
Average	•	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	60,65%	30,33%	8,85%	0,18%	0	0	0
Average	0,5	0	3,03E-01	2,65E-01	1,75E-02	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0,00%	0,36%	99,64%	0
Average	4,80E+01	0	0	0	1,10E-07	1,09E-01	1,79E+02	0
Repair co	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
								-
Fatalities r	oad	0	1	3	10	30	100	300
Distantic set - 1	Poisson	100,00%	0	0	0	0	0	0
Distribution-type	1 0133011							
Distribution-type Average	0	0	0	0	0	0	0	0
Average 3.2.8 - front- front chlorine resulting	0 - train co j in large r	llision with release	n two freig	ht trains ca	arrying da	ngerous go	oods invol	ving
Average 3.2.8 - front- front chlorine resulting Fatalities pass	0 - train co g in large r engers	llision with release 0	n two freig 1	ht trains ca 3	arrying dar 10	ngerous go 30	oods invol 100	ving 300
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type	0 - train co g in large r engers Poisson	llision with release 0 100,00%	n two freig 1 0	ht trains ca 3 0	arrying dat	ngerous go 30 0	oods invol 100 0	ving 300 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass	0 - train co g in large r engers Poisson	llision with release 0	n two freig 1	ht trains ca 3	arrying dar 10	ngerous go 30	oods invol 100	ving 300
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average	0 - train co j in large r engers Poisson 0	llision with release 0 100,00%	n two freig 1 0	ht trains ca 3 0	arrying da 10 0 0	30 0 0	0005 invol 100 0 0	300 0 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp	0 - train co j in large r engers Poisson 0 loyees	llision with release 0 100,00% 0	n two freig 1 0 0	ht trains ca 3 0 0 3	arrying dat 10 0 10 10	ngerous go 30 0	oods invol 100 0	ving 300 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 - train co in large r engers Poisson 0 loyees Poisson	llision with release 0 100,00% 0	1 0 0 1	ht trains ca 3 0 0	arrying da 10 0 0	30 0 0 30 0 30	00005 invol 100 0 0 100	300 0 0 300
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp	0 - train co in large r engers Poisson 0 loyees Poisson	Ilision with elease 0 100,00% 0 0 47,24%	1 0 0 1 35,43%	ht trains ca 3 0 0 3 16,61%	arrying da 10 0 0 10 0,73%	30 0 0 30	00005 invol 0 0 100 0	300 0 0 300 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 - train co in large r engers Poisson 0 loyees Poisson 0,75	Ilision with elease 0 100,00% 0 0 47,24%	1 0 0 1 35,43%	ht trains ca 3 0 0 3 16,61%	arrying da 10 0 0 10 0,73%	30 0 0 30 0 30	00005 invol 0 0 100 0	300 0 0 300 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n	Ilision with elease 0 100,00% 0 47,24% 0	1 0 0 1 35,43% 3,54E-01	ht trains ca 3 0 0 0 3 16,61% 4,98E-01	10 0 0 10 0,73% 7,29E-02	30 0 0 30 0 1,60E-08	100 0 0 100 0 0 0	300 0 0 300 0 0 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	0 - train co g in large r engers Poisson 0 loyees Poisson 0,75 n Poisson	Ilision with release 0 100,00% 0 47,24% 0	1 0 0 1 35,43% 3,54E-01 1	ht trains ca 3 0 0 3 16,61% 4,98E-01 7	arrying dat 10 0 0 10 0,73% 7,29E-02 14	30 0 0 30 0 1,60E-08 30	0005 invol 0 0 100 0 0 180	300 0 0 300 0 0 0 365
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	0 - train co g in large r engers Poisson 0 loyees Poisson 0,75 n Poisson	Ilision with release 0 100,00% 0 47,24% 0 0	1 0 0 1 35,43% 3,54E-01 1 0	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0	10 0 0 10 0,73% 7,29E-02 14 0,00%	30 0 0 30 0 1,60E-08 30 0,36%	0005 invol 0 0 0 100 0 0 180 99,64%	300 0 0 0 300 0 0 0 365 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01	Ilision with release 0 100,00% 0 47,24% 0 0	1 0 0 1 35,43% 3,54E-01 1 0	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0	10 0 0 10 0,73% 7,29E-02 14 0,00%	30 0 0 30 0 1,60E-08 30 0,36%	0005 invol 0 0 0 100 0 0 180 99,64%	300 0 0 0 300 0 0 0 365 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts	Ilision with release 0 100,00% 0 47,24% 0 0 0 0	1 0 0 1 35,43% 3,54E-01 1 0 0	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0 0 0	10 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07	30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01	Doods invol 100 0 0 0 100 0 0 0 100 0 0 99,64% 1,79E+02 0	300 0 0 0 300 0 0 0 365 0 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair co	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson	Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 1,00E+03 0	1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0 0 0 1,00E+05	10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06	30 0 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07	100 0 0 0 0 0 100 0 100 0 100 0 100 0 100 0 1,79E+02 1,00E+08	300 0 0 0 300 0 0 0 365 0 0 0 1,00E+09
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Composition-type Composi	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson	Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 1,00E+03 0	1 0 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0 0 1,00E+05 0	10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0	30 0 0 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00%	Doods invol 100 0 0 0 100 0 0 0 100 0 0 0 100 0 0 0 1,79E+02 1,79E+08 0 0	ving 300 0 0 300 0 0 365 0 0 0 1,00E+09 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Composition-type Composi	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06	Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 1,00E+03 0	1 0 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0 0 1,00E+05 0	10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0	30 0 0 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00%	Doods invol 100 0 0 0 100 0 0 0 100 0 0 0 100 0 0 0 1,79E+02 1,79E+08 0 0	ving 300 0 0 300 0 365 0 0 1,00E+09 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad	Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 1,00E+03 0 0	1 0 0 0 1 35,43% 3,54E-01 1 0 0 0 1,00E+04 0 0	ht trains ca 3 0 0 0 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0	10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0	30 0 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	100 0 0 0 0 0 0 100 0 100 0 100 0 0 1,79E+02 1,00E+08 0 0	300 0 0 0 0 0 0 0 0 365 0 0 0 365 0 0 0 1,00E+09 0 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Aver	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 1,00E+03 0 0	1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0 0	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0 0 1,00E+05 0 0 7	arrying dat 10 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 0 14	30 0 0 30 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30	200ds invol 100 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0 0 180	ving 300 0 0 300 0 365 0 0 1,00E+09 0 0 365
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	Ilision with elease 0 100,00% 0 47,24% 0 47,24% 0 0 47,24% 0 0 1,00E+03 0 0 0 0 0 0 0 0	1 two freig 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0 0 1 27,47%	ht trains ca 3 0 0 0 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0 0 7 6,61%	10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 0	30 0 0 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 0 0 0 0 100 0 0 0 100 0 0 1,79E+02 1,00E+08 0 0 0	ving 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	Ilision with elease 0 100,00% 0 47,24% 0 47,24% 0 0 47,24% 0 0 1,00E+03 0 0 0 0 0 0 0 0	1 two freig 1 0 0 1 35,43% 3,54E-01 1 0 0 1,00E+04 0 0 1 27,47%	ht trains ca 3 0 0 0 16,61% 4,98E-01 7 0 0 0 1,00E+05 0 0 0 7 6,61%	10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 0	30 0 0 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 0 0 0 0 100 0 0 0 100 0 0 1,79E+02 1,00E+08 0 0 0	ving 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average 3.2.8 - front- front chlorine resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co in large r engers Poisson 0 loyees Poisson 0,75 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	Ilision with release 0 100,00% 0 47,24% 0 47,24% 0 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0	1 0 0 0 1 35,43% 3,54E-01 1 0 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 27,47% 2,75E-01	ht trains ca 3 0 0 3 16,61% 4,98E-01 7 0 0 1,00E+05 0 0 1,00E+05 0 0 1,00E+05 0 0 1,00E+05 0 0	10 0 0 0 10 0,73% 7,29E-02 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00% 2,18E-07	30 0 0 0 1,60E-08 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0 0	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1,79E+02 1,00E+08 0 0 0 0 0 0 0 0 0 0 0 0 0	ving 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

3.2.9 - front-front flammable resulti			entane					
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
-								
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair co	r	1,00E+03	1,00E+04	1,00E+05	1,00E+06		1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
		-		_				
Disruption r	I	0	1	7	14	30	180	365
Distribution-type		65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
		•	1	•	40		400	000
				3	10	30	100	300
Fatalities re	[0	-				-	0
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
	[-	-			0	0	0
Distribution-type Average 3.2.10 - front- fron flammable resulti	Poisson 0 t - train co ng in smal	100,00% 0 ollision wit	0 0 th two frei and no ig	0 0 ght trains o nition	0 0 carrying da	0 angerous ç	0 goods invo	0 Diving
Distribution-type Average 3.2.10 - front- fron flammable resulti Fatalities pass	Poisson 0 t - train co ng in smal engers	100,00% 0 ollision wit I release 0	0 0 th two frei and no ig 1	0 0 ght trains o nition 3	0 0 carrying da	0 angerous (30	0 goods invo 100	0 Diving 300
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type	Poisson 0 It - train cong in smal engers Poisson	100,00% 0 0 0 0 0 1 release 0 100,00%	0 0 th two frei and no ig 1 0	0 0 ght trains o nition 3 0	0 0 carrying da 10 0	0 angerous <u>(</u> 30 0	0 goods invo 100 0	0 Diving 300 0
Distribution-type Average 3.2.10 - front- fron flammable resulti Fatalities pass	Poisson 0 t - train co ng in smal engers	100,00% 0 ollision wit I release 0	0 0 th two frei and no ig 1	0 0 ght trains o nition 3	0 0 carrying da	0 angerous (30	0 goods invo 100	0 Diving 300
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average	Poisson 0 It - train cong in smal engers Poisson 0	100,00% 0 0 0 0 0 1 0 0 0 0 0	0 0 th two frei and no ig 1 0 0	0 0 ght trains o nition 3 0 0	0 0 carrying da 10 0 0	0 angerous (30 0 0	0 goods invo 100 0 0	0 olving 300 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 tt - train cong in smal engers Poisson 0 loyees	100,00% 0 0 0 0 0 100,00% 0 0	0 0 th two freig and no ig 1 0 0	0 0 ght trains o nition 3 0 0 0	0 0 carrying da 10 0 0	0 angerous (30 0 0 30	0 goods invo 100 0 100	0 olving 300 0 0 300
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 It - train cong in smal engers Poisson 0 Ioyees Poisson	100,00% 0 0 0 0 0 100,00% 0 100,00%	0 0 th two frei and no ig 1 0 0 1	0 0 ght trains o nition 3 0 0 3 0	0 0 carrying da 10 0 0 10 0	0 angerous (30 0 0 30 0	0 goods invo 100 0 0 100 0	0 olving 300 0 300 0 300 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 tt - train cong in smal engers Poisson 0 loyees	100,00% 0 0 0 0 0 100,00% 0 0	0 0 th two freig and no ig 1 0 0	0 0 ght trains o nition 3 0 0 0	0 0 carrying da 10 0 0	0 angerous (30 0 0 30	0 goods invo 100 0 100	0 olving 300 0 0 300
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 tt - train cong in smal engers Poisson 0 loyees Poisson 0	100,00% 0 0 0 0 100,00% 0 100,00% 0	0 0 th two freig and no ig 1 0 0 0	0 0 ght trains o nition 3 0 0 0	0 0 2 arrying da 10 0 0 10 0 0	0 angerous (30 0 0 30 0 0	0 300ds invo 100 0 100 0 0 0	0 olving 300 0 300 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 it - train cong in smal engers Poisson 0 loyees Poisson 0	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 0 0 0	0 0 th two frei and no ig 1 0 0 1 0	0 0 ght trains o nition 3 0 0 0 3 0 0 7	0 0 carrying da 10 0 0 10 0 14	0 angerous (30 0 0 30 0 30	0 goods invo 100 0 100 0 180	0 olving 300 0 300 0 300 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 tt - train cong in smal engers Poisson 0 loyees Poisson 0 n Poisson	100,00% 0 0 0 0 100,00% 0 100,00% 0	0 0 th two freig and no ig 1 0 0 1 0	0 0 ght trains o nition 3 0 0 0	0 0 carrying da 10 0 0 10 0 10 0 14 0,00%	0 angerous (30 0 0 30 0 0 30 0 0,36%	0 joods invo 100 0 100 0 100 0 180 99,64%	0 olving 300 0 0 300 0 0 365
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 tt - train cong in smal engers Poisson 0 loyees Poisson 0 n Poisson	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 0 0 0 0	0 0 th two frei and no ig 1 0 0 1 0 0	0 0 ght trains o nition 3 0 0 0 3 0 0 7 0	0 0 carrying da 10 0 0 10 0 14	0 angerous (30 0 0 30 0 30	0 goods invo 100 0 100 0 180	0 olving 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 tt - train cong in smal engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 0 0 0 0	0 0 th two frei and no ig 1 0 0 1 0 0	0 0 ght trains o nition 3 0 0 0 3 0 0 7 0	0 0 carrying da 10 0 0 10 0 10 0 14 0,00%	0 angerous (30 0 0 30 0 0 30 0 0,36%	0 joods invo 100 0 100 0 100 0 180 99,64%	0 olving 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 tt - train cong in smal engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 1 0 0 1 0 0	0 0 ght trains o nition 3 0 0 0 3 0 0 0 7 0 0	0 0 carrying da 10 0 0 0 10 0 0 10 0 0 110 0 0 110 0 0 110 0 0	0 angerous (30 0 0 30 0 30 0,36% 1,09E-01	0 100 0 0 0 100 0 0 180 99,64% 1,79E+02	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	Poisson 0 It - train conditions ng in smaller Poisson 0 Ioyees Poisson 0 Ioyees Poisson 4,80E+01 sts Poisson	100,00% 0 0 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 th two freig and no ig 1 0 0 0 1 0 0 1 0 0 1,00E+04	0 0 ght trains on nition 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05	0 0 2 arrying da 10 0 0 0 10 0 0 10 0 0 10 0 0 10 0 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 1	0 angerous (30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 1,09E-01	0 0 100 0 0 0 100 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08	0 olving 300 0 0 300 0 365 0 0 0 1,00E+09
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Bistribution-type Average	Poisson 0 It - train conditions ng in smaller Poisson 0 Ioyees Poisson 0 Ioyees Poisson 4,80E+01 sts Poisson	100,00% 0 0 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig and no ig 1 0 0 0 1 0 1 0 0 1,00E+04 0	0 0 ght trains on nition 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	0 0 0 2arrying da 10 0 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0	0 angerous (30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00%	0 0 100 0 0 0 100 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Bistribution-type Average	Poisson 0 t - train conditions n small engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06	100,00% 0 0 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig and no ig 1 0 0 0 1 0 1 0 0 1,00E+04 0	0 0 ght trains on nition 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	0 0 0 2arrying da 10 0 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0	0 angerous (30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00%	0 0 100 0 0 0 100 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 It - train conditions ng in smaller Poisson 0 Ioyees Poisson 0 Ioyees Poisson 4,80E+01 sts Poisson 5,00E+06 oad	100,00% 0 0 0 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 1 0 0 1 0 0 1,00E+04 0 0	0 0 0 inition 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0	0 0 0 2 arrying da 0 0 0 0 10 0 0 0 10 0 0 10 0 0 10 0 0 11 0 0 0 10 0 0 0 10 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 angerous g 30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	0 0 100 0 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train conditions n smallengers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 0 0 0 1 0 0 1 0 0 1,00E+04 0 0 0	0 0 ght trains on nition 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	0 0 0 2arrying da 10 0 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0	0 angerous (30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train conditions n smallengers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson	100,00% 0 0 0 0 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig and no ig 1 0 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 0 0	0 0 0 ght trains on nition 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%	0 0 0 2 arrying da 10 0 0 0 10 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00%	0 angerous (30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 0 100 0 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 it - train con in smal engers Poisson 0 loyees Poisson 0 loyees Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	100,00% 0 0 0 0 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig and no ig 1 0 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 0 0	0 0 0 ght trains on nition 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%	0 0 0 2 arrying da 10 0 0 0 10 0 0 10 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00%	0 angerous (30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	0 0 100 0 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.10 - front- from flammable resulti Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 it - train con in smal engers Poisson 0 loyees Poisson 0 loyees Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	100,00% 0 0 0 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig and no ig 1 0 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0	0 0 0 intion 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 1,00E+05 0 0 0 1,00E+05 0 0	0 0 0 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 angerous (30 0 0 30 0 0 30 0 0 0 30 0 0 1,09E-01 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 100 0 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

3.2.11 - front-fron flammable resulti					carrying da	angerous g	goods invo	olving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
		-	-	_				
Disruption r		0	1	7	14	30	180	365
Distribution-type		65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
		•		•	40		400	
Fatalities re		0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
	2,15E+02	0	0	0	0	0	0	3,00E+02
3.2.13 - front-fron flammable resulti				-	carrying da	angerous g	joods Invo	olving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
0								
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r		0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities re		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

3.2.14 - front- front release resulting						ngerous g	oodshepta	ne
Fatalities pass			1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
///////////////////////////////////////				•	•	•		
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos			1,00E+04	1,00E+05			1,00E+08	
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
				_				
Disruption r		0	1	7	14	30	180	365
Distribution-type		65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
		•					100	
Fatalities re		0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
v	2,15E+02	0	0	0	0	0	0	3,00E+02
3.2.16 - front-fron flammable resulti					carrying da	angerous g	goods invo	olving
Fatalities pass		0		3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
///////////////////////////////////////	•	•	•	•	•	•	•	•
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				-				
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0,00%	0,36%	99,64%	0
	4,80E+01	0	0	0	1,10E-07	1,09E-01	1,79E+02	0
0			ļ			· · ·		
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
	510							
Distribution-type		0	0	0	0	100,00%	0	0
<i>,</i> ,			0	0 0	0	100,00% 1,00E+07	0	0
<i>,</i> ,	Poisson	0	-	÷			-	-
<i>,</i> ,	Poisson 5,00E+06	0	-	÷			-	-
Average	Poisson 5,00E+06 oad	0	0	0	0	1,00E+07	0	0
Average Disruption r	Poisson 5,00E+06 oad Poisson	0	0	0	0 14	1,00E+07 30	0	0 365
Average Disruption r Distribution-type	Poisson 5,00E+06 oad Poisson	0 0 0 65,92%	0 1 27,47%	0 7 6,61%	0 14 0,00%	1,00E+07 30 0	0 180 0	0 365 0
Average Disruption r Distribution-type	Poisson 5,00E+06 oad Poisson 4,17E-01	0 0 0 65,92%	0 1 27,47%	0 7 6,61%	0 14 0,00%	1,00E+07 30 0	0 180 0	0 365 0
Average Disruption r Distribution-type Average	Poisson 5,00E+06 oad Poisson 4,17E-01	0 0 0 65,92% 0	0 1 27,47% 2,75E-01	0 7 6,61% 4,63E-01	0 14 0,00% 2,18E-07	1,00E+07 30 0 0	0 180 0 0	0 365 0 0

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3.2.18 - front-fron resulting in no rel		ollision wi	th two freig	-	carrying da	angerous (goods invo	olving lpg
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		-						-
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		-						-
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.2.19 - front-fron resulting in small				ght trains o	carrying da	angerous (goods invo	olving lpg
	release a			ght trains o 3	carrying da	angerous g 30	goods invo 100	olving lpg 300
resulting in small	release a engers	nd no igni	tion			-		
resulting in small Fatalities pass	release a engers	nd no igni 0	tion 1	3	10	30	100	300
resulting in small Fatalities pass Distribution-type	release a engers Poisson	nd no igni 0 100,00%	tion 1 0	3 0	10 0	30 0	100 0	300 0
resulting in small Fatalities pass Distribution-type	release a engers Poisson 0	nd no igni 0 100,00%	tion 1 0	3 0	10 0	30 0	100 0	300 0
resulting in small Fatalities pass Distribution-type Average	release a engers Poisson 0	nd no igni 0 100,00% 0	tion 1 0 0	3 0 0	10 0	30 0	100 0 0	300 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp	release a engers Poisson 0 loyees	nd no igni 0 100,00% 0	tion 1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	300 0 0 300
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type	release a engers Poisson 0 loyees Poisson	nd no igni 0 100,00% 0 100,00%	tion 1 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type	release a engers Poisson 0 loyees Poisson 0	nd no igni 0 100,00% 0 100,00%	tion 1 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	release a engers Poisson 0 loyees Poisson 0	nd no igni 0 100,00% 0 100,00% 0	tion 1 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 0 0 3 0 0	10 0 0 10 0 0	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	release a engers Poisson 0 loyees Poisson 0 n Poisson	nd no igni 0 100,00% 0 100,00% 0	tion 1 0 0 1 0 1 0 1 0 1 1 0 1 1 1 1 1 1 1	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type	release a engers Poisson 0 loyees Poisson 0 n Poisson	nd no igni 0 100,00% 0 100,00% 0 0	tion 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 0 0 3 0 0 7 0	10 0 0 10 0 0 0 14 0,00%	30 0 0 30 0 0 30 0,36%	100 0 0 100 0 0 180 99,64%	300 0 0 300 0 0 0 365 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type	release a engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	nd no igni 0 100,00% 0 100,00% 0 0	tion 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 0 0 3 0 0 7 0	10 0 0 10 0 0 0 14 0,00%	30 0 0 30 0 0 30 0,36%	100 0 0 100 0 0 180 99,64%	300 0 0 300 0 0 0 365 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	release a engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	nd no igni 0 100,00% 0 100,00% 0 0 0 0 0	tion 1 0 1 0 0 1 0 1 0 1 0 0 1 0 0 0 0 0 0	3 0 0 3 0 0 0 7 0 0	10 0 0 10 0 0 0 14 0,00% 1,10E-07	30 0 0 30 0 0 30 0,36% 1,09E-01	100 0 0 100 0 0 180 99,64% 1,79E+02	300 0 0 300 0 0 365 0 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	release a engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	nd no igni 0 100,00% 0 100,00% 0 0 0 0 1,00E+03	tion 1 0 0 1 0 0 1 0 0 1,00E+04	3 0 0 3 0 0 0 7 0 0 0 1,00E+05	10 0 0 10 0 0 0 0 14 0,00% 1,10E-07	30 0 0 30 0 0 30 0,36% 1,09E-01 1,00E+07	100 0 0 100 0 0 0 180 99,64% 1,79E+02 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	release a engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01	nd no igni 0 100,00% 0 100,00% 0 100,00% 0 0 0 1,00E+03 0	tion 1 0 0 1 0 0 1 0 1,00E+04 0	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	10 0 0 10 0 0 0 14 0,00% 1,10E-07 1,00E+06 0	30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00%	100 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	release a engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06	nd no igni 0 100,00% 0 100,00% 0 100,00% 0 0 0 1,00E+03 0	tion 1 0 0 1 0 0 1 0 1,00E+04 0	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0	10 0 0 10 0 0 0 14 0,00% 1,10E-07 1,00E+06 0	30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00%	100 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	release a engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06	o 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tion 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0	10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0	30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 0 0 180 99,64% 1,79E+02 1,00E+08 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	release a engers a Poisson a 0 a Ioyees a Poisson a 0 a a b a a b a b a b a b a c a b a c a c a c a c a c a c a c a c a c a c a c a c a c a c a c a c a c a c a c a c a	nd no igni 0 100,00% 0 100,00% 0 100,00% 0 0 0 1,00E+03 0 0	tion 1 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 1 0 0 0 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0	30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	release a engers Poisson 0 loyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+06	nd no igni 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>tion 1 0 1 0 1 0 0 1 0 1 0 0 1,00E+04 0 0 1,00E+04 27,47%</td> <td>3 0 0 3 0 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%</td> <td>10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00%</td> <td>30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0</td> <td>100 0 0 100 0 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0</td> <td>300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0</td>	tion 1 0 1 0 1 0 0 1 0 1 0 0 1,00E+04 0 0 1,00E+04 27,47%	3 0 0 3 0 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%	10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00%	30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	release a engers a Poisson a 0 a Ioyees a Poisson a 0 a Poisson a 4,80E+01 a sts a Poisson a 5,00E+06 a oad a Poisson a	nd no igni 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>tion 1 0 1 0 1 0 0 1 0 1 0 0 1,00E+04 0 0 1,00E+04 27,47%</td> <td>3 0 0 3 0 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%</td> <td>10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00%</td> <td>30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0</td> <td>100 0 0 100 0 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0</td> <td>300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0</td>	tion 1 0 1 0 1 0 0 1 0 1 0 0 1,00E+04 0 0 1,00E+04 27,47%	3 0 0 3 0 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%	10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 14 0,00%	30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	release a engers a Poisson a 0 a Ioyees a Poisson a 0 a Poisson a 4,80E+01 a sts a Poisson a 5,00E+06 a oad a Poisson a	nd no igni 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>tion 1 0 1 0 1 0 0 1 0 1 0 0 1,00E+04 0 0 0 1 27,47% 2,75E-01</td> <td>3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61% 4,63E-01</td> <td>10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 0 14 0,00% 2,18E-07</td> <td>30 0 0 30 0 0 0 30 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0 0</td> <td>100 0 0 100 0 0 0 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0</td> <td>300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0</td>	tion 1 0 1 0 1 0 0 1 0 1 0 0 1,00E+04 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61% 4,63E-01	10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 0 14 0,00% 2,18E-07	30 0 0 30 0 0 0 30 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 30 0 0	100 0 0 100 0 0 0 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	release a engers Poisson 0 loyees Poisson 0 Poisson 4,80E+01 sts Poisson 5,00E+06 oad Poisson 4,17E-01	nd no igni 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tion 1 0 1 0 1 0 0 1 0 1 0 0 1,00E+04 0 0 1,00E+04 27,47% 2,75E-01	3 0 0 3 0 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61% 4,63E-01 3	10 0 0 10 0 0 0 0 14 0,00% 1,10E-07 1,00E+06 0 0 0 0 14 0,00% 2,18E-07	30 0 0 30 0 0 0 30 0,36% 1,09E-01 1,00E+07 100,00% 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0	300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 0 365 0 0 0 0 365

3.2.20 - front-fron lpg,small release				-		angerous (goods invo	olving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	0,002.02	Ŭ	Ŭ	Ŭ	Ŭ	•	Ű	1,002.02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	I	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
	a a d	•	4	2	40	20	100	200
Fatalities ro	[0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
3.2.22 - front- fron	2,15E+02	0	0	0	0	0		3,00E+02
lpg,small release						angerous (Joous mvd	Jiving
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type		14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Diamontia	-	•	1	7	14	20	400	365
Disruptio Distribution-type		0	0	0	0	30 0	180 0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	3,032+02	0	0	0	0	0	0	1,001+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	I	0	0	0	0	100,00%	0	0
	5,00E+06	0	0	0	0	1,00E+07	-	0
0						· · ·		
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities ro		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02

3.2.24 - front- from				ght trains o	arrying us	ingerede g		siving
Ipg,medium relea Fatalities pass			1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
,,	0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0,00%	100,00%	0
Average	7,20E+01	0	0	0	0	5,39E-07	1,80E+02	0
-								•
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
		•	1	3	10	30	100	300
Fatalities ro	bad	0		3		••		
Fatalities ro Distribution-type	bad Poisson	0 100,00%	0	0	0	0	0	0
		-	-	-			0	0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea	Poisson 0 t - train co se resultin	100,00% 0 ollision wit	0 0 th two frei ed ignitior	0 0 ght trains o 1 and exp	0 0 carrying da losion	0 0 angerous ç	0 goods invo	0 Diving
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass	Poisson 0 t - train co se resultin engers	100,00% 0 ollision with g in delay 0	0 0 th two frei ed ignition 1	0 0 ght trains on and exp 3	0 0 carrying da losion 10	0 0 angerous <u>c</u> 30	0 goods invo 100	0 Diving 300
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type	Poisson 0 t - train co se resultin engers Poisson	100,00% 0 0 0 0 0 0 100,00%	0 0 th two frei ed ignition 1 0	0 0 ght trains on and exp 3 0	0 0 carrying da losion 10 0	0 0 angerous g 30 0	0 goods invo 100 0	0 olving <u>300</u> 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass	Poisson 0 t - train co se resultin engers	100,00% 0 ollision with g in delay 0	0 0 th two frei ed ignition 1	0 0 ght trains on and exp 3	0 0 carrying da losion 10	0 0 angerous <u>c</u> 30	0 goods invo 100	0 Diving 300
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0	100,00% 0 0 0 0 0 0 100,00%	0 0 th two frei ed ignition 1 0	0 0 ght trains on and exp 3 0	0 0 carrying da losion 10 0 0	0 0 angerous g 30 0	0 goods invo 100 0 0	0 olving <u>300</u> 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 t - train co se resultin engers Poisson 0 loyees	100,00% 0 0 0 0 0 100,00% 0 0	0 0 th two freig ed ignition 1 0 0	0 0 ght trains of and exp 3 0 0	0 0 0 carrying da losion 10 0 0	0 0 angerous g 30 0 0 30	0 goods invo 100 0	0 olving 300 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson	100,00% 0 0 0 0 0 100,00% 0	0 0 th two frei ed ignition 1 0 0	0 0 ght trains on and exp 3 0 0 0 3 44,10%	0 0 carrying da losion 10 0 0	0 0 angerous g 30 0 0	0 goods invo 100 0 100	0 olving 300 0 0 300
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 t - train co se resultin engers Poisson 0 loyees	100,00% 0 0 0 0 0 100,00% 0 0 14,96%	0 0 th two freig ed ignition 1 0 0 0	0 0 ght trains on and exp 3 0 0 0	0 0 carrying da losion 10 0 0 12,53%	0 0 angerous g 30 0 0 30 0,00%	0 goods invo 100 0 0 100 0	0 olving 300 0 0 300 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9	100,00% 0 0 0 0 0 100,00% 0 0 14,96%	0 0 th two freig ed ignition 1 0 0 0	0 0 ght trains on and exp 3 0 0 0 3 44,10%	0 0 carrying da losion 10 0 0 12,53%	0 0 angerous g 30 0 0 30 0,00%	0 goods invo 100 0 0 100 0	0 olving 300 0 0 300 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9	100,00% 0 0 0 0 0 100,00% 0 14,96% 0	0 0 th two freig ed ignition 1 0 0 0 1 28,42% 2,84E-01	0 0 3 0 0 0 0 3 44,10% 1,32E+00	0 0 0 carrying da losion 10 0 0 12,53% 1,25E+00	0 0 30 0 0 0 30 0,00% 1,55E-04	0 300ds invo 100 0 100 0 0 0	0 olving 300 0 300 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0	0 0 th two freiged ignition 1 0 0 1 28,42% 2,84E-01	0 0 0 ght trains of and exp 3 0 0 0 0 3 44,10% 1,32E+00 7	0 0 0 carrying da losion 10 0 0 12,53% 1,25E+00 14	0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 goods invo 100 0 0 100 0 0	0 olving 300 0 0 300 0 0 365
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson	100,00% 0 0 0 0 0 100,00% 0 14,96% 0 0 0 0	0 0 th two frei ed ignition 1 0 0 0 1 28,42% 2,84E-01 1 0	0 0 0 ght trains of and exp 3 0 0 0 3 44,10% 1,32E+00 7 0	0 0 0 carrying da losion 10 0 0 0 12,53% 1,25E+00 14 0	0 0 30 0 0 0 0 30 0,00% 1,55E-04 30 0	0 100 0 0 100 0 100 0 180 0	0 olving 0 0 0 0 300 0 0 0 365 51,39%
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02	100,00% 0 0 0 0 0 100,00% 0 14,96% 0 0 0 0	0 0 th two frei ed ignition 1 0 0 0 1 28,42% 2,84E-01 1 0	0 0 0 ght trains of and exp 3 0 0 0 3 44,10% 1,32E+00 7 0	0 0 0 carrying da losion 10 0 0 0 12,53% 1,25E+00 14 0	0 0 30 0 0 0 0 30 0,00% 1,55E-04 30 0	0 100 0 0 100 0 100 0 180 0	0 olving 0 0 0 0 300 0 0 0 365 51,39%
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 0 0 0 0	0 0 1 th two freig ed ignition 1 0 0 0 1 28,42% 2,84E-01 1 0 0	0 0 0 ght trains of and exp 3 0 0 0 0 3 44,10% 1,32E+00 7 0 0	0 0 0 carrying da losion 10 0 0 0 12,53% 1,25E+00 14 0 0	0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 goods invo 100 0 100 0 180 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 th two freiged ignition 1 0 0 0 1 28,42% 2,84E-01 1 0 0 0	0 0 0 ght trains of and exp 3 0 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05	0 0 0 iosion 10 0 0 0 12,53% 1,25E+00 14 0 0 0	0 0 30 0 0 0 0 0 0 1,55E-04 30 0 0 0 1,00E+07	0 100 0 0 0 0 100 0 0 180 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig ed ignition 1 0 0 28,42% 2,84E-01 1 0 0 0 1,00E+04 0	0 0 0 ght trains of and exp 3 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05 0	0 0 0 0 0 10 0 0 12,53% 1,25E+00 1,25E+00 1,25E+00 1,25E+00 1,00E+06 0	0 0 0 30 0 0 0 0 0 0 1,55E-04 30 0 0 0 1,00E+07 100,00%	0 100 0 0 0 0 100 0 0 180 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+06	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig ed ignition 1 0 0 28,42% 2,84E-01 1 0 0 0 1,00E+04 0	0 0 0 ght trains of and exp 3 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05 0	0 0 0 0 0 10 0 0 12,53% 1,25E+00 1,25E+00 1,25E+00 1,25E+00 1,00E+06 0	0 0 0 30 0 0 0 0 0 0 1,55E-04 30 0 0 0 1,00E+07 100,00%	0 100 0 0 0 0 100 0 0 180 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+06	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig ed ignition 1 0 0 28,42% 2,84E-01 1 0 0 0 1,00E+04 0 0	0 0 0 3 0 0 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05 0 0	0 0 0 10sion 10 0 0 12,53% 1,25E+00 1,25E+00 1,25E+00 0 0	0 0 0 30 0 0 0 0 0 0 1,55E-04 30 0 0 0 1,55E-04 1,55E-04 1,00E+07 100,00% 1,00E+07	0 100 0 0 0 100 0 100 0 180 0 0 180 0 0 1,00E+08 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+06	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 14,96% 0 0 14,96% 0 0 14,96% 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freig ed ignition 1 0 0 0 28,42% 2,84E-01 1 0 0 0 1,00E+04 0 0	0 0 0 ght trains of and exp 3 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05 0 0	0 0 0 0 0 10 0 0 12,53% 1,25E+00 1,25E+00 1,25E+00 1,25E+00 1,00E+06 0 0 0	0 0 0 30 0 0 0 0 0 0 1,55E-04 30 0 0 0 1,00E+07 100,00% 1,00E+07 30	0 100 0 0 0 0 100 0 180 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+06 oad Poisson	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 14,96% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freiged ignition 1 0 0 28,42% 2,84E-01 1 0 0 0 1,00E+04 0 0 0	0 0 0 ght trains of and exp 3 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05 0 0 0 1,00E+05 0 0	0 0 0 carrying da losion 10 0 0 12,53% 1,25E+00 1,25E+00 1,25E+00 1,00E+06 0 0 0	0 0 0 30 0 0 0 0 0 30 0,00% 1,55E-04 30 0 0 0 1,00E+07 100,00% 1,00E+07	0 100 0 0 100 0 100 0 180 0 1,00E+08 0 0 180 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+06 oad Poisson 4,17E-01	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 14,96% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freiged ignition 1 0 0 28,42% 2,84E-01 1 0 0 0 1,00E+04 0 0 0	0 0 0 ght trains of and exp 3 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05 0 0 0 1,00E+05 0 0	0 0 0 carrying da losion 10 0 0 12,53% 1,25E+00 1,25E+00 1,25E+00 1,00E+06 0 0 0	0 0 0 30 0 0 0 0 0 30 0,00% 1,55E-04 30 0 0 0 1,00E+07 100,00% 1,00E+07	0 100 0 0 100 0 100 0 180 0 1,00E+08 0 0 180 0	0 300 0 0 0 0 300 0 300 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365 0
Distribution-type Average 3.2.25 - front- from Ipg,medium relea Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 t - train co se resultin engers Poisson 0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+06 oad Poisson 4,17E-01	100,00% 0 0 0 0 0 100,00% 0 100,00% 0 14,96% 0 0 14,96% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 th two freiged ignition 1 0 0 28,42% 2,84E-01 1 0 0 0 1,00E+04 0 0 0 1,00E+04 0 0 0	0 0 0 3 3 0 0 0 0 3 44,10% 1,32E+00 7 0 0 0 1,00E+05 0 0 1,00E+05 0 0 1,00E+05 0 0	0 0 0 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 30 0 0 0 0 0 0 1,55E-04 30 0 0 0 1,00E+07 100,00% 1,00E+07 100,00% 1,00E+07	0 100 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0

3.2.27 - front- fron						angerous g	goods invo	olving
Ipg,medium relea		ig in imme 0	diate ignit	tion and b	leve 10	30	100	300
Fatalities pass Distribution-type		100,00%	0	3 0	0	30	0	300 0
	0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Diamuntia	-	0	4	7	44	20	190	265
Disruptio	1	0	1		14	30	180	365
Distribution-type			0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average		0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities ro	oad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
-	2,15E+02	0	0	0	0	0	0	3,00E+02
3.2.29 - front- fron lpg, large release				ght trains o	carrying da	angerous (goods invo	olving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
¥	l	l	l				I	
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0,00%	0,36%	99,64%	0
Average	4,80E+01	0	0	0	1,10E-07	1,09E-01	1,79E+02	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Diamantin		•	4		44	20	400	0.05
Disruption r	1	0	1	7	14	30	180	365
Distribution-type		65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
, we ruge		<u> </u>	, v	, v	U U		<u> </u>	L V

3.2.30 - front-from lpg,large release						angerous ç	goods invo	olving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
Fatalities emp		0	1	3	10	30	100	300
	-	14,96%			12,53%	0,00%	0	
Distribution-type			28,42%	44,10%			-	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
0								
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	aad	0	1	7	14	30	180	365
-		65,92%			0,00%	0		
Distribution-type			27,47%	6,61% 4,63E-01	2,18E-07		0	0
Average	4,17E-01	0	2,75E-01	4,03E-01	2,18E-07	0	0	0
Fatalities re	oad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
3.2.33 - front- fron			th two frei	ght trains o	carrying da	angerous g	goods invo	olving
acid and resulting Fatalities pass		ease 0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-	-	-	-				
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
Disruptio	1	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair co	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	1	0	0	0	0	100,00%	0	0
Average		-	0	0	0	1,00E+07	0	0
, weruge						,		
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
		•	4	2	40	20	400	200
Fatalities re	1	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

3.2.34 - front- fron	t - train c	ollision wit	th two freig	ght trains o	carrying da	angerous g	goods invo	olving
acid and resulting	g in small	release		-				-
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	1	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	-	1,00E+03	-	1,00E+05			1,00E+08	
Distribution-type		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
		•		_			400	0.07
Disruption r	1	0	1	7	14	30	180	365
Distribution-type		65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
		•	1	•	40	20	400	200
Fatalities re	1	0	-	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3 2 35 - front-from	t - train c	ollision wi	th two froi	aht trains (arwing da	andorous	noods inv	alving
3.2.35 - front- from acid and resulting			th two frei	ght trains o	carrying da	angerous (goods invo	olving
3.2.35 - front- fron acid and resulting Fatalities pass	g in mediu		th two frei	ght trains o	carrying da	angerous g 30	goods invo 100	olving 300
acid and resulting	g in mediu engers	ım release						
acid and resulting Fatalities pass Distribution-type	g in mediu engers Poisson	im release 0	1	3	10	30	100	300
acid and resulting Fatalities pass	g in mediu engers Poisson	m release 0 100,00%	1 0	3 0	10 0	30 0	100 0	300 0
acid and resulting Fatalities pass Distribution-type	g in mediu engers Poisson 0	m release 0 100,00%	1 0	3 0	10 0	30 0	100 0	300 0
acid and resulting Fatalities pass Distribution-type Average	g in mediu engers Poisson 0	m release 0 100,00% 0	1 0	3 0 0	10 0 0	30 0 0	100 0 0	300 0
acid and resulting Fatalities pass Distribution-type Average Fatalities emp	g in mediu engers Poisson 0 loyees Poisson	m release 0 100,00% 0 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	300 0 0 300
acid and resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type	g in mediu engers Poisson 0 loyees Poisson	m release 0 100,00% 0 0 100,00%	1 0 0 1 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
acid and resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0	m release 0 100,00% 0 0 100,00%	1 0 0 1 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
acid and resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	g in mediu engers Poisson 0 loyees Poisson 0 n	m release 0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0	10 0 0 10 0 0	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
acid and resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson	o 100,00% 0 100,00% 0 100,00% 0 0 0 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
acid and resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson	o 100,00% 0 100,00% 0 100,00% 0 13,53% 0	1 0 0 1 0 0 0 27,07% 2,71E-01	3 0 0 3 0 0 0 7 59,29% 4,15E+00	10 0 0 10 0 0 0 14 0,11% 1,54E-02	30 0 0 30 0 0 0 30 0,00% 1,16E-07	100 0 0 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
acid and resulting Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	o 100,00% 0 100,00% 0 100,00% 0 100,00% 0 13,53%	1 0 0 1 0 0 0 1 27,07%	3 0 0 3 0 0 0 7 59,29%	10 0 0 10 0 0 0 14 0,11%	30 0 0 30 0 0 0 30 0,00% 1,16E-07	100 0 0 100 0 0 180 0	300 0 0 300 0 0 365 0
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Distribution-type	g in mediu engers Poisson 0 Ioyees Poisson 0 n Poisson 2,00E+00 sts Poisson	o 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0	3 0 0 3 0 0 0 7 59,29% 4,15E+00	10 0 0 10 0 0 0 14 0,11% 1,54E-02	30 0 0 30 0 0 0 0 30 0,00% 1,16E-07 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	o 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05	10 0 0 10 0 0 0 0 14 0,11% 1,54E-02	30 0 0 30 0 0 0 30 0,00% 1,16E-07	100 0 0 100 0 0 180 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06	o 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0	10 0 0 10 0 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0	30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+06	<pre>m release 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0</pre>	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0	3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 10 0 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0	30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06	release 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0 65,92%	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0 1 27,47%	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 6,61%	10 0 10 0 10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 14 0,00%	30 0 0 30 0 0 0 0 0 0 30 0,00% 1,16E-07 100,00% 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+06	<pre>m release 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0</pre>	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0	3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 10 0 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 0 0	30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+06 oad Poisson 4,17E-01	o 100,00% 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 100,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 10 0 10 0 0 0 0 14 0,11% 1,54E-022 1,00E+06 0 0 14 0,00% 2,18E-07	30 0 0 30 0 0 0 0 0 0 0 0 1,16E-07 1,00E+07 100,00% 1,00E+07 30 0 0 0	100 0 100 0 100 0 0 180 0 1,00E+08 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <p< td=""><td>300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0</td></p<>	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities results	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+06 oad Poisson 4,17E-01	<pre>m release 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0 0 65,92% 0</pre>	1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 6,61% 4,63E-01 3	10 0 10 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 0 14 0,00% 2,18E-07 10	30 0 0 30 0 0 0 0 30 0,00% 1,16E-07 1,00E+07 1,00E+07 1,00E+07 30 0 0 0 30	100 0 100 0 100 0 180 0 1,00E+08 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 100	300 0 0 300 0 0 365 0 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365
acid and resulting Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+06 oad Poisson 4,17E-01	o 100,00% 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 100,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 10 0 10 0 0 0 0 14 0,11% 1,54E-022 1,00E+06 0 0 14 0,00% 2,18E-07	30 0 0 30 0 0 0 0 0 0 0 0 1,16E-07 1,00E+07 100,00% 1,00E+07 30 0 0 0	100 0 100 0 100 0 0 180 0 1,00E+08 0 0 180 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

3.2.36 - front- fron			th two frei	ght trains o	carrying da	angerous g	goods invo	olving
acid and resulting								
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

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3.3.1 - front- end · dangerous good			-	-		eight train	carrying	
Fatalities pass	<u> </u>	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		36,79%	36,79%	26,42%	0,00%	0	0	0
· · · · ·	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
	.,		0,002 01	.,	.,	,		
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
			-	-	-		,	•
332 - front- and	train colli	sion with	ono passo	ngor train	and one fr	-	carrying	
3.3.2 - front- end - dangerous good			-	-		-	carrying	-
3.3.2 - front- end dangerous good Fatalities pass	involving a		-	-		-	carrying	300
dangerous good	involving a	ammonia	resulting i	n small rel	ease	eight train		300 0
dangerous good Fatalities pass	involving a engers	ammonia 0	resulting i 1	n small rel 3	ease 10	eight train 30	100	
dangerous good Fatalities pass Distribution-type	involving a engers Poisson	ammonia 0 100,00%	resulting i 1 0	n small rel 3 0	ease 10 0	eight train 30 0	100 0	0
dangerous good Fatalities pass Distribution-type Average Fatalities emp	involving a engers Poisson 0 loyees	ammonia 0 100,00% 0 0	resulting i 1 0 0 1 1	n small rel 3 0 0 3	ease 10 0 0	eight train 30 0 0 30	100 0	0
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson Poisson 0 loyees Poisson	ammonia 0 100,00% 0 0 100,00%	resulting i 1 0 0 1 0 0	n small rel 3 0 0 3 0	ease 10 0 0 10 0	eight train 30 0 0 30 0 0	100 0 0 100 0	0
dangerous good Fatalities pass Distribution-type Average Fatalities emp	involving a engers Poisson 0 loyees	ammonia 0 100,00% 0 0	resulting i 1 0 0 1 1	n small rel 3 0 0 3	ease 10 0 0	eight train 30 0 0 30	100 0 0 100	0 0 300
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	Poisson 0 loyees Poisson 0	ammonia 0 100,00% 0 100,00% 0	resulting i 1 0 0 1 0 0 0	n small rel 3 0 0 0 3 0 0	ease 10 0 0 10 0 0 0	eight train 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0	100 0 0 100 0 0	0 0 300 0 0
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	n n n n n n n n n n n n n n n n n n n	ammonia 0 100,00% 0 100,00% 0	resulting i 1 0 0 1 0 0 1 1	n small rel 3 0 0 3 0 0 0 7	ease 10 0 10 0 0 0 14	eight train 30 0 0 30 0 30 30 30 30 30	100 0 0 100 0 0 180	0 0 300 0 0 365
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type	nvolving a engers Poisson 0 loyees Poisson 0	ammonia 0 100,00% 0 100,00% 0 100,00% 0 13,53%	resulting i 1 0 0 1 0 0 1 27,07%	n small rel 3 0 0 3 0 0 0 7 59,29%	ease 10 0 10 0 10 0 0 14 0,11%	eight train 30 0 0 30 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	100 0 0 100 0 0 180 0	0 0 300 0 0 365 0
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	nvolving a engers Poisson 0 loyees Poisson 0	ammonia 0 100,00% 0 100,00% 0	resulting i 1 0 0 1 0 0 1 1	n small rel 3 0 0 3 0 0 0 7	ease 10 0 10 0 0 0 14	eight train 30 0 0 30 0 30 30 30 30 30	100 0 0 100 0 0 180	0 0 300 0 0 365
dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	n Poisson 0 Ioyees Poisson 0 n Poisson 2,00E+00	ammonia 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01	n small rel 3 0 0 3 0 0 0 7 59,29% 4,15E+00	ease 10 0 10 0 0 0 14 0,11% 1,54E-02	eight train 30 0 0 30 0 0 30 0,00% 1,16E-07	100 0 0 100 0 0 180 0 0	0 0 300 0 0 365 0 0
dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Repair cos	involving a engers Poisson o loyees Poisson o n Poisson 2,00E+00	ammonia 0 100,00% 0 100,00% 0 100,00% 13,53% 0 1,00E+03	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04	n small rel 3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05	ease 10 0 10 0 0 0 0 14 0,11% 1,54E-02 1,00E+06	eight train 30 0 0 30 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08	0 0 300 0 0 365 0 0 0 1,00E+09
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson Poisson Poisson Poisson 0 Poisson 2,00E+00 sts Poisson	ammonia 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0	n small rel 3 0 0 3 0 0 59,29% 4,15E+00 1,00E+05 0	ease 10 0 10 0 10 0 14 0,11% 1,54E-02 1,00E+06 100,00%	eight train 30 0 0 30 0 0 30 0 0 1,16E-07 1,00E+07 0	100 0 0 100 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 0 365 0 0
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	involving a engers Poisson o loyees Poisson o n Poisson 2,00E+00	ammonia 0 100,00% 0 100,00% 0 100,00% 13,53% 0 1,00E+03	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04	n small rel 3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05	ease 10 0 10 0 0 0 0 14 0,11% 1,54E-02 1,00E+06	eight train 30 0 0 30 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08	0 0 0 0 0 0 365 0 0 0 1,00E+09 0
dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	involving a engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 5,00E+05	ammonia 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0	n small rel 3 0 0 3 0 0 59,29% 4,15E+00 1,00E+05 0	ease 10 0 10 0 10 0 14 0,11% 1,54E-02 1,00E+06 100,00%	eight train 30 0 0 30 0 0 30 0 0 1,16E-07 1,00E+07 0	100 0 0 100 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0
dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average	involving a engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 5,00E+05	ammonia 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0	n small rel 3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0	ease 10 0 10 0 10 0 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	eight train 30 0 0 30 0 0 30 0 0 0 1,16E-07 1,00E+07 0 0 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0
dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving a engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+05	ammonia 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 0	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 1	n small rel 3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0 7	ease 10 0 10 0 10 0 10 1,54E-02 1,00E+06 100,00% 1,00E+06	eight train 30 0 0 30 0 0 30 0 0 0 1,16E-07 1,00E+07 0 0 0 30 30 30 30 30 30 30 3	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving a engers Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+05	mmonia 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 1,00E+03 0 77,88%	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47%	n small rel 3 0 0 3 0 0 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65%	ease 10 0 10 0 10 0 0 10 0 1,54E-02 1,00E+06 100,00% 1,00E+06	eight train 30 0 0 30 0 0 30 0 0 30 1,16E-07 1,00E+07 0 0 30 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 0 30 0 0 30 0 0 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 3	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	0 0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving a engers Poisson 0 ioyees Poisson 0 r Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	mmonia 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0 1,00E+03 0 77,88%	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47%	n small rel 3 0 0 3 0 0 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65%	ease 10 0 10 0 10 0 0 10 0 1,54E-02 1,00E+06 100,00% 1,00E+06	eight train 30 0 0 30 0 0 30 0 0 30 1,16E-07 1,00E+07 0 0 30 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 0 30 0 0 30 0 0 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 3	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	0 0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving a engers Poisson 0 loyees Poisson 0 en Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	ammonia 0 100,00% 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 1,00E+03 0 77,88% 0	resulting i 1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	n small rel 3 0 0 0 3 0 0 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01	ease 10 0 10 0 10 0 10 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	eight train 30 0 0 0 30 0 0 0 0 0 1,16E-07 1,00E+07 0 0 0 0 0 0 0 0 0 0 0 0 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0

3.3.3 - front- end	 train colli 	sion with	one passe	nger train	and one fr	eight train	carrying	
dangerous good								
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type		0	0,00%	0,00%	0,13%	91,17%	8,71%	0
Average	23,75	0	1,15E-09	3,66E-07	1,26E-02	2,74E+01	8,71E+00	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	47,24%	35,43%	16,61%	0,73%	0	0	0
Average	0,75	0	3,54E-01	4,98E-01	7,29E-02	1,60E-08	0	0
Disruptio		0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07		1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
	_							
Disruption r		0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities re		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
erstribution-type								
Average	0	0	0	0	0	0	0	0
Average	0	_		_			_	0
Average	0 · train colli	sion with	one passe	nger train	and one fr		_	0
Average 3.3.4 - front- end dangerous good	0 - train colli involving a	sion with o	one passe resulting i	nger train n large rel	and one fr ease	eight train	carrying	
Average 3.3.4 - front- end dangerous good Fatalities pass	0 - train colli involving a engers	sion with ammonia 0	one passe resulting i 1	nger train n large rel 3	and one fr ease 10	eight train 30	carrying	300
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type	0 • train colli involving a engers Poisson	sion with o ammonia 0 0	one passe resulting i 1 0	nger train n large rel 3 0	and one fr ease 10 0,00%	eight train <u>30</u> 19,72%	carrying 100 80,28%	300 0
Average 3.3.4 - front- end dangerous good Fatalities pass	0 - train colli involving a engers	sion with ammonia 0	one passe resulting i 1	nger train n large rel 3	and one fr ease 10	eight train 30	carrying 100 80,28%	300
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average	0 train colli involving a engers Poisson 35,625	sion with o ammonia 0 0	one passe resulting i 1 0 0	nger train n large rel 3 0 0	and one fr ease 10 0,00% 4,20E-06	eight train 30 19,72% 5,91E+00	100 80,28% 8,03E+01	300 0 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp	0 - train colli involving a engers Poisson 35,625 loyees	sion with o ammonia 0 0 0	one passe resulting i 1 0 0	nger train n large rel 3 0 0 0	and one fr ease 10 0,00% 4,20E-06 10	eight train 30 19,72% 5,91E+00 30	100 80,28% 8,03E+01 100	300 0 0 300
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 • train colli involving a engers Poisson 35,625 loyees Poisson	sion with a ammonia 0 0 0 0 0 32,47%	one passe resulting i 0 0 1 36,52%	nger train n large rel 3 0 0 0 3 28,25%	and one fr ease 10 0,00% 4,20E-06 10 2,76%	eight train 30 19,72% 5,91E+00 30 0,00%	100 80,28% 8,03E+01 100 0	300 0 0 300 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp	0 - train colli involving a engers Poisson 35,625 loyees	sion with o ammonia 0 0 0	one passe resulting i 1 0 0	nger train n large rel 3 0 0 0	and one fr ease 10 0,00% 4,20E-06 10	eight train 30 19,72% 5,91E+00 30	100 80,28% 8,03E+01 100	300 0 0 300
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125	sion with a ammonia 0 0 0 0 32,47% 0	one passe resulting i 0 0 1 36,52% 3,65E-01	nger train n large rel 3 0 0 0 28,25% 8,47E-01	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07	100 80,28% 8,03E+01 100 0 0	300 0 0 300 0 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type Average	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125	sion with a ammonia 0 0 0 0 32,47% 0	one passe resulting i 0 0 1 36,52% 3,65E-01	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30	carrying 100 80,28% 8,03E+01 100 0 0 180	300 0 0 300 0 0 365
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type Distribution-type	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson	sion with o ammonia 0 0 0 0 32,47% 0 0 13,53%	one passe resulting i 0 0 1 36,52% 3,65E-01 1 27,07%	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7 59,29%	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14 0,11%	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00%	carrying 100 80,28% 8,03E+01 100 0 0 180 0	300 0 0 300 0 0 365 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type Average	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson	sion with a ammonia 0 0 0 0 32,47% 0	one passe resulting i 0 0 1 36,52% 3,65E-01	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30	carrying 100 80,28% 8,03E+01 100 0 0 180	300 0 0 300 0 0 365
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00	sion with o ammonia 0 0 0 0 32,47% 0 32,47% 0 13,53% 0	one passe resulting i 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14 0,11% 1,54E-02	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07	carrying 100 80,28% 8,03E+01 100 0 0 180 0 0 0	300 0 0 300 0 0 365 0 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts	sion with o ammonia 0 0 0 0 32,47% 0 13,53% 0 13,53% 0	one passe resulting i 1 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 44 0,11% 1,54E-02 1,00E+06	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07	Carrying 100 80,28% 8,03E+01 100 0 0 180 0 0 180 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average	0 train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson	sion with o ammonia 0 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0	one passe resulting i 1 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0	nger train n large rel 3 0 0 0 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0	and one fr ease 10 0,00% 4,20E-06 2,76% 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00%	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0	Carrying 100 80,28% 8,03E+01 100 0 0 180 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts	sion with o ammonia 0 0 0 0 32,47% 0 13,53% 0 13,53% 0	one passe resulting i 1 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 2,76E-01 1,54E-02 1,00E+06	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07	Carrying 100 80,28% 8,03E+01 100 0 0 180 0 0 180 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05	sion with o ammonia 0 0 0 0 32,47% 0 13,53% 0 13,53% 0 1,00E+03 0 0	one passe resulting i 1 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 44 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0	Carrying 100 80,28% 8,03E+01 100 0 0 180 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	0 - train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad	sion with o ammonia 0 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0 1,00E+03 0 0 0	one passe resulting i 1 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 4 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 30	Carrying 100 80,28% 8,03E+01 100 0 0 0 180 0 1,00E+08 0 0 1380	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	0 train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson	sion with o ammonia 0 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0 1,00E+03 0 0 0 1,00E+03	one passe resulting i 1 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0 0	nger train n large rel 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65%	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 4 2,76E-01 1,00E+06 100,00% 1,00E+06 100,00%	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 30 0 0	Carrying 100 80,28% 8,03E+01 100 0 0 0 0 0 0 0 0 0 0 180 0 0 1,00E+08 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	0 train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson	sion with o ammonia 0 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0 1,00E+03 0 0 0	one passe resulting i 1 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0	nger train n large rel 3 0 0 0 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 4 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 30	Carrying 100 80,28% 8,03E+01 100 0 0 0 180 0 1,00E+08 0 0 1380	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average	0 train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	sion with o ammonia 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,0000 10,00000000	one passe resulting i 1 0 0 1 36,52% 3,65E-01 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	nger train n large rel 3 0 0 0 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 0 0 0 0 0	Carrying 100 80,28% 8,03E+01 100 0 0 0 180 0 1,00E+08 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Fatalities reference	0 train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	sion with o ammonia 0 0 0 32,47% 0 32,47% 0 13,53% 0 1,00E+03 0 0 1,00E+03 0 77,88% 0	one passe resulting i 1 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	nger train n large rel 3 0 0 0 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01 3	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 4 2,76E-01 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06 100,00%	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 0 30 0 0 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 0 30 0 30 3	Carrying 100 80,28% 8,03E+01 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 </td <td>300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 0 365 0 0 0 0 365</td>	300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 0 365 0 0 0 0 365
Average 3.3.4 - front- end dangerous good Fatalities pass Distribution-type Average	0 train colli involving a engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	sion with o ammonia 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 13,53% 0 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,00000000	one passe resulting i 1 0 0 1 36,52% 3,65E-01 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	nger train n large rel 3 0 0 0 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01	and one fr ease 10 0,00% 4,20E-06 10 2,76% 2,76E-01 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 0 0 0 0 0	Carrying 100 80,28% 8,03E+01 100 0 0 0 180 0 1,00E+08 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

dangerous good			-	-	and one fr	eight train	carrying	
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos	[1,00E+04	1,00E+05	-	1,00E+07		-
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Discussion		•		-			400	0.05
Disruption r	I	0	10.470/	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro	ad	0	1	3	10	30	100	300
		100,00%	0	0	0	30	0	0
Distribution-type	Poisson 0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.3.6 - front- end -	train colli	sion with	one passe	nger train	and one fr	eight train	carrving	
dangerous good								
		monne re	esulting in	small rele	ase			
Fatalities pass			esulting in 1	small rele	ase 10	30	100	300
Fatalities pass Distribution-type	engers					30 0	100 0	300 0
	engers	0	1	3	10			
Distribution-type Average	engers Poisson 0	0 100,00% 0	1	3 0	10 0	0	0	0
Distribution-type Average Fatalities emp	engers Poisson 0	0 100,00% 0 0	1	3 0	10 0	0	0	0
Distribution-type Average	Poisson 0 loyees Poisson	0 100,00% 0 0 100,00%	1 0 0 1 0	3 0 0 3 0	10 0 0 10 0	0 0 30 0	0 0 100 0	0 0 300 0
Distribution-type Average Fatalities emp	Poisson 0 loyees	0 100,00% 0 0	1 0 0	3 0 0 3	10 0 0 10	0 0 30	0 0 100	0 0 300
Distribution-type Average Fatalities emp Distribution-type Average	Poisson 0 loyees Poisson 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0	10 0 0 10 0 0	0 0 30 0 0	0 0 100 0 0	0 0 300 0 0
Distribution-type Average Fatalities emp Distribution-type Average Disruptio	Poisson 0 loyees Poisson 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	0 0 30 0 0 30	0 0 100 0 0 180	0 0 300 0 0 365
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson O O O O O O N Poisson	0 100,00% 0 100,00% 0 100,00% 13,53%	1 0 0 1 0 0 1 27,07%	3 0 0 3 0 0 0 7 59,29%	10 0 0 10 0 0 14 0,11%	0 0 30 0 0 0 30 0,00%	0 0 100 0 0 180 0	0 0 300 0 0 365 0
Distribution-type Average Fatalities emp Distribution-type Average Disruptio	Poisson O O O O O O N Poisson	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	0 0 30 0 0 30	0 0 100 0 0 180	0 0 300 0 0 365
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	0 100,00% 0 100,00% 0 13,53% 0	1 0 0 1 0 0 1 27,07% 2,71E-01	3 0 0 3 0 0 0 7 59,29% 4,15E+00	10 0 0 10 0 0 14 0,11% 1,54E-02	0 0 30 0 0 0 30 0,00% 1,16E-07	0 0 0 0 0 180 0 0	0 0 300 0 0 365 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	0 100,00% 0 100,00% 0 13,53% 0 1,00E+03	1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05	10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06	0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07	0 0 100 0 0 180 0 0 1,00E+08	0 0 300 0 0 365 0 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Repair cos Distribution-type	Poisson 0 Poisson 0 Poisson 0 n Poisson 2,00E+00 sts Poisson	0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0	1 0 0 1 0 27,07% 2,71E-01 1,00E+04 0	3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0	10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 100,00%	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 180 0 0 1,00E+08 0	0 0 300 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Repair cos Distribution-type	Poisson 0 loyees Poisson 0 n Poisson 2,00E+00	0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0	1 0 0 1 0 0 1 27,07% 2,71E-01 1,00E+04	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05	10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06	0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07	0 0 100 0 0 180 0 0 1,00E+08	0 0 300 0 0 365 0 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 loyees Poisson 0 n Poisson 2,00E+00 sts Poisson 5,00E+05	0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0	1 0 0 1 0 0 0 1 27,07% 2,71E-01 1,00E+04 0 0	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0	10 0 0 10 0 0 14 0,11% 1,54E-02 1,00E+06 1,00E+06	0 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 0 0	0 0 0 0 0 180 0 0 1,00E+08 0 0	0 0 0 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 5,00E+05 oad	0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0	3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 0 0 30 1,16E-07 1,00E+07 0 0 0	0 0 0 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+05	 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 0 1,00E+03 0 0 77,88% 	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0 19,47%	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65%	10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 0 0 0 30 0	0 0 0 0 0 0 180 0 0 1,00E+08 0 0 0 180 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 Ioyees Poisson 0 Poisson 2,00E+00 5,00E+05 oad	0 100,00% 0 100,00% 0 13,53% 0 1,00E+03 0 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0	3 0 0 3 0 0 0 59,29% 4,15E+00 1,00E+05 0 0 0	10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 0 0 30 1,16E-07 1,00E+07 0 0 0	0 0 0 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	engers Poisson 0 loyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 1,00E+03 0 0 0 77,88% 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0 19,47% 1,95E-01	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 2,65% 1,85E-01	10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 0 0 0 30 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson Poisson 0 loyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	 0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 13,53% 0 77,88% 0 77,88% 0 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01 1	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01 3	10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 0 30 1,16E-07 1,00E+07 0 0 0 0 30 0 0 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	engers Poisson 0 loyees Poisson 0 Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	0 100,00% 0 100,00% 0 13,53% 0 13,53% 0 1,00E+03 0 0 0 77,88% 0	1 0 0 1 0 0 0 27,07% 2,71E-01 1,00E+04 0 0 0 19,47% 1,95E-01	3 0 0 3 0 0 0 7 59,29% 4,15E+00 1,00E+05 0 0 0 0 7 2,65% 1,85E-01	10 0 0 10 0 0 0 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 0 30 0,00% 1,16E-07 1,00E+07 0 0 0 30 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0

3.3.7 - front- end - dangerous good		chlorine re	esultina in	medium r	elease			
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0,00%	0,00%	0,13%	91,17%	8,71%	0
Average	23,75	0	1,15E-09	3,66E-07	1,26E-02	2,74E+01	8,71E+00	0
				-			-	
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	47,24%	35,43%	16,61%	0,73%	0	0	0
Average	0,75	0	3,54E-01	4,98E-01	7,29E-02	1,60E-08	0	0
		-		_				
Disruptio	1	0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Repair co	ete	1,00E+03	1,00E+04	1,00E+05	1 005+06	1 005+07	1,00E+08	1 005+00
-		1,00E+03	1,00E+04	1,00E+05	100,00%	1,00E+07	1,00E+08	
Distribution-type	Poisson 5,00E+05	-	0	0	1,00E+06	0	0	0
Average	5,00L F03				1,000100	0		0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average		0	1,95E-01	1,85E-01	4,24E-09	0	0	0
	,	-	,	,	,	-	-	-
			1	3	10	30	100	300
Fatalities re	bad	0	1	3	10	~~		
Fatalities ro Distribution-type	1	0 100,00%	0	0	0	0	0	0
	1	-	-				0	0 0
Distribution-type Average	Poisson 0	100,00% 0	0	0	0	0	0	-
Distribution-type	Poisson 0 - train colli	100,00% 0	0 0 one passe	0 0 nger train	0 0 and one fr	0	0	-
Distribution-type Average 3.3.8 - front- end	Poisson 0 - train colli involving c	100,00% 0	0 0 one passe	0 0 nger train	0 0 and one fr	0	0	-
Distribution-type Average 3.3.8 - front- end dangerous good	Poisson 0 - train colli involving c engers	100,00% 0 ision with o	0 0 one passe sulting in	0 0 nger train large rele	0 0 and one fr ase	0 0 eight train	0 carrying	0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass	Poisson 0 - train colli involving c engers Poisson	100,00% 0 ision with o chlorine re 0	0 0 one passe esulting in 1	0 0 nger train large rele 3	0 0 and one fr ase 10	0 0 eight train 30	0 carrying 100 80,28%	0 300
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average	Poisson 0 - train colli involving c engers Poisson 35,625	100,00% 0 sion with o chlorine re 0 0 0	0 0 one passe esulting in 1 0 0	0 0 nger train large rele 3 0 0	0 0 and one fr ase 10 0,00%	0 0 eight train 30 19,72%	0 carrying 100 80,28% 8,03E+01	0 300 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 - train colli involving c engers Poisson 35,625	100,00% 0 sion with o chlorine ro 0 0 0	0 0 0 esulting in 1 0 0	0 0 nger train large rele 3 0 0 0	0 0 and one fr ase 10 0,00% 4,20E-06	0 0 eight train 30 19,72% 5,91E+00 30	0 carrying 100 80,28%	0 300 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 - train colli involving c engers Poisson 35,625 loyees Poisson	100,00% 0 ision with o chlorine re 0 0 0 0 32,47%	0 0 0 0 0 0 0 1 36,52%	0 0 nger train large rele 3 0 0 0 3 28,25%	0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76%	0 0 eight train 30 19,72% 5,91E+00 30 0,00%	0 carrying 100 80,28% 8,03E+01 100 0	0 300 0 0 300 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 - train colli involving c engers Poisson 35,625 loyees Poisson	100,00% 0 sion with o chlorine ro 0 0 0	0 0 0 esulting in 1 0 0	0 0 nger train large rele 3 0 0 0	0 0 and one fr ase 10 0,00% 4,20E-06	0 0 eight train 30 19,72% 5,91E+00 30	0 carrying 100 80,28% 8,03E+01 100	0 300 0 0 300
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	Poisson 0 - train colli involving c engers Poisson 35,625 loyees Poisson 1,125	100,00% 0 ision with o chlorine re 0 0 0 0 32,47% 0	0 0 0 0 0 0 1 36,52% 3,65E-01	0 0 nger train large rele 3 0 0 0 0 3 28,25% 8,47E-01	0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01	0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07	0 carrying 100 80,28% 8,03E+01 100 0 0	0 300 0 0 300 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train colli involving c engers Poisson 35,625 loyees Poisson 1,125	100,00% 0 sion with o chlorine re 0 0 0 0 32,47% 0	0 0 0 esulting in 1 0 0 0 1 36,52% 3,65E-01	0 0 nger train large rele 3 0 0 0 0 3 28,25% 8,47E-01 7	0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01	0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30	0 carrying 100 80,28% 8,03E+01 100 0 0	0 300 0 0 300 0 0 365
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 train colli involving c engers Poisson 35,625 loyees Poisson 1,125 n Poisson	100,00% 0 sion with o chlorine ro 0 0 0 0 32,47% 0 0 13,53%	0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07%	0 0 nger train large rele 3 0 0 0 0 3 28,25% 8,47E-01 7 59,29%	0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14 0,11%	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00%	0 carrying 80,28% 8,03E+01 100 0 0 180 0	0 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 train colli involving c engers Poisson 35,625 loyees Poisson 1,125 n Poisson	100,00% 0 sion with o chlorine re 0 0 0 0 32,47% 0	0 0 0 esulting in 1 0 0 0 1 36,52% 3,65E-01	0 0 nger train large rele 3 0 0 0 0 3 28,25% 8,47E-01 7	0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01	0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30	0 carrying 100 80,28% 8,03E+01 100 0 0	0 300 0 0 300 0 0 365
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 - train colli involving c engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00	100,00% 0 sion with o chlorine ro 0 0 0 0 32,47% 0 13,53% 0	0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01	0 0 nger train large rele 3 0 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00	0 0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14 0,11% 1,54E-02	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07	0 carrying 100 80,28% 8,03E+01 100 0 0 180 0 0	0 300 0 0 0 300 0 0 365 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	Poisson 0 train colli involving c engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00	100,00% 0 sion with o chlorine ro 0 0 0 0 32,47% 0 13,53% 0 13,53% 0	0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04	0 0 0 Inger train large rele 3 0 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05	0 0 0 and one fr ase 10 0,00% 4,20E-06 2,76% 2,76E-01 4 0,11% 1,54E-02 1,00E+06	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07	0 carrying 80,28% 8,03E+01 100 0 0 180 0 0 180 0	0 300 0 0 300 0 365 0 0 0 365
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 train colli involving of engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson	100,00% 0 0 ision with chlorine re 0 0 0 0 32,47% 0 13,53% 0 13,53% 0	0 0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0	0 0 0 Inger train Jarge rele 3 0 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0	0 0 0 and one fr ase 10 0,00% 4,20E-06 2,76% 2,76E-01 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00%	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0	0 carrying 100 80,28% 8,03E+01 100 0 0 180 0 0 1,00E+08 0	0 300 0 0 0 300 0 0 365 0 0 0 365 0 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	Poisson 0 train colli involving of engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson	100,00% 0 0 ision with chlorine re 0 0 0 0 32,47% 0 13,53% 0 13,53% 0	0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04	0 0 0 Inger train large rele 3 0 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05	0 0 0 and one fr ase 10 0,00% 4,20E-06 2,76% 2,76E-01 4 0,11% 1,54E-02 1,00E+06	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07	0 carrying 80,28% 8,03E+01 100 0 0 180 0 0 180 0	0 300 0 0 300 0 365 0 0 0 365
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 train colli involving c engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05	100,00% 0 0 ision with chlorine re 0 0 0 0 32,47% 0 13,53% 0 13,53% 0	0 0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0	0 0 0 Inger train Jarge rele 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0	0 0 0 and one fr ase 10 0,00% 4,20E-06 2,76% 2,76E-01 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00%	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0	0 carrying 100 80,28% 8,03E+01 100 0 0 180 0 0 1,00E+08 0	0 300 0 0 0 300 0 0 365 0 0 0 365 0 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 train colli involving of engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05	100,00% 0 ision with chlorine re 0 0 0 0 32,47% 0 13,53% 0 1,00E+03 0 0	0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0	0 0 0 inger train large rele 3 0 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0	0 0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0	0 carrying 80,28% 8,03E+01 100 0 0 180 0 0 180 0 0 1,00E+08 0 0	0 300 0 0 300 0 365 0 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 train colli involving of engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05	100,00% 0 0 ision with chlorine re 0 0 0 0 32,47% 0 0 13,53% 0 1,00E+03 0 0	0 0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0	0 0 0 Inger train Jarge rele 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0	0 0 0 and one fr ase 10 0,00% 4,20E-06 2,76% 2,76E-01 2,76% 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0 0 0 eight train 30 19,72% 5,91E+00 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0	0 carrying 80,28% 8,03E+01 100 0 0 180 0 1,00E+08 0 0 0	0 300 0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 train colli involving c engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05	100,00% 0 sion with o chlorine ro 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0 1,00E+03 0 0 77,88%	0 0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0 0	0 0 0 nger train large rele 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0	0 0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 30 0 30	0 carrying 80,28% 8,03E+01 100 0 0 180 0 0 1,00E+08 0 0 1,00E+08 0 0	0 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 train colli involving of engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	100,00% 0 sion with o chlorine ro 0 0 0 32,47% 0 32,47% 0 13,53% 0 13,53% 0 1,00E+03 0 0 77,88%	0 0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0 0	0 0 0 nger train large rele 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0	0 0 0 and one fr ase 10 0,00% 4,20E-06 10 2,76% 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 30 0 30	0 carrying 80,28% 8,03E+01 100 0 0 180 0 0 1,00E+08 0 0 1,00E+08 0 0	0 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 3.3.8 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 train colli involving of engers Poisson 35,625 loyees Poisson 1,125 n Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	100,00% 0 sion with o chlorine ro 0 0 0 0 32,47% 0 0 13,53% 0 13,53% 0 13,00E+03 0 0 1,00E+03 0 0 77,88% 0	0 0 0 0 0 0 0 0 1 36,52% 3,65E-01 1 27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	0 0 0 nger train large rele 3 0 0 0 3 28,25% 8,47E-01 7 59,29% 4,15E+00 1,00E+05 0 0 0 1,00E+05 0 0 1,00E+05	0 0 0 and one fr ase 10 0,00% 4,20E-06 2,76% 2,76E-01 2,76% 2,76E-01 14 0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 100,00%	0 0 0 eight train 30 19,72% 5,91E+00 30 0,00% 9,83E-07 30 0,00% 1,16E-07 1,00E+07 0 0 0 0 30 0 0 0	0 carrying 100 80,28% 8,03E+01 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 300 0 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 0 365 0 0 0

3.3.9 - front- end -	train colli	sion with	one passe	nger train	and one fr	eight train	carrying	
dangerous good			-				rearrying	
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption		0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Destruction	. 4 .	4 005 00	4 005 0 4	4 005 05	4 005 00	4 005 07	4 005 00	4 005 00
Repair cos		1,00E+03		1,00E+05	-	1,00E+07	1,00E+08	
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	aad	0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	30	0	365 0
	Poisson 2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Average	2,500-01	0	1,950-01	1,052-01	4,240-09	0	0	0
Fatalities ro	ad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	•	0	0	0	0	0	0	0
3.3.10 - front- end	- train col	lision with	one passe	enger trair	and one t	freight trai	n carrving	
dangerous good			-	•		•		
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption		0	1	7	14	30	180	365
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Danainga	-to	1.005.00	1 005:04	1 005:05	1.005:00	1 005-07	1.005.00	1 005:00
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06 100,00%	1,00E+07	1,00E+08	1,00E+09 0
Distribution-type	Poisson	0	0	0	1,00E+06	0	0	0
Average	5,00E+05	U	U	U	1,000+00	U	U	U
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	30	0	365 0
Average		0	1,95E-01	2,05% 1,85E-01	4,24E-09	0	0	0
Average	2,000-01		1,350-01	1,000-01	⊣,∠ ⊣∟-09	U	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0 0	0	0	0	0	0	0	0
Average	v		U U	U	U	U	U	U

3.3.11 - front- end dangerous good			-	-		-	• •	
Fatalities pass			1	3	10	30	100	300
Distribution-type		0	0	0	0	0	85,92%	14,08%
Average		0	0	0	0	0	8,59E+01	4,22E+01
	, -	-	-		-	-	-,	, -
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Diamantia		•		-	44	20	400	205
Disruptio		0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	r	0	0	0	100,00%	0	0	0
	5,00E+05	0	0	0	1,00E+06	0	0	0
	,				,			
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
)								
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
3.3.13 - front- end dangerous good			-	-		-		
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
							-	
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio		0	1	7	14	30	180	365
Distribution-type		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Average	2,00E+00	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
De ne in eeu	-1-	4 005 00	4 005 0 4	4 005 05	4 005 000	4 005 07	4 005 00	4 005 00
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson 5,00E+05	0	0	0	100,00% 1,00E+06	0	0	0
Average	3,000703	U			1,000700	U		U
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average		0	1,95E-01	1,85E-01	4,24E-09	0	0	0
	, 	Ť	.,	.,	., _ 00	Ť	I Ť	
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-

3.3.14 - front- end dangerous good r								
Fatalities pass			1	3	10	30	100	300
Distribution-type		0	0	0	0	0	85,92%	14,08%
Average		0	0	0	0	0	8,59E+01	4,22E+01
Average	00,20	•	Ŭ	Ŭ	Ŭ	•	0,002 01	1,222 * 0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	0,002.02	Ū	Ū	Ū	Ū	Ū	Ŭ	1,002 - 02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
		-		_				
Disruption r	I	0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
	2,15E+02	0	0	0	0	0	0	3,00E+02
3.3.16 - front- end	- train col		-			-		
dangerous good Fatalities pass			resulting	in large re	lease and	30	on 100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
700000	-	-	-			-	-	-
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
								•
Disruptio		0	1	7	14	30	180	365
Distribution-type	Poisson	13,53%	27,07%	59,29%	0,11%	0,00%	0	365 0
Distribution-type								365
Distribution-type Average	Poisson 2,00E+00	13,53% 0	27,07% 2,71E-01	59,29% 4,15E+00	0,11% 1,54E-02	0,00% 1,16E-07	0 0	365 0 0
Distribution-type Average Repair cos	Poisson 2,00E+00 sts	13,53% 0 1,00E+03	27,07% 2,71E-01 1,00E+04	59,29% 4,15E+00 1,00E+05	0,11% 1,54E-02 1,00E+06	0,00% 1,16E-07 1,00E+07	0 0 1,00E+08	365 0 0 1,00E+09
Distribution-type Average Repair cos Distribution-type	Poisson 2,00E+00 sts Poisson	13,53% 0 1,00E+03 0	27,07% 2,71E-01 1,00E+04 0	59,29% 4,15E+00 1,00E+05 0	0,11% 1,54E-02 1,00E+06 100,00%	0,00% 1,16E-07 1,00E+07 0	0 0 1,00E+08 0	365 0 0 1,00E+09 0
Distribution-type Average Repair cos Distribution-type	Poisson 2,00E+00 sts	13,53% 0 1,00E+03 0	27,07% 2,71E-01 1,00E+04	59,29% 4,15E+00 1,00E+05	0,11% 1,54E-02 1,00E+06	0,00% 1,16E-07 1,00E+07	0 0 1,00E+08	365 0 0 1,00E+09
Distribution-type Average Repair cos Distribution-type	Poisson 2,00E+00 sts Poisson 5,00E+05	13,53% 0 1,00E+03 0	27,07% 2,71E-01 1,00E+04 0	59,29% 4,15E+00 1,00E+05 0	0,11% 1,54E-02 1,00E+06 100,00%	0,00% 1,16E-07 1,00E+07 0	0 0 1,00E+08 0	365 0 0 1 ,00E+09 0
Distribution-type Average Repair cos Distribution-type Average	Poisson 2,00E+00 sts Poisson 5,00E+05	13,53% 0 1,00E+03 0 0	27,07% 2,71E-01 1,00E+04 0 0	59,29% 4,15E+00 1,00E+05 0 0	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0,00% 1,16E-07 1,00E+07 0 0	0 0 1,00E+08 0 0	365 0 0 1,00E+09 0 0
Distribution-type Average Repair cos Distribution-type Average Disruption r	Poisson 2,00E+00 sts Poisson 5,00E+05 oad	13,53% 0 1,00E+03 0 0	27,07% 2,71E-01 1,00E+04 0 0	59,29% 4,15E+00 1,00E+05 0 0 7	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14	0,00% 1,16E-07 1,00E+07 0 0	0 0 1,00E+08 0 0 180	365 0 0 1,00E+09 0 0 365
Distribution-type Average Repair cos Distribution-type Average Distribution r Distribution rype	Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson	13,53% 0 1,00E+03 0 0 0 77,88%	27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47%	59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65%	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14 0	0,00% 1,16E-07 1,00E+07 0 0 0 30 0	0 0 1,00E+08 0 0 180 0	365 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average Repair cos Distribution-type Average Distribution r Distribution rype	Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	13,53% 0 1,00E+03 0 0 77,88% 0 0	27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01 3	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14 0 4,24E-09 10	0,00% 1,16E-07 1,00E+07 0 0 0 30 0 0	0 0 1,00E+08 0 0 180 0	365 0 0 1,00E+09 0 0 0 365 0
Distribution-type Average Repair cos Distribution-type Average Disruption r Distribution-type Average	Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	13,53% 0 1,00E+03 0 0 0 77,88% 0	27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14 0 4,24E-09	0,00% 1,16E-07 1,00E+07 0 0 30 30 0 0	0 0 1,00E+08 0 0 180 0 0	365 0 0 1,00E+09 0 0 0 365 0 0

3.3.18 - front- end dangerous good			-	-				
Fatalities pass				3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
		-	-	-	-	-	-	-
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair co	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	1	0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities re	bad	0	1	3	10	30	100	300
	1							
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
	1	100,00% 0	0	0	0	0	0	0
Distribution-type Average 3.3.19 - front- end dangerous good	Poisson 0 I - train col involving I	0 lision with pg resultir	0 one passeng in small	0 enger train release a	0 and one t and no ign	0 freight trai ition	0 n carrying	0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass	Poisson 0 I - train col involving I engers	0 lision with pg resultir 0	0 one passe ng in small 1	0 enger trair release a 3	0 a and one t and no ign 10	0 freight trai ition 30	0 n carrying 100	0 300
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type	Poisson 0 I - train col involving I engers Poisson	0 lision with pg resultir 0 100,00%	0 none passe ng in small 1 0	0 enger trair release a 3 0	0 a and one f and no ign 10 0	0 freight trai ition 30 0	0 n carrying 100 0	0 300 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass	Poisson 0 I - train col involving I engers Poisson	0 lision with pg resultir 0	0 one passe ng in small 1	0 enger trair release a 3	0 a and one t and no ign 10	0 freight trai ition 30	0 n carrying 100	0 300
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average	Poisson 0 I - train col involving I engers Poisson 0	0 lision with pg resultir 0 100,00% 0	0 none passe ng in small 1 0 0	0 enger train release a 3 0 0	0 a and one f and no ign 10 0 0	0 freight trai ition 30 0 0	0 n carrying 100 0	0 300 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 I - train col involving I engers Poisson 0 Ioyees	0 lision with pg resultir 0 100,00% 0	0 one passe in small 1 0 0	0 enger train release a 3 0 0 0	0 a and one f and no ign 10 0 0	0 freight trai ition 30 0 0 30	0 n carrying 100 0 100	0 300 0 0 300
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson	0 lision with pg resultir 0 100,00% 0 100,00%	0 one passe ng in small 1 0 0 1 0	0 enger train release a 3 0 0 0 3 0	0 and one f and no ign 10 0 0 10 0	0 freight trai ition 30 0 30 0	0 n carrying 100 0 100 0	0 300 0 0 300 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson	0 lision with pg resultir 0 100,00% 0	0 one passe in small 1 0 0	0 enger train release a 3 0 0 0	0 a and one f and no ign 10 0 0	0 freight trai ition 30 0 0 30	0 n carrying 100 0 100	0 300 0 0 300
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson 0	0 lision with pg resultir 0 100,00% 0 100,00%	0 one passe ng in small 1 0 0 1 0	0 enger train release a 3 0 0 0 3 0	0 and one f and no ign 10 0 0 10 0	0 freight trai ition 30 0 30 0	0 n carrying 100 0 100 0	0 300 0 0 300 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson 0	0 lision with pg resultir 0 100,00% 0 100,00% 0	0 one passe ng in small 1 0 0 1 0	0 enger trair release a 3 0 0 0 3 0 0	0 a and one f and no ign 10 0 0 10 0 0	0 freight trai ition 30 0 30 0 0	0 n carrying 100 0 0 100 0 0	0 300 0 0 300 0 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 - train col involving l engers Poisson 0 loyees Poisson 0	0 lision with pg resultir 0 100,00% 0 100,00% 0	0 one passe ng in small 1 0 0 1 0 0 1 1	0 enger train release a 3 0 0 0 3 0 0 7	0 a and one t and no ign 10 0 0 10 0 0	0 freight trai ition 30 0 0 30 0 30	0 n carrying 100 0 0 100 0 180	0 300 0 0 300 0 0 0 365
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col involving l engers Poisson 0 loyees Poisson 0	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 0	0 one passe in small 1 0 0 1 0 0 1 0 0 1 0 0	0 enger trair release a 3 0 0 0 3 0 0 0 7 0	0 a and one f and no ign 10 0 0 10 0 0 10 0 10	0 freight trai ition 30 0 0 30 0 30 0 30 0 30	0 n carrying 100 0 0 100 0 0 180 99,64%	0 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson 0 N Poisson 4,80E+01	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 0	0 one passe in small 1 0 0 1 0 0 1 0 0 1 0 0	0 enger trair release a 3 0 0 0 3 0 0 0 7 0	0 and one t and no ign 10 0 0 10 0 0 10 0 0 110 0 0 110 0 0 110 0 110 0 0 110 0 0	0 freight trai ition 30 0 0 30 0 30 0 30 0 30	0 n carrying 100 0 0 100 0 0 180 99,64%	0 300 0 0 300 0 0 0 365 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson 0 n Poisson 4,80E+01 sts	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 0 0	0 one passe ng in small 1 0 0 1 0 0 1 0 0 0	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0	0 and one t and no ign 10 0 0 0 10 0 0 10 0 0 110 0 0 110 0 0 110 0 110 0 0 110 0 110 0 0 110 0 10 0 10 1	0 freight trai ition 30 0 0 30 0 30 0,36% 1,09E-01	0 n carrying 100 0 0 100 0 0 180 99,64% 1,79E+02	0 300 0 0 0 300 0 0 365 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	Poisson 0 - train col involving I engers Poisson 0 Ioyees Poisson 0 n Poisson 4,80E+01 sts Poisson	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0	0 one passe og in small 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05	0 a and one f and no ign 10 0 0 0 10 0 0 10 0 0 10 0 0 10 0 10	0 freight trai ition 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 1,09E-01	0 n carrying 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08	0 300 0 0 0 300 0 0 0 365 0 0 0 365 0 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col involving I engers Poisson 0 Ioyees Poisson 0 n Poisson 4,80E+01 sts Poisson	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0	0 one passe in small 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0 7 0 0 0 1,00E+05 0	0 a and one f and no ign 10 0 0 0 10 0 0 10 0 0 11 0 0 0 11 0 0 0 11 0 0 0 10 0 0 0 10 0 0 0 10 0 0 10 1	0 freight trai ition 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0	0 n carrying 100 0 0 100 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	0 300 0 0 0 300 0 365 0 0 0 365 0 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson 0 N Poisson 4,80E+01 sts Poisson 5,00E+05	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0	0 one passe in small 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0 7 0 0 0 1,00E+05 0	0 a and one f and no ign 10 0 0 0 10 0 0 10 0 0 11 0 0 0 11 0 0 0 11 0 0 0 10 0 0 0 10 0 0 0 10 0 0 10 1	0 freight trai ition 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0	0 n carrying 100 0 0 100 0 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0	0 300 0 0 0 300 0 365 0 0 0 365 0 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col involving I engers Poisson 0 Ioyees Poisson 0 N Poisson 4,80E+01 sts Poisson 5,00E+05	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 one passe in small 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0 7 0 0 0 1,00E+05 0 0	0 a and one f and no ign 10 0 0 0 10 0 0 10 0 0 10 0 0 1,10E-07 1,00E+06 100,00% 1,00E+06	0 freight trai ition 30 0 30 0 30 0 0 30 0 30 0 0 1,09E-01 1,00E+07 0 0 0	0 n carrying 100 0 0 100 0 100 0 180 99,64% 1,79E+02 1,00E+08 0 0	0 300 0 0 300 0 365 0 0 365 0 0 1,00E+09 0 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col involving I engers Poisson 0 Ioyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+05 coad Poisson	0 lision with pg resultir 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0	0 one passe ng in small 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1 1	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	0 and one t ind no ign 10 0 0 10 0 0 10 0 0 11 0 0 0 11 0 0 0 1 10 0 0 1 10 0 0 10 0 0 11 10 0 0 10 1	0 freight trai ition 30 0 0 30 0 0 30 0 0 30 0 0 0 1,09E-01 1,09E+07 0 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 0 30 3	0 n carrying 100 0 0 100 0 180 99,64% 1,79E+02 1,00E+08 0 0 0	0 300 0 0 300 0 365 0 0 0 365 0 1,00E+09 0 0 0
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col involving I engers Poisson 0 Ioyees Poisson 0 n Poisson 4,80E+01 sts Poisson 5,00E+05 coad Poisson	0 lision with pg resultir 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 1,00E+03 0 0 0 77,88%	0 one passe ig in small 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 1 0 1 0 1 0 1 1 0 1 1 0 1 0 1 1 0 1 1 0 1 1 0 1 0 1 1 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 1,00E+05 0 0 7 2,65%	0 and one to ind no ign 10 0 0 0 10 0 0 10 0 0 10 0 0 1,10E-07 1,00E+06 100,00% 1,00E+06	0 freight trai ition 30 0 0 30 0 30 0,36% 1,09E-01 1,09E+07 0 0 30 0 30 0 30 0 30 0 0 30 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 n carrying 100 0 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0 1,79E+02	0 300 0 0 0 300 0 365 0 0 0 1,00E+09 0 0 0 1,00E+09
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 - train col involving I engers Poisson 0 Ioyees Poisson 0 N Poisson 4,80E+01 sts Poisson 5,00E+05 Coad Poisson 2,50E-01	0 lision with pg resultir 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 77,88%	0 one passe ig in small 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 1 0 0 0 1 0 1 1 0 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 0 1 1 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 1,00E+05 0 0 7 2,65%	0 and one to ind no ign 10 0 0 0 10 0 0 10 0 0 10 0 0 1,10E-07 1,00E+06 100,00% 1,00E+06	0 freight trai ition 30 0 0 30 0 30 0,36% 1,09E-01 1,09E+07 0 0 30 0 30 0 30 0 30 0 0 30 0 0 30 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 n carrying 100 0 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 180 0 0 180 0 0 180 0 0 1,79E+02	0 300 0 0 0 300 0 365 0 0 0 1,00E+09 0 0 0 1,00E+09
Distribution-type Average 3.3.19 - front- end dangerous good Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 I - train col involving I engers Poisson 0 Ioyees Poisson 0 N Poisson 4,80E+01 sts Poisson 5,00E+05 road Poisson 2,50E-01	0 lision with pg resultir 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 one passe ng in small 1 0 0 1 0 0 1 0 0 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 1 0 0 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1	0 enger train release a 3 0 0 0 3 0 0 0 7 0 0 1,00E+05 0 0 0 7 2,65% 1,85E-01	0 and one t ind no ign 10 0 0 0 10 0 0 10 0 0 1 10 0 0 1 10 0 0 1,10E-07 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	0 freight trai ition 30 0 0 30 0 0 30 0 0 1,09E-01 1,09E+07 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 n carrying 100 0 0 100 0 100 0 0 180 99,64% 1,79E+02 1,00E+08 0 0 0 180 0 0 0	0 300 0 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

3.3.20 - front- end dangerous good			-	-		-		
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	85,92%	14,08%
Average		0	0	0	0	0	8,59E+01	4,22E+0
///////////////////////////////////////	,						0,002 01	.,
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Diamantia		•		-	44	20	400	205
Disruption	r	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro		0	1	3	10	30	100	300
	· · · · · · · · · · · · · · · · · · ·	0	0	0	0	0	0	100,00%
Distribution-type		0				0		
3.3.22 - front- end	2,15E+02	-	0	0	0	-	0	3,00E+02
dangerous good i			-					J
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
-							•	•
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type		5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruption		0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1 00F+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
	5,00E+05		0	0	1,00E+06	0	0	0
Avelage	3,002.03	0	0	0	1,000 100	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average		0	1,95E-01	1,85E-01	4,24E-09	0	0	0
5		·		·	·		•	•
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
Δνοτοσο	2,15E+02	0	0	0	0	0	0	3,00E+02

3.3.24 - front- end	- train col	lision with	one passe	enger trair	and one	ireight trai	n carrving	
dangerous good			-	-		-		
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0,00%	0,36%	99,64%	0
Average	4,80E+01	0	0	0	1,10E-07	1,09E-01	1,79E+02	0
Repair cos		•	1,00E+04	1,00E+05			-	
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
D		•		-			400	0.07
Disruption r		0	10.470/	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro		•	4	•	40	20	400	200
		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3 3 25 - front- end	- train col	lision with	one nass	onger train	and one f	freight trai	n carrving	
3.3.25 - front- end dangerous good								
3.3.25 - front- end dangerous good Fatalities pass	involving l							
dangerous good	involving l	pg,mediur	n release	resulting in	n delayed	ignition a	nd explos	ion
dangerous good Fatalities pass	involving l engers	pg,mediur 0	n release 1	resulting in 3	n delayed 10	ignition a 30	nd explosi 100	ion 300
dangerous good Fatalities pass Distribution-type	involving l engers Poisson	pg,mediu r 0 0	n release 1 0	resulting in 3 0	n delayed 10 0	ignition a 30 0	nd explosi 100 85,92%	ion 300 14,08%
dangerous good Fatalities pass Distribution-type	involving l engers Poisson 90,25	pg,mediu r 0 0	n release 1 0	resulting in 3 0	n delayed 10 0	ignition a 30 0	nd explosi 100 85,92%	ion 300 14,08%
dangerous good i Fatalities pass Distribution-type Average	involving l engers Poisson 90,25	pg,mediur 0 0	n release 1 0 0	resulting in 3 0 0	n delayed 10 0 0	ignition a 30 0 0	nd explosi 100 85,92% 8,59E+01	ion 300 14,08% 4,22E+01
dangerous good Fatalities pass Distribution-type Average Fatalities emp	involving l engers Poisson 90,25 loyees	pg,mediur 0 0 0	n release 1 0 0	resulting in 3 0 0 3	n delayed 10 0 0 10	ignition a 30 0 0 30	nd explosi 100 85,92% 8,59E+01 100	ion 300 14,08% 4,22E+01 300
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 90,25 Poisson 90,25 loyees Poisson	pg,mediur 0 0 0 5,78%	n release 1 0 0 1 16,49%	resulting in 3 0 0 3 45,81%	n delayed 10 0 0 10 31,90%	ignition a 30 0 0 0 30 0,02%	nd explosi 100 85,92% 8,59E+01 100 0	ion 300 14,08% 4,22E+01 300 0
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 90,25 loyees 2,85	pg,mediur 0 0 0 5,78%	n release 1 0 0 1 16,49%	resulting in 3 0 0 3 45,81%	n delayed 10 0 0 10 31,90%	ignition a 30 0 0 0 30 0,02%	nd explosi 100 85,92% 8,59E+01 100 0	ion 300 14,08% 4,22E+01 300 0
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type	involving l engers Poisson 90,25 loyees Poisson 2,85 n Poisson	pg,mediur 0 0 0 5,78% 0 0 0	n release 1 0 0 1 16,49% 1,65E-01 1 0	resulting in 3 0 0 3 45,81% 1,37E+00	n delayed 10 0 0 10 31,90% 3,19E+00 14 0	ignition a 30 0 0 30 0,02% 5,71E-03	nd explosi 100 85,92% 8,59E+01 100 0 0	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39%
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type	n volving l engers Poisson 90,25 loyees Poisson 2,85	pg,mediur 0 0 0 5 ,78% 0 0 0	n release 1 0 0 1 16,49% 1,65E-01 1	resulting in 3 0 0 3 45,81% 1,37E+00 7	n delayed 10 0 0 10 31,90% 3,19E+00 14	ignition a 30 0 0 30 30 5,71E-03 30	nd explosi 100 85,92% 8,59E+01 100 0 0 180	ion 300 14,08% 4,22E+01 300 0 0 0 365
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Average	Poisson 2,85 Poisson 3,65E+02	pg,mediur 0 0 0 5,78% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 0	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 0	n delayed 10 0 0 10 31,90% 3,19E+00 14 0 0 0	ignition a 30 0 0 30 30 5,71E-03 30 0 0 0	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 0 0	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	Poisson 2,85 Poisson 30,25 Poisson 2,85 Poisson 3,65E+02	pg,mediur 0 0 0 5,78% 0 0 0 0 1,00E+03	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 1,00E+05	n delayed 10 0 10 31,90% 3,19E+00 14 0 0 0 1,00E+06	ignition a 30 0 0 30 30 0,02% 5,71E-03 30 0 0 0 1,00E+07	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 0 1,00E+08	ion 300 14,08% 4,22E+01 300 0 0 0 0 0 51,39% 1,88E+02 1,00E+09
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 2,85 Poisson 3,65E+02 Poisson	pg,mediur 0 0 0 5 ,78% 0 0 0 0 1,00E+03 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04 0	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 1,00E+05 0	n delayed 10 0 10 31,90% 3,19E+00 14 0 0 1,00E+06 100,00%	ignition a 30 0 0 30 30 0,02% 5,71E-03 30 0 0 0 1,00E+07	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 1,00E+08 0	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 2,85 Poisson 30,25 Poisson 2,85 Poisson 3,65E+02	pg,mediur 0 0 0 5,78% 0 0 0 0 1,00E+03	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 1,00E+05	n delayed 10 0 10 31,90% 3,19E+00 14 0 0 0 1,00E+06	ignition a 30 0 0 30 30 0,02% 5,71E-03 30 0 0 0 1,00E+07	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 0 1,00E+08	ion 300 14,08% 4,22E+01 300 0 0 0 0 0 51,39% 1,88E+02 1,00E+09
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving l engers Poisson 90,25 Noyees Poisson 2,85 N Poisson 3,65E+02 Sts Poisson 5,00E+05	pg,mediur 0 0 0 5 ,78% 0 0 0 0 1,00E+03 0 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 0 1,00E+04 0 0 0	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0 0	n delayed 10 0 10 31,90% 3,19E+00 14 0 0 1,00E+06 1,00E+06	ignition a 30 0 0 0 30 0 30 0 5,71E-03 0 30 0 0 0 1,00E+07 0 0 0 0 0	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 0 1,00E+08 0 0 0	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	involving l engers Poisson 90,25 Ioyees Poisson 2,85 Poisson 3,65E+02 Sts Poisson 5,00E+05	pg,mediu 0 0 0 5,78% 0 0 0 1,00E+03 0 0 0 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 1,00E+05 0 0 7 7	n delayed 10 0 0 31,90% 31,90% 31,90% 31,90% 1,00E+00 1,00E+06 1,00E+06 1,00E+06 1,00E+06	ignition a 30 0 0 30 30 5,71E-03 30 0 0 1,00E+07 0 0 0 30	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 1,00E+08 0 0 180	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving l engers Poisson 90,25 Ioyees Poisson 2,85 Poisson 3,65E+02 sts Poisson 5,00E+05	pg,mediur 0 0 0 5,78% 0 0 0 0 0 1,00E+03 0 0 0 77,88%	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04 0 0 1,00E+04 1 19,47%	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0 0 7 2,65%	n delayed 10 0 0 10 31,90% 31,90% 3,19E+00 14 0 100,00% 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	ignition a 30 0 0 30 30 5,71E-03 30 0 0 1,00E+07 0 0 30 30 30 0	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 1,00E+08 0 0 180 0 0	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365 365 0
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	involving l engers Poisson 90,25 Ioyees Poisson 2,85 Poisson 3,65E+02 Sts Poisson 5,00E+05	pg,mediu 0 0 0 5,78% 0 0 0 1,00E+03 0 0 0 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 1,00E+05 0 0 7 7	n delayed 10 0 0 31,90% 31,90% 31,90% 31,90% 1,00E+00 1,00E+06 1,00E+06 1,00E+06 1,00E+06	ignition a 30 0 0 30 30 5,71E-03 30 0 0 1,00E+07 0 0 0 30	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 1,00E+08 0 0 180	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving l engers Poisson 90,25 Ioyees Poisson 2,85 Poisson 3,65E+02 Sts Poisson 5,00E+05 Oad Poisson 2,50E-01	pg,mediur 0 0 0 5,78% 0 0 0 0 1,00E+03 0 0 1,00E+03 0 0 77,88% 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04 0 0 1 19,47% 1,95E-01	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 1,00E+05 0 0 0 7 2,65% 1,85E-01	delayed 10 0 0 31,90% 31,90% 31,90% 31,90% 100 100 100 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	ignition a 30 0 0 0 30 0 30 0 5,71E-03 0 30 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 1,00E+08 0 0 180 0 0 180 0 0	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,88E+02 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
dangerous good i Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Composition representation of the term Distribution of the term Average	Poisson 2,85 Poisson 3,65E+02 Poisson 5,00E+05 cad	pg,mediur 0 0 0 5,78% 0 0 0 0 0 1,00E+03 0 0 0 77,88% 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 0 1,00E+04 0 0 1,00E+04 1 19,47% 1,95E-01 1	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 0 1,00E+05 0 0 0 7 2,65% 1,85E-01 3	n delayed 10 0 0 10 31,90% 3,19E+00 14 0 100,00% 1,00E+06 100,00% 1,00E+06 0 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	ignition a 30 0 0 0 30 0 30 0 5,71E-03 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 0 30 0 0 0 30 0 30 0 30 0 30 0 30 0 30 0	nd explos 100 85,92% 8,59E+01 100 0 0 180 0 0 1,00E+08 0 0 1,00E+08 0 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 180 0 0 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	ion 300 14,08% 4,22E+01 300 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365 0 0 0 365 365 0 0 0 365 0 0 0 365 365 0 0 0 365 365 0 0 0 365 365 0 0 0 365 365 365 365 365 365 365 365
dangerous good is Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	involving l engers Poisson 90,25 Ioyees Poisson 2,85 Poisson 3,65E+02 Sts Poisson 5,00E+05 Oad Poisson 2,50E-01	pg,mediur 0 0 0 5,78% 0 0 0 0 1,00E+03 0 0 0 77,88% 0	n release 1 0 0 1 16,49% 1,65E-01 1 0 0 1,00E+04 0 0 1 19,47% 1,95E-01	resulting in 3 0 0 3 45,81% 1,37E+00 7 0 0 1,00E+05 0 0 0 7 2,65% 1,85E-01	delayed 10 0 0 31,90% 31,90% 31,90% 31,90% 100 100 100 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	ignition a 30 0 0 0 30 0 30 0 5,71E-03 0 30 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	nd explosi 100 85,92% 8,59E+01 100 0 0 180 0 1,00E+08 0 0 180 0 0 180 0 0	ion 300 14,08% 4,22E+01 300 0 0 0 365 51,39% 1,88E+02 1,88E+02 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

3.3.27 - front- end			-					
dangerous good Fatalities pass		pg,meaiur 0	n release	resulting I	n immedia 10	30	100	e 300
Distribution-type		0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
Average	30,23	Ū	0	0	0	0	0,000	4,220101
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	3,032+02	0	0	0	0	0	0	1,001+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
		•		-			400	005
Disruption r	[0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
	2,15E+02	0	0	0	0	0	0	3,00E+02
3.3.29 - front- end	- train col					freight trai	in carrying	
dangerous good Fatalities pass		pg, large i 0	release res	sulting in r	10 Ignition 10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
7000080			_	.	-	-	, ,	
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption		0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0,00%	100,00%	0
Average	7,20E+01	0	0	0	0	5,39E-07	1,80E+02	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average		0	0	0	1,00E+06	0	0	0
700002	-,				.,		-	
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Entolities	ad	0	4	2	40	20	400	200
Fatalities ro		0 100,00%	1	3 0	10	30 0	100	300
Distribution-type	Poisson						-	-
Average	0	0	0	0	0	0	0	0

3.3.30 - front- end dangerous good			-	-		-		
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	85,92%	14,08%
Average	90,25	0	0	0	0	0	8,59E+01	4,22E+01
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	5,78%	16,49%	45,81%	31,90%	0,02%	0	0
Average	2,85	0	1,65E-01	1,37E+00	3,19E+00	5,71E-03	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	1	0	0	0	0	0	0	51,39%
, ,	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	3,032+02	0	0	0	0	0	0	1,001+02
Repair co	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Diamatian		•		-	44	20	400	205
Disruption r	1	0	1	7	14	30	180	365
Distribution-type		77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities re	oad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
	2,15E+02	0	0	0	0	0	0	3,00E+02
3.3.33 - front- end dangerous good Fatalities pass	involving a				e		n carrying	
Distribution-type	Poisson	0			10	30	100	300
Average		100 00%	0		10	30	100	300
	0	100,00% 0	0	0 0	10 0 0	30 0 0	100 0 0	300 0 0
E - 4 - 1141	0	0	0	0	0	0	0	0
Fatalities emp	0 Ioyees	0	0	0 0 3	0 0 10	0 0 30	0 0 100	0 0 300
Distribution-type	0 loyees Poisson	0 0 100,00%	0 1 0	0 0 3 0	0 0 10 0	0 0 30 0	0 0 100 0	0 0 300 0
-	0 loyees Poisson	0	0	0 0 3	0 0 10	0 0 30	0 0 100	0 0 300
Distribution-type	0 loyees Poisson 0	0 0 100,00%	0 1 0	0 0 3 0	0 0 10 0	0 0 30 0	0 0 100 0	0 0 300 0
Distribution-type Average Disruptio	0 loyees Poisson 0 n	0 0 100,00% 0	0 1 0 0	0 0 3 0 0	0 0 10 0 0	0 0 30 0 0	0 0 100 0 0	0 0 300 0 0
Distribution-type Average	0 Ioyees Poisson 0 n Poisson	0 0 100,00% 0	0 1 0 0	0 0 3 0 0 7	0 0 10 0 0	0 0 30 0 0 30	0 0 100 0 0 180	0 0 300 0 0 365
Distribution-type Average Disruptio Distribution-type Average	0 Poisson 0 n Poisson 1,00E+00	0 0 100,00% 0 36,79% 0	0 1 0 0 1 36,79% 3,68E-01	0 0 0 0 0 7 26,42% 1,85E+00	0 0 10 0 0 0 14 1,43E-04	0 0 30 0 0 30 0 0 0	0 0 0 0 0 0 180 0 0	0 0 300 0 0 365 0 0
Distribution-type Average Disruptio Distribution-type Average Repair cos	0 loyees Poisson 0 n Poisson 1,00E+00	0 0 100,00% 0 36,79% 0 1,00E+03	0 1 0 0 1 36,79% 3,68E-01 1,00E+04	0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05	0 0 10 0 0 0 14 0,00% 1,43E-04	0 0 30 0 0 30 0 0 0 1,00E+07	0 0 100 0 0 180 0 0 0 1,00E+08	0 0 300 0 0 365 0 0 0 1,00E+09
Distribution-type Average Disruptio Distribution-type Average Repair cos Distribution-type	0 Poisson 0 n Poisson 1,00E+00 sts Poisson	0 0 100,00% 0 36,79% 0 1,00E+03 0	0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0	0 0 0 0 0 7 26,42% 1,85E+00 1,00E+05 0	0 0 0 10 0 0 14 0,00% 1,43E-04 1,00 E+06 100,00%	0 0 30 0 0 30 0 0 0 1,00E+07	0 0 0 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average Disruptio Distribution-type Average Repair cos Distribution-type	0 loyees Poisson 0 n Poisson 1,00E+00	0 0 100,00% 0 36,79% 0 1,00E+03	0 1 0 0 1 36,79% 3,68E-01 1,00E+04	0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05	0 0 10 0 0 0 14 0,00% 1,43E-04	0 0 30 0 0 30 0 0 0 1,00E+07	0 0 100 0 0 180 0 0 0 1,00E+08	0 0 300 0 0 365 0 0 0 1,00E+09
Distribution-type Average Disruptio Distribution-type Average Repair cos Distribution-type	0 Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 0 100,00% 0 36,79% 0 1,00E+03 0	0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0	0 0 0 0 0 7 26,42% 1,85E+00 1,00E+05 0	0 0 0 10 0 0 14 0,00% 1,43E-04 1,00 E+06 100,00%	0 0 30 0 0 30 0 0 0 1,00E+07	0 0 0 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average Disruptio Distribution-type Average Distribution-type Average	0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 0 100,00% 0 36,79% 0 1,00E+03 0 0	0 1 0 0 1 36,79% 3,68E-01 1,00E+04 0 0	0 0 0 0 0 7 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0	0 0 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 1,00E+06	0 0 0 30 0 0 30 0 0 1,00E+07 0 0	0 0 0 0 0 180 0 0 0 1,00E+08 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0
Distribution-type Average Disruptio Distribution-type Average Distribution-type Average Distribution-type Average	0 Ioyees Poisson 0 Poisson 1,00E+00 sts Poisson 5,00E+05 road Poisson	0 0 100,00% 0 36,79% 0 1,00E+03 0 0 0	0 1 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0	0 0 0 3 0 0 0 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0 0	0 0 0 10 0 0 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	0 0 30 0 0 0 30 0 0 1,00E+07 0 0 0 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Distribution-type Average	0 Ioyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05 road Poisson 2,50E-01	0 0 100,00% 0 36,79% 0 36,79% 0 0 1,00E+03 0 0 77,88% 0	0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	0 0 0 3 0 0 0 26,42% 1,85E+00 1,85E+00 0 0 0 7 2,65% 1,85E-01	0 0 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Fatalities re	0 Ioyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05 road Poisson 2,50E-01	0 0 100,00% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 77,88% 0	0 1 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 1 19,47% 1,95E-01 1	0 0 0 3 0 0 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01	0 0 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06 100,00% 4,24E-09	0 0 30 0 0 0 30 0 0 0 1,00E+07 0 0 0 30 0 0 0 30 0 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Distribution-type Average	0 Ioyees Poisson 0 Poisson 1,00E+00 sts Poisson 5,00E+05 road Poisson 2,50E-01 poisson	0 0 100,00% 0 36,79% 0 36,79% 0 0 1,00E+03 0 0 77,88% 0	0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	0 0 0 3 0 0 0 26,42% 1,85E+00 1,85E+00 0 0 0 7 2,65% 1,85E-01	0 0 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	0 0 0 30 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0

3.3.34 - front- end dangerous good i			-	-		freight trai	n carrying	
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
		13,53%	27,07%	59,29%	0,11%	0,00%	0	0
Distribution-type	Poisson	0	2,71E-01	4,15E+00	1,54E-02	1,16E-07	0	0
Average	2,00E+00	0	2,710-01	4,130+00	1,54⊏-02	1,102-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+0
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
	5,00E+05	0	0	0	1,00E+06	0	0	0
5			•				•	
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.3.35 - front- end dangerous good Fatalities pass	involving a		-	-	and one f	freight trai 30	n carrying	300
Distribution-type		100,00%	0	0	0	30	0	0
Average	Poisson 0	0	0	0	0	0	0	0
Avelage	•	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
5							•	
Disruption	n	0	4					
		0	1	7	14	30	180	365
	Poisson	0 13,53%	1 27,07%	7 59,29%	0,11%	0,00%	0	365 0
	[0	
	Poisson 2,00E+00	13,53% 0	27,07% 2,71E-01	59,29% 4,15E+00	0,11% 1,54E-02	0,00% 1,16E-07	0 0	0
Average Repair cos	Poisson 2,00E+00	13,53% 0 1,00E+03	27,07% 2,71E-01 1,00E+04	59,29% 4,15E+00 1,00E+05	0,11% 1,54E-02 1,00E+06	0,00% 1,16E-07 1,00E+07	0 0 1,00E+08	0 0 1,00E+0
Average Repair cos Distribution-type	Poisson 2,00E+00 sts Poisson	13,53% 0 1,00E+03 0	27,07% 2,71E-01 1,00E+04 0	59,29% 4,15E+00 1,00E+05 0	0,11% 1,54E-02 1,00E+06 100,00%	0,00% 1,16E-07 1,00E+07 0	0 0 1,00E+08 0	0 0 1,00E+0 0
Average Repair cos Distribution-type	Poisson 2,00E+00 sts Poisson	13,53% 0 1,00E+03	27,07% 2,71E-01 1,00E+04	59,29% 4,15E+00 1,00E+05	0,11% 1,54E-02 1,00E+06	0,00% 1,16E-07 1,00E+07	0 0 1,00E+08	0 0 1,00E+0
Average Repair cos Distribution-type Average	Poisson 2,00E+00 sts Poisson 5,00E+05	13,53% 0 1,00E+03 0 0	27,07% 2,71E-01 1,00E+04 0 0	59,29% 4,15E+00 1,00E+05 0 0	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06	0,00% 1,16E-07 1,00E+07 0 0	0 0 1,00E+08 0 0	0 0 1,00E+0 0 0
Average Repair cos Distribution-type Average Disruption r	Poisson 2,00E+00 sts Poisson 5,00E+05 oad	13,53% 0 1,00E+03 0 0	27,07% 2,71E-01 1,00E+04 0 0	59,29% 4,15E+00 1,00E+05 0 0	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14	0,00% 1,16E-07 1,00E+07 0 0	0 0 1,00E+08 0 0	0 0 1,00E+0 0 0 365
Average Repair cost Distribution-type Average Disruption r Distribution-type	Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson	13,53% 0 1,00E+03 0 0 0 77,88%	27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47%	59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65%	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14 0	0,00% 1,16E-07 1,00E+07 0 0 0 30	0 0 1,00E+08 0 0 180 0	0 0 1,00E+0 0 0 365 0
Average Repair cos Distribution-type Average Disruption r	Poisson 2,00E+00 sts Poisson 5,00E+05 oad	13,53% 0 1,00E+03 0 0	27,07% 2,71E-01 1,00E+04 0 0	59,29% 4,15E+00 1,00E+05 0 0	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14	0,00% 1,16E-07 1,00E+07 0 0	0 0 1,00E+08 0 0	0 0 1,00E+0 0 0 365
Average Repair cost Distribution-type Average Disruption r Distribution-type	Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	13,53% 0 1,00E+03 0 0 0 77,88%	27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47%	59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65%	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14 0	0,00% 1,16E-07 1,00E+07 0 0 0 30	0 0 1,00E+08 0 0 180 0	0 0 1,00E+0 0 0 365 0
Average Repair cos Distribution-type Average Disruption r Distribution-type Average	Poisson 2,00E+00 sts Poisson 5,00E+05 oad Poisson 2,50E-01	13,53% 0 1,00E+03 0 0 0 77,88% 0	27,07% 2,71E-01 1,00E+04 0 0 0 1 19,47% 1,95E-01	59,29% 4,15E+00 1,00E+05 0 0 0 7 2,65% 1,85E-01	0,11% 1,54E-02 1,00E+06 100,00% 1,00E+06 14 0 4,24E-09	0,00% 1,16E-07 1,00E+07 0 0 0 30 0 0	0 0 1,00E+08 0 0 180 0 0	0 0 1,00E+0 0 0 365 0 0

3.3.36 - front- end	- train col	lision with	one passe	enger trair	and one	freight trai	n carrying	
dangerous good	involving a	acid and r	esulting in	large rele	ease			
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	77,88%	19,47%	2,65%	0	0	0	0
Average	2,50E-01	0	1,95E-01	1,85E-01	4,24E-09	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

3.4.1 - front-end - ammonia resultir			two freigh	it trains ca	rrying dan	gerous go	oas invoiv	/ing
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
		100,00%	0	0	0	0	0	0
Distribution-type	Poisson	100,0070	-					
Distribution-type Average	Poisson 0	0	0	0	0	0	0	0
Average 3.4.2 - front- end - ammonia resultir	0 - train coll ng in small	0 lision with release	two freigh	it trains ca	rrying dan	gerous go	ods involv	/ing
Average 3.4.2 - front- end - ammonia resultir Fatalities pass	0 - train coll ng in small engers	0 lision with release 0	two freigh	nt trains ca 3	rrying dan 10	gerous go 30	ods involv 100	/ing 300
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type	0 - train coll ing in small engers Poisson	0 lision with release 0 100,00%	two freigh	t trains ca 3 0	rrying dan 10 0	gerous go 30 0	ods involv 100 0	300
Average 3.4.2 - front- end - ammonia resultir Fatalities pass	0 - train coll ing in small engers Poisson	0 lision with release 0	two freigh	nt trains ca 3	rrying dan 10	gerous go 30	ods involv 100	/ing 300
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average	0 - train coll ng in small engers Poisson 0	0 ision with release 0 100,00% 0	two freigh	at trains ca	rrying dan 10 0 0	gerous go 30 0 0	ods involv 100 0 0	300 0 0
Average 3.4.2 - front- end ammonia resultir Fatalities pass Distribution-type Average Fatalities emp	0 - train coll ng in small engers Poisson 0 loyees	0 ision with release 0 100,00% 0	two freigh	at trains ca	rrying dan 10 0 10 10	gerous go 30 0 0 30	ods involv 100 0 100	ving 300 0 0 300
Average 3.4.2 - front- end ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 - train coll ing in small engers Poisson 0 loyees Poisson	0 ision with release 0 100,00% 0 100,00%	two freigh	3 0 0 3 0	rrying dan 10 0 10 0 10 0	gerous go 30 0 0 30 0 0	ods involv 100 0 100 100 0	300 0 0 300 0
Average 3.4.2 - front- end ammonia resultir Fatalities pass Distribution-type Average Fatalities emp	0 - train coll ing in small engers Poisson 0 loyees Poisson	0 ision with release 0 100,00% 0	two freigh	at trains ca	rrying dan 10 0 10 10	gerous go 30 0 30 30	ods involv 100 0 100	ving 300 0 0 300
Average 3.4.2 - front- end ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	0 - train coll ing in small engers Poisson 0 loyees Poisson 0	0 ision with release 0 100,00% 0 100,00%	two freigh	3 0 0 3 0	rrying dan 10 0 10 10 0	gerous go 30 0 0 30 0 0	ods involv 100 0 100 100 0	300 0 0 300 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	0 - train coll ig in small engers Poisson 0 loyees Poisson 0 n	0 ision with release 0 100,00% 0 100,00% 0	two freigh 1 0 1 0 1 0 1 1 0 1 1 0 1 1	3 0 0 3 0 3 0 3 0 7	rrying dan 10 0 10 0 10 0 14	gerous go 30 0 0 30 0 0 30 30	ods involv 100 0 100 0 180	/ing 300 0 0 300 0 0 365
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	0 train coll ing in small engers Poisson 0 loyees Poisson 0 n Poisson	0 ision with release 0 100,00% 0 100,00% 0	two freigh	3 0 0 0 3 0 0	rrying dan 10 0 0 10 0 0 0 0	gerous go 30 0 0 30 0 0 0	ods involv 100 0 100 0 100 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	0 train coll ing in small engers Poisson 0 loyees Poisson 0 n Poisson	0 ision with release 0 100,00% 0 100,00% 0 0 36,79%	two freigh	3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	rrying dan 10 0 0 10 0 10 0 14 0,00%	gerous go 30 0 0 30 0 0 30 0 30 0	ods involv 100 0 0 100 0 100 0 180 0	/ing 300 0 0 300 0 0 365 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00	0 ision with release 0 100,00% 0 100,00% 0 0 36,79%	two freigh	3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	rrying dan 10 0 0 10 0 10 0 14 0,00%	gerous go 30 0 0 30 0 0 30 0 30 0	ods involv 100 0 0 100 0 100 0 180 0	/ing 300 0 0 300 0 0 365 0
Average 3.4.2 - front- end ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	0 train coll ing in small engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0	two freigh	3 0 0 0 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 0	rrying dan 10 0 0 10 0 10 0 0 14 0,00% 1,43E-04	gerous go 30 0 0 30 0 0 30 0 0 0 0 0 0	ods involv 100 0 0 100 0 100 0 180 0 0 0 0 0 0 0 0	<pre>/ing 300 0 0 0 300 0 300 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</pre>
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0	two freigh	3 0 0 0 0 3 0 3 0 26,42% 1,85E+00 1,00E+05	rrying dan 10 0 0 10 0 10 0 10 0 14 0,00% 1,43E-04 1,00E+06	gerous go 30 0 0 30 0 0 30 0 0 1,00E+07	ods involv 100 0 0 100 0 180 0 0 1,00E+08	/ing 300 0 0 0 300 0 300 0 365 0 0 1,00E+09
Average 3.4.2 - front- end ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0	two freigh	3 0 0 0 0 3 0 3 0 3 0 3 0 3 0 3 0 1,85E+00 1,00E+05 0	rrying dan 10 0 0 10 0 14 0,00% 1,43E-04 1,00E+06 100,00%	gerous go 30 0 0 30 0 0 30 0 0 1,00E+07 0	ods involv 100 0 0 100 0 100 0 180 0 1,00E+08 0	/ing 300 0 0 0 300 0 0 365 0 0 1,00E+09 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0	two freigh	3 0 0 0 0 3 0 3 0 3 0 3 0 3 0 3 0 1,85E+00 1,00E+05 0	rrying dan 10 0 0 10 0 14 0,00% 1,43E-04 1,00E+06 100,00%	gerous go 30 0 0 30 0 0 30 0 0 1,00E+07 0	ods involv 100 0 0 100 0 100 0 180 0 1,00E+08 0	/ing 300 0 0 0 300 0 0 365 0 0 1,00E+09 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 36,79% 0 1,00E+03 0	two freigh	3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1,85E+00 1,00E+05 0 0 0	rrying dan 10 0 0 10 0 10 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	gerous go 30 0 0 0 30 0 0 30 0 0 1,00E+07 0 0 0	ods involv 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 0 0	/ing 300 0 0 0 300 0 300 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 36,79% 0 1,00E+03 0 0	two freigh	3 0 0 0 0 3 0 3 0 3 0 3 0 1,85E+00 1,85E+00 0 0 0 7	rrying dan 10 0 0 10 0 10 0 10 0 14 1,43E-04 1,00E+06 100,00% 1,00E+06 100,00%	gerous go 30 0 0 0 30 0 0 0 30 0 0 1,00E+07 0 0 30 30 0 30 30 30 30 30 3	ods involv 100 0 0 100 0 100 0 100 0 180 0 1,00E+08 0 0 0 180	/ing 300 0 0 300 0 300 0 300 0 0 365 0 0 0 1,00E+09 0 0 365
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 36,79% 0 1,00E+03 0 0 1,00E+03	two freigh 1 0 0 1 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 1,00E+04 1 1,00E+04 1 1,00E+04	3 0 0 0 0 3 0 3 0 0 3 0 0 1,85E+00 1,00E+05 0 0 7 1,24%	rrying dan 10 0 0 10 0 10 0 10 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	gerous go 30 0 0 0 30 0 0 30 0 0 1,00E+07 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	ods involv 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	/ing /ing 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 365 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 36,79% 0 1,00E+03 0 0 1,00E+03	two freigh 1 0 0 1 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 1,00E+04 1 1,00E+04 1 1,00E+04	3 0 0 0 0 3 0 3 0 0 3 0 0 1,85E+00 1,00E+05 0 0 7 1,24%	rrying dan 10 0 0 10 0 10 0 10 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	gerous go 30 0 0 0 30 0 0 30 0 0 1,00E+07 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	ods involv 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	/ing /ing 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 365 0
Average 3.4.2 - front- end - ammonia resultir Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 train coll engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 ision with release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 84,65% 0	two freigh 1 0 0 1 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 1,00E+04 1 1,41E-01	3 0 0 0 0 3 0 3 0 0 1,85E+00 1,85E+00 1,00E+05 0 0 1,24% 8,71E-02	rrying dan 10 0 0 10 0 10 0 10 0	gerous go 30 0 0 0 30 0 0 30 0 1,00E+07 0 0 1,00E+07 0 0 0 0 0 0 0 0 0 0 0 0 0	ods involv 100 0 0 100 0 100 0 100 0 180 0 1,00E+08 0 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0	/ing 300 0 0 300 0 300 0 300 0 0 365 0 0 1,00E+09 0 0 365 0 0 0

3.4.3 - front- end ammonia resultir				it trains ca	rrying dan	gerous go	ods involv	ving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	-	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	60,65%	30,33%	8,85%	0,18%	0	0	0
Average	0,5	0	3,03E-01	2,65E-01	1,75E-02	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos		1,00E+03	1,00E+04	1,00E+05		1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
				_				
Disruption r	I	0	1	7	14	30	180	365
Distribution-type		84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
		0	4	•	40	20	400	200
Fatalities re		-	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.4.4 - front- end	train coll	ision with	two froigh	t trains ca	rrving dan	aorous ao	ode involu	vina
ammonia resultir			two neigh	it trains ou	nying aan	gerous go		ing
Fatalities pass	• •	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	47,24%	35,43%	16,61%	0,73%	0	0	0
Average	0,75	0	3,54E-01	4,98E-01	7,29E-02	1,60E-08	0	0
Disruptio		0	1	7	14	30	180	365
Distribution-type		36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos			4 00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
	[1,00E+03	1,00E+04		-			
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
	Poisson				-			0
Distribution-type Average	Poisson 5,00E+05	0	0	0	100,00% 1,00E+06	0	0	0
Distribution-type Average Disruption r	Poisson 5,00E+05 oad	0 0 0	0 0 1	0 0 7	100,00% 1,00E+06 14	0 0 30	0 0 180	0 365
Distribution-type Average Disruption r Distribution-type	Poisson 5,00E+05 oad Poisson	0 0 0 84,65%	0 0 1 14,11%	0 0 7 1,24%	100,00% 1,00E+06 14 0	0 0 30 0	0 0 180 0	0 365 0
Distribution-type Average Disruption r	Poisson 5,00E+05 oad	0 0 0	0 0 1	0 0 7	100,00% 1,00E+06 14	0 0 30	0 0 180	0 365
Distribution-type Average Disruption r Distribution-type Average	Poisson 5,00E+05 oad Poisson 1,67E-01	0 0 0 84,65% 0	0 0 1 14,11% 1,41E-01	0 0 7 1,24% 8,71E-02	100,00% 1,00E+06 14 0 0	0 0 30 0 0	0 0 180 0 0	0 365 0 0
Distribution-type Average Disruption r Distribution-type Average Fatalities re	Poisson 5,00E+05 oad Poisson 1,67E-01	0 0 0 84,65% 0	0 0 1 14,11% 1,41E-01	0 0 7 1,24% 8,71E-02 3	100,00% 1,00E+06 14 0 0	0 0 30 0 0 30	0 0 180 0 0	0 365 0 0 300
Distribution-type Average Disruption r Distribution-type Average	Poisson 5,00E+05 oad Poisson 1,67E-01	0 0 0 84,65% 0	0 0 1 14,11% 1,41E-01	0 0 7 1,24% 8,71E-02	100,00% 1,00E+06 14 0 0	0 0 30 0 0	0 0 180 0 0	0 365 0 0

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3.4.5 - front- end -			two freigh	nt trains ca	rrying dan	gerous go	ods involv	/ing
chlorine resulting				-	40		400	
Fatalities pass	-	0	1	3	10	30	100	300
Distribution-type	_	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		•	4	2	40	20	400	200
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		36,79%	36,79%	26,42%	0,00%	0	0	0
	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Avelage	1,002.00	0	3,00⊑-01	1,000 100	1,402-04	0	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1.00E+06	1.00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
, · · ·	5,00E+05	0	0	0	1,00E+06	0	0	0
Average	-,			ļ	.,		ļ	
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		84,65%	14,11%	1,24%	0	0	0	0
/ 1	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
				,				
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.4.6 - front- end ·	train coll	ision with	two freigh	nt trains ca	rrying dan	gerous go	ods involv	/ing
chlorine resulting		elease						
Fatalities pass	-	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		•		-			400	0.07
Disruptio		0	1	7	14	30	180	365
Distribution-type		36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Banairca	-to	1 005:00	1,00E+04	1,00E+05	1 005:00	1,00E+07	1 005:00	1,00E+09
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06 100,00%	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	-	-		0	-	-
Average	5,00E+05	U	0	0	1,00E+06	U	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	6 84,65%	14,11%	1,24%	0	0	0	0
71		04,05%	1,41E-01	8,71E-02	0	0	0	0
Average	1,07	U	1,712-01	0,112-02	0	U		0
Fatalities ro	ad	0	1	3	10	30	100	300
i atanties it		v			10		100	000
Distribution type	Poisson	100 00%	Ο	Ο	Ο	Ω	0	Ω
Distribution-type Average	Poisson 0	100,00% 0	0	0	0	0	0	0

	- train coll		two freigh	nt trains ca	rrying dan	gerous go	ods involv	/ing
chlorine resulting								
Fatalities pass	-	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp		0	1	3	10	30	100	300
Distribution-type	-	60,65%	30,33%	8,85%	0,18%	0	0	0
	0,5	00,0378	3,03E-01	2,65E-01	1,75E-02	0	0	0
Average	0,5	0	3,03⊏-01	2,000-01	1,7JL-02	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		36,79%	36,79%	26,42%	0,00%	0	0	0
<i>/</i> .	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-,		-,	.,	.,			
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.4.8 - front- end -	train coll	ision with	two freigh	nt trains ca	rrying dan	gerous go	ods involv	/ing
chlorine resulting								
Fatalities pass	enaers	0	A					
Distribution-type	-	-	1	3	10	30	100	300
consuctor type	Poisson	100,00%	0	0	0	0	0	0
Average	Poisson	-	-		-			
Average	Poisson 0	100,00% 0	0	0 0	0	0	0	0
Average Fatalities emp	Poisson 0 loyees	100,00% 0 0	0 0 1	0 0 3	0 0 10	0 0 30	0 0 100	0 0 300
Average Fatalities emp Distribution-type	Poisson 0 loyees Poisson	100,00% 0 0 47,24%	0 0 1 35,43%	0 0 3 16,61%	0 0 10 0,73%	0 0 30 0	0 0 100 0	0 0 300 0
Average Fatalities emp	Poisson 0 loyees Poisson	100,00% 0 0	0 0 1	0 0 3	0 0 10	0 0 30	0 0 100	0 0 300
Average Fatalities emp Distribution-type Average	Poisson 0 loyees Poisson 0,75	100,00% 0 0 47,24% 0	0 0 1 35,43% 3,54E-01	0 0 3 16,61% 4,98E-01	0 0 10 0,73% 7,29E-02	0 0 30 0 1,60E-08	0 0 100 0 0	0 0 300 0 0
Average Fatalities emp Distribution-type Average Disruptio	Poisson 0 loyees Poisson 0,75	100,00% 0 0 47,24% 0	0 0 1 35,43% 3,54E-01 1	0 0 3 16,61% 4,98E-01 7	0 0 10 0,73% 7,29E-02 14	0 0 30 0 1,60E-08 30	0 0 100 0 0 180	0 0 300 0 0 365
Average Fatalities emp Distribution-type Average Disruptio Distribution-type	Poisson 0 loyees Poisson 0,75 n Poisson	100,00% 0 47,24% 0 0 36,79%	0 0 1 35,43% 3,54E-01 1 36,79%	0 0 3 16,61% 4,98E-01 7 26,42%	0 0 10 0,73% 7,29E-02 14 0,00%	0 0 30 0 1,60E-08 30 0	0 0 100 0 0 180 0	0 0 300 0 0 365 0
Average Fatalities emp Distribution-type Average Disruptio	Poisson 0 loyees Poisson 0,75 n Poisson	100,00% 0 0 47,24% 0	0 0 1 35,43% 3,54E-01 1	0 0 3 16,61% 4,98E-01 7	0 0 10 0,73% 7,29E-02 14	0 0 30 0 1,60E-08 30	0 0 100 0 0 180	0 0 300 0 0 365
Average Fatalities emp Distribution-type Average Disruption Distribution-type Average	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00	100,00% 0 47,24% 0 36,79% 0	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00	0 0 10 0,73% 7,29E-02 14 0,00% 1,43E-04	0 0 30 0 1,60E-08 30 0 0	0 0 0 0 0 0 180 0 0	0 0 0 0 0 365 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00	100,00% 0 47,24% 0 0 36,79% 0 1,00E+03	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05	0 0 10 0,73% 7,29E-02 14 0,00% 1,43E-04	0 0 30 0 1,60E-08 30 0 0 0	0 0 100 0 0 180 0 0 0 1,00E+08	0 0 300 0 0 365 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson	100,00% 0 47,24% 0 36,79% 0 1,00E+03	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0	0 0 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05 0	0 0 10 7,73% 7,29E-02 14 0,00% 1,43E-04 1,00 E+06	0 0 1,60E-08 30 0 0 0 1,00E+07 0	0 0 0 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 0 0 0 1,00E+09 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson	100,00% 0 47,24% 0 0 36,79% 0 1,00E+03	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05	0 0 10 0,73% 7,29E-02 14 0,00% 1,43E-04	0 0 30 0 1,60E-08 30 0 0 0	0 0 100 0 0 180 0 0 0 1,00E+08	0 0 300 0 0 365 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson 5,00E+05	100,00% 0 47,24% 0 36,79% 0 1,00E+03 0 0	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0 0	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05 0 0	0 0 10 7,29E-02 1,43E-04 1,00E+06 1,00E+06	0 0 1,60E-08 30 0 0 0 1,00E+07 0 0	0 0 0 0 0 180 0 0 0 1,00E+08 0 0	0 0 0 0 0 365 0 0 0 1,00E+09 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson 5,00E+05	100,00% 0 47,24% 0 36,79% 0 1,00E+03 0 0 0	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05 0 0 0	0 0 10 7,29E-02 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	0 0 1,60E-08 30 0 0 0 1,00E+07 0 0 0 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson	100,00% 0 47,24% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 0 84,65%	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 14,11%	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05 0 0 0 1,00E+05	0 0 10 7,29E-02 14 0,00% 1,43E-04 100,00% 1,00E+06 1,00E+06	0 0 0 30 0 1,60E-08 30 0 0 1,00E+07 0 0 0 30 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson 5,00E+05	100,00% 0 47,24% 0 36,79% 0 1,00E+03 0 0 0	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05 0 0 0	0 0 10 7,29E-02 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	0 0 1,60E-08 30 0 0 0 1,00E+07 0 0 0 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Average	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson 1,67E-01	100,00% 0 47,24% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 84,65% 0	0 0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 14,11% 1,41E-01	0 0 16,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05 0 0 0 1,24% 8,71E-02	0 0 10 7,29E-02 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	0 0 1,60E-08 30 0 0 0 1,00E+07 0 0 0 30 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Fatalities reference	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson 1,67E-01	100,00% 0 47,24% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 84,65% 0	0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 14,11% 1,41E-01 1	0 0 3 16,61% 4,98E-01 7 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0 0 7 1,24% 8,71E-02 3	0 0 10 7,29E-02 14 0,00% 1,43E-04 100,00% 1,00E+06 100,00% 1,00E+06 100,00%	0 0 1,60E-08 30 0 0 0 0 1,00E+07 0 0 0 30 0 0 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0 0	0 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365
Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Average Distribution-type Average Average	Poisson 0 loyees Poisson 0,75 n Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson 1,67E-01	100,00% 0 47,24% 0 36,79% 0 36,79% 0 1,00E+03 0 0 0 84,65% 0	0 0 0 1 35,43% 3,54E-01 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 14,11% 1,41E-01	0 0 10,61% 4,98E-01 7 26,42% 1,85E+00 1,00E+05 0 0 0 1,24% 8,71E-02	0 0 10 7,29E-02 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	0 0 1,60E-08 30 0 0 0 1,00E+07 0 0 0 30 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0

3.4.9 - front- end flammable resulti				it trains ca	rrying dan	gerous go	ods involv	/ing
Fatalities pass			1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos	-	1,00E+03		1,00E+05	-		1,00E+08	-
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Discution		•		-		00	400	205
Disruption r	1	0	1	7	14	30	180	365
Distribution-type		84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	ad	0	1	3	10	30	100	300
-	1	100,00%	0	0	0	30	0	0
Distribution-type Average	Poisson 0	0	0	0	0	0	0	0
Avelage	0	0	0	0	0	0	0	0
3.4.10 - front- end	- train co	llision witl	n two freig	ht trains c	arrying da	ngerous g	oods invo	lving
flammable resulti								•
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	- -	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	1	0	1	7	14	30	180	365
Distribution-type		0	0	0,00%	1,98%	88,43%	9,58%	0
Average	2,40E+01	0	0	3,32E-04	2,77E-01	2,65E+01	1,73E+01	0
Densines	-4-	4 005 00	4 005 0 4	4 005 05	4 005 000	4 005 07	4 005 00	4 005 00
Repair cos	1	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	U	U	0	1,00E+06	U	U	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		0 84,65%	14,11%	1,24%	0	30	0	0
Average		04,03%	1,41E-01	8,71E-02	0	0	0	0
Average	1,07 -01	0	1,712-01	0,112-02		0		0
Fatalities ro	oad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
		0	0	0	0	0	0	0
Average								

3.4.11 - front- end flammable resulti			_		arrying da	ngerous g	oods invo	lving
Fatalities pass		0		3	10	30	100	300
Distribution-type	_	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
5	2,15E+02	0	0	0	0	0	0	3,00E+02
3.4.13 - front- end					arrying da	ngerous g	oods invo	lving
flammable resulting								
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
						••		
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		•		-			400	
Disruption		0	1	7	14	30	180	365
Distribution-type		0	0	0,00%	1,98%	88,43%	9,58%	0
Average	2,40E+01	0	0	3,32E-04	2,77E-01	2,65E+01	1,73E+01	0
	-1	1 005 00	1 005:04	1 005 05	1 005 00	4 005 07	1 005 00	1 005 00
Repair cos		1,00E+03	1,00E+04	1,00E+05	1,00E+06 100,00%	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	1,00E+06	0	0	0
Average	5,00E+05	U	U	U	1,000+06	U	U	U
Diorumtion	oad	0	1	7	14	30	180	365
Disruption r								
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	U	0	U	0
Fatalities ro	ad	0	1	3	10	20	100	300
		-	0	3	10 0	30 0	100	
Distribution-type	Poisson	100,00%		-	-	-	-	0
Average	0	0	0	0	0	0	0	0

3.4.14 - front- end train accident invo								ting in
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average		0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0	0	0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
_ .		4 005 00	4 005 04	4 005 05	4 005 00	4 005 07	4 995 99	4 005.00
Repair cos		1,00E+03		1,00E+05	-			-
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	ad	0	1	3	10	30	100	300
	r	0	0	3 0	0	0	0	
Distribution-type	2,15E+02	0	0	0	0	0	0	100,00% 3,00E+02
3.4.16 - front- end	- train co	llision wit	h two freig	ht trains c			-	
flammable resulti Fatalities pass		release a 0	and no igi	nition 3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	•	•	•	•	•	•	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	<u> </u>	0	1	7	14	30	180	365
Distribution-type		0	0	0,00%	1,98%	88,43%	9,58%	0
<i>,</i> ,	2,40E+01	0	0	3,32E-04	2,77E-01	2,65E+01	1,73E+01	0
					<u> </u>			<u> </u>
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	6 84,65%	14,11%	1,24%	0	0	0	0
Average		04,03%	1,41E-01	8,71E-02	0	0	0	0
Average	1,072-01		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0,112-02				
Fatalities re	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
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3.4.18 - front- end resulting in no rel	ease							••••
Fatalities pass	-	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	3	10	30	100	300
Distribution-type	Poisson	36,79%	36,79%	24,53%	1,90%	0,00%	0	0
Average	1,00E+00	0	3,68E-01	7,36E-01	1,90E-01	3,01E-07	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	3	10	30	100	300
Distribution-type		84,65%	14,11%	1,24%	0,00%	0	0	0
Average	1,67E-01	0	1,41E-01	3,72E-02	2,81E-04	0	0	0
Fatalities re	bad	0	1	3	10	30	100	300
i atanties fi					-	-	<u>^</u>	0
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Distribution-type Average	0	0	0	0	0	0	0	0
Distribution-type Average 3.4.19 - front- end resulting in small	0 - train co release a	0 Ilision with	0 n two freig	0	0	0	0	0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass	0 - train co release a engers	0 Ilision with nd no igni 0	0 n two freig tion	0 ht trains c	0 arrying da	0 ngerous ge	0 oods invo	0 Iving lpg
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type	0 - train co release a engers	0 Ilision witi nd no igni	0 n two freig tion 1	0 ht trains ca 3	0 arrying da 10	0 ngerous g 30	0 oods invo 100	0 Iving Ipg 300
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass	0 - train co release a engers Poisson	0 Ilision with nd no igni 0 100,00%	0 n two freig tion 1 0	0 ht trains co 3 0	0 arrying da 10 0	0 ngerous g 30 0	0 oods invo 100 0	0 Iving Ipg 300 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type	0 - train co release a engers Poisson 0	0 Ilision with nd no igni 0 100,00%	0 n two freig tion 1 0	0 ht trains co 3 0	0 arrying da 10 0	0 ngerous g 30 0	0 oods invo 100 0	0 Iving Ipg 300 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average	0 - train co release a engers Poisson 0	0 Ilision with nd no igni 0 100,00% 0	0 n two freig tion 1 0 0	0 ht trains co 3 0 0	0 arrying da 10 0 0	0 ngerous g 30 0 0	0 oods invo 100 0 0	0 Iving Ipg 300 0 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Fatalities emp	0 - train co release a engers Poisson 0 loyees Poisson	0 Ilision with nd no igni 0 100,00% 0	0 n two freig tion 1 0 0	0 ht trains ca 0 0 3	0 arrying da 10 0 0	0 ngerous gr 30 0 0 30	0 oods invo 100 0 100	0 Iving Ipg 300 0 0 300
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 - train co release a engers Poisson 0 loyees Poisson	0 Ilision with nd no igni 0 100,00% 0 100,00%	0 n two freig tion 1 0 0	0 ht trains ca 3 0 0 3 0	0 arrying da 10 0 0 10 0	0 ngerous g 30 0 0 30 0	0 oods invo 100 0 0 100 0	0 Iving Ipg 300 0 0 300 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 - train co release a engers Poisson 0 loyees Poisson 0	0 Ilision with nd no igni 0 100,00% 0 100,00%	0 n two freig tion 1 0 0	0 ht trains ca 3 0 0 3 0	0 arrying da 10 0 0 10 0	0 ngerous g 30 0 0 30 0	0 oods invo 100 0 0 100 0	0 Iving Ipg 300 0 0 300 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n	0 Ilision with nd no igni 0 100,00% 0 100,00% 0	0 n two freig tion 1 0 0 1 0	0 ht trains ca 0 0 0 3 0 0	0 arrying da 10 0 0 10 0 0	0 ngerous g 30 0 0 30 0 0	0 oods invo 100 0 0 100 0 0	0 Iving Ipg 300 0 0 300 0 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson	0 Ilision with nd no igni 0 100,00% 0 100,00% 0	0 n two freig tion 1 0 0 1 0	0 ht trains ca 3 0 0 3 0 0 7	0 arrying da 10 0 0 10 0 0	0 ngerous g 30 0 0 30 0 30	0 0 0 0 100 0 100 0 180	0 Iving Ipg 300 0 0 300 0 0 365
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson	0 Illision with nd no igni 0 100,00% 0 100,00% 0 0	0 n two freig tion 1 0 0 1 0 0 1 0 0 1 0 0	0 ht trains ca 3 0 0 3 0 0 0 7 0,00%	0 arrying da 10 0 0 10 0 0 14 1,98%	0 ngerous gr 30 0 0 30 0 0 0 30 88,43%	0 oods invo 0 0 0 100 0 0 180 9,58%	0 Iving Ipg 300 0 0 300 0 0 365 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01	0 Illision with nd no igni 0 100,00% 0 100,00% 0 0	0 n two freig tion 1 0 0 1 0 0 1 0 0 1 0 0	0 ht trains ca 3 0 0 3 0 0 0 7 0,00%	0 arrying da 10 0 0 10 0 0 14 1,98%	0 ngerous gr 30 0 0 30 0 0 0 30 88,43%	0 oods invo 0 0 0 100 0 0 180 9,58%	0 Iving Ipg 300 0 0 300 0 0 365 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 0 0 0	0 h two freig tion 1 0 0 1 0 0 1 0 0 0 1 0 0 0	0 ht trains ca 3 0 0 3 0 0 7 0,00% 3,32E-04	0 arrying da 10 0 0 10 0 0 14 1,98% 2,77E-01	0 ngerous g 30 0 0 30 0 0 30 88,43% 2,65E+01	0 oods invo 100 0 100 0 100 0 180 9,58% 1,73E+01	0 Iving Ipg 300 0 0 0 0 0 0 365 0 0 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Repair cos	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 0 0 0 100,00% 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00%	0 n two freig tion 1 0 0 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 3 0 0 0 7 0,00% 3,32E-04 1,00E+05	0 arrying da 10 0 0 0 10 0 0 10 0 0 14 1,98% 2,77E-01	0 ngerous g 30 0 0 30 30 0 0 30 88,43% 2,65E+01	0 oods invo 100 0 0 100 0 100 0 180 9,58% 1,73E+01 1,00E+08	0 Iving Ipg 300 0 0 300 0 0 365 0 0 0 1,00E+09
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 h two freig tion 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 3 0 0 0 7 0,00% 3,32E-04 1,00E+05 0	0 arrying da 10 0 0 0 10 0 0 14 1,98% 2,77E-01 1,00E+06 100,00%	0 ngerous g 30 0 0 30 30 30 88,43% 2,65E+01 1,00E+07 0	0 0 0 0 0 0 0 0 0 0 100 0 0 180 9,58% 1,73E+01 1,00E+08 0	0 Iving Ipg 300 0 0 300 0 365 0 0 0 1,00E+09 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson 5,00E+05	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 h two freig tion 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 3 0 0 0 7 0,00% 3,32E-04 1,00E+05 0	0 arrying da 10 0 0 0 10 0 0 14 1,98% 2,77E-01 1,00E+06 100,00%	0 ngerous g 30 0 0 30 30 30 88,43% 2,65E+01 1,00E+07 0	0 0 0 0 0 0 0 0 0 0 100 0 0 180 9,58% 1,73E+01 1,00E+08 0	0 Iving Ipg 300 0 0 300 0 365 0 0 0 1,00E+09 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson 5,00E+05	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 0 0 0 1,00E+03 0 0	0 n two freig tion 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 0 0 0 7 0,00% 3,32E-04 1,00E+05 0 0	0 arrying da 10 0 0 0 10 0 0 10 0 0 14 1,98% 2,77E-01 1,00E+06 100,00% 1,00E+06	0 ngerous g 30 0 0 30 30 0 0 30 88,43% 2,65E+01 1,00E+07 0 0	0 0 0 0 0 0 0 0 0 0 0 0 100 0 0 180 9,58% 1,73E+01 1,00E+08 0 0	0 Iving Ipg 300 0 0 300 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson 5,00E+05 oad	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 h two freig tion 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1 1 0 1 0 1 0 1 0 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ht trains ca 3 0 0 0 3 3 0 0 0 7 0,00% 3,32E-04 1,00E+05 0 0 0	0 arrying da 10 0 0 10 0 0 14 1,98% 2,77E-01 1,00E+06 100,00% 1,00E+06	0 ngerous g 30 0 0 30 0 30 88,43% 2,65E+01 1,00E+07 0 0 0 30	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Iving Ipg 300 0 0 300 0 365 0 0 1,00E+09 0 0 365
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson 5,00E+05 oad Poisson	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 h two freig tion 1 0 0 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1,10%	0 ht trains ca 3 0 0 0 3 3 0 0 0 0 7 0,00% 3,32E-04 1,00E+05 0 0 0 7 1,24%	0 arrying da 10 0 0 0 10 0 0 10 0 0 10 0 0 1,00E+06 100,00% 1,00E+06	0 ngerous g 30 0 0 30 30 88,43% 2,65E+01 1,00E+07 0 0 30 30 30 30 30 0	0 0 0 0 0 0 0 100 0 0 100 0 0 180 9,58% 1,73E+01 1,00E+08 0 0 180 0	0 Iving Ipg 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 365 0 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 h two freig tion 1 0 0 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 1,00E+04 0 0 1,10%	0 ht trains ca 3 0 0 0 3 3 0 0 0 0 7 0,00% 3,32E-04 1,00E+05 0 0 0 7 1,24%	0 arrying da 10 0 0 0 10 0 0 10 0 0 10 0 0 1,00E+06 100,00% 1,00E+06	0 ngerous g 30 0 0 30 30 88,43% 2,65E+01 1,00E+07 0 0 30 30 30 30 30 0	0 0 0 0 0 0 0 100 0 0 100 0 0 180 9,58% 1,73E+01 1,00E+08 0 0 180 0	0 Iving Ipg 300 0 0 300 0 300 0 365 0 0 1,00E+09 0 0 365 0 0
Distribution-type Average 3.4.19 - front- end resulting in small Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 - train co release a engers Poisson 0 loyees Poisson 0 n Poisson 2,40E+01 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 Ilision with nd no igni 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 1,00E+03 0 0 0 84,65% 0	0 h two freig tion 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 1 1 0 1 0 1 0 1 0 1 0 1 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	0 ht trains ca 3 0 0 0 3 3 0 0 0 7 0,00% 3,32E-04 1,00E+05 0 0 0 0 7 1,24% 8,71E-02	0 arrying da 10 0 0 0 10 0 0 14 1,98% 2,77E-01 1,00E+06 100,00% 1,00E+06 100,00%	0 ngerous g 30 0 0 30 30 30 88,43% 2,65E+01 1,00E+07 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Iving Ipg 300 0 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

3.4.20 - front- end						ngerous g	oods invo	lving
Ipg,small release Fatalities pass		n delayed 0	ignition a	ind explos	ion 10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average		0	Ŭ	Ŭ	Ū	Ū	Ŭ	Ū
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	1	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
		-						
Fatalities ro	1	0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
Ş	2,15E+02	0	0	0	0	0	0	3,00E+02
3.4.22 - front-end lpg,small release						ngerous g	oods invo	lving
Fatalities pass		0	1	3	10	30	100	
Distribution-type	-	100,00%	-	v			100	300
Average	PUICCUN		0	0	0	0	0	300
Avelage			0	0	0	0	0	0
3-	0	0	0	0	0	0	0 0	
	0	0	0	0	0	0	0	0
Fatalities emp	0 Ioyees	0	0	0 3	0 10	0 30	0	0 0 300
Fatalities emp Distribution-type	0 loyees Poisson	0 0 14,96%	0 1 28,42%	0 3 44,10%	0 10 12,53%	0 30 0,00%	0 100 0	0 0 300 0
Fatalities emp	0 loyees Poisson	0	0	0 3 44,10%	0 10	0 30	0	0 0 300
Fatalities emp Distribution-type Average	0 Ioyees Poisson 1,9	0 0 14,96%	0 1 28,42%	0 3 44,10%	0 10 12,53%	0 30 0,00%	0 100 0	0 0 300 0
Fatalities emp Distribution-type Average Disruptio	0 Ioyees Poisson 1,9 n	0 0 14,96% 0	0 1 28,42% 2,84E-01	0 3 44,10% 1,32E+00	0 10 12,53% 1,25E+00	0 30 0,00% 1,55E-04	0 100 0 0 180	0 0 300 0 0 365
Fatalities emp Distribution-type Average Disruption Distribution-type	0 Ioyees Poisson 1,9 n Poisson	0 0 14,96% 0 0	0 1 28,42% 2,84E-01 1	0 3 44,10% 1,32E+00 7	0 10 12,53% 1,25E+00 14	0 30 0,00% 1,55E-04 30	0 100 0 0	0 0 300 0 0
Fatalities emp Distribution-type Average Disruption Distribution-type	0 Ioyees Poisson 1,9 n	0 0 14,96% 0 0 0	0 1 28,42% 2,84E-01 1 0	0 3 44,10% 1,32E+00 7 0	0 10 12,53% 1,25E+00 14 0	0 30 0,00% 1,55E-04 30 0	0 100 0 0 180 0	0 0 300 0 0 365 51,39%
Fatalities emp Distribution-type Average Disruption Distribution-type	0 Poisson 1,9 n Poisson 3,65E+02	0 0 14,96% 0 0 0	0 1 28,42% 2,84E-01 1 0 0	0 3 44,10% 1,32E+00 7 0	0 10 12,53% 1,25E+00 14 0 0	0 30 0,00% 1,55E-04 30 0	0 100 0 0 180 0	0 0 300 0 0 365 51,39%
Fatalities emp Distribution-type Average Disruption Distribution-type Average	0 loyees Poisson 1,9 n Poisson 3,65E+02	0 0 14,96% 0 0 0 0 0	0 1 28,42% 2,84E-01 1 0 0	0 3 44,10% 1,32E+00 7 0 0	0 10 12,53% 1,25E+00 14 0 0	0 30 0,00% 1,55E-04 30 0 0	0 100 0 0 180 0 0	0 0 0 0 0 365 51,39% 1,88E+02
Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	0 loyees Poisson 1,9 n Poisson 3,65E+02	0 0 14,96% 0 0 0 0 1,00E+03	0 1 28,42% 2,84E-01 1 0 0 1,00E+04	0 3 44,10% 1,32E+00 7 0 0 1,00E+05	0 10 12,53% 1,25E+00 14 0 0 1,00E+06	0 30 0,00% 1,55E-04 30 0 0 1,00E+07	0 100 0 0 180 0 0 1,00E+08	0 0 0 0 0 365 51,39% 1,88E+02 1,00E+09
Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson	0 0 14,96% 0 0 0 0 1,00E+03 0	0 1 28,42% 2,84E-01 1 0 0 1,00E+04 0	0 3 44,10% 1,32E+00 7 0 0 1,00E+05 0	0 10 12,53% 1,25E+00 14 0 0 1,00E+06 100,00%	0 30 0,00% 1,55E-04 30 0 0 1,00E+07 0	0 100 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 51,39% 1,88E+02 1,00E+09 0
Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	0 Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+05	0 0 14,96% 0 0 0 0 1,00E+03 0	0 1 28,42% 2,84E-01 1 0 0 1,00E+04 0	0 3 44,10% 1,32E+00 7 0 0 1,00E+05 0	0 10 12,53% 1,25E+00 14 0 0 1,00E+06 100,00%	0 30 0,00% 1,55E-04 30 0 0 1,00E+07 0	0 100 0 0 180 0 0 1,00E+08 0	0 0 0 0 0 365 51,39% 1,88E+02 1,00E+09 0
Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average	0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+05 oad	0 0 14,96% 0 0 0 0 1,00E+03 0 0	0 1 28,42% 2,84E-01 1 0 0 1,00E+04 0 0 0	0 3 44,10% 1,32E+00 7 0 0 1,00E+05 0 0	0 10 12,53% 1,25E+00 14 0 0 1,00E+06 1,00E+06	0 30 0,00% 1,55E-04 30 0 0 1,00E+07 0 0	0 100 0 0 180 0 0 1,00E+08 0 0	0 0 0 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0
Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Distribution-type Distribution-type	0 loyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+05 oad	0 0 14,96% 0 0 0 0 1,00E+03 0 0 0	0 1 28,42% 2,84E-01 1 0 0 0 1,00E+04 0 0 0	0 3 44,10% 1,32E+00 7 0 0 1,00E+05 0 0 7 1,00E+05 0 7	0 10 12,53% 1,25E+00 14 0 0 1,00E+06 1,00E+06 1 ,00E+06	0 30 0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0	0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365
Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Distribution-type Distribution-type	0 Ioyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson	0 0 14,96% 0 0 0 0 1,00E+03 0 0 0 0 84,65%	0 1 28,42% 2,84E-01 1 0 0 1,00E+04 0 0 1,00E+04 1 14,11%	0 3 44,10% 1,32E+00 7 0 0 1,00E+05 0 0 7 1,24%	0 10 12,53% 1,25E+00 1,25E+00 0 1,00E+06 100,00% 1,00E+06 1,00E+06	0 30 0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0 30 30	0 100 0 0 180 0 0 1,00E+08 0 0 0 180	0 0 0 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365 0
Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type Average Distribution-type Distribution-type Distribution-type	0 Ioyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 0 14,96% 0 0 0 0 1,00E+03 0 0 0 0 84,65%	0 1 28,42% 2,84E-01 1 0 0 1,00E+04 0 0 1,00E+04 1,00E+04 1,00E+04	0 3 44,10% 1,32E+00 7 0 0 1,00E+05 0 0 7 1,24%	0 10 12,53% 1,25E+00 1,25E+00 1,00E+06 100,00% 1,00E+06 1,00E+06	0 30 0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0 30 30	0 100 0 0 180 0 0 1,00E+08 0 0 0 180	0 0 0 0 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 365 0
Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	0 Ioyees Poisson 1,9 n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson 1,67E-01 pad	0 0 14,96% 0 0 0 0 1,00E+03 0 0 84,65% 0	0 1 28,42% 2,84E-01 1 0 0 1,00E+04 0 0 1 1,00E+04 1 14,11% 1,41E-01	0 3 44,10% 1,32E+00 7 0 0 1,00E+05 0 0 0 7 1,24% 8,71E-02	0 12,53% 1,25E+00 14 0 0 1,00E+06 100,00% 1,00E+06 100,00% 1,00E+06	0 30 0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0 30 0 0	0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 300 0 0 365 51,39% 1,88E+02 1,00E+09 0 0 0 0 365 0 0

3.4.24 - front- end lpg,medium relea				ht trains c	arrying da	ngerous g	oods invo	lving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type		0	0	0	0,00%	0,36%	99,64%	0
Average	4,80E+01	0	0	0	1,10E-07	1,09E-01	1,79E+02	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05		1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	I	0	1	7	14	30	180	365
Distribution-type		84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities re		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.4.25 - front- end lpg,medium relea Fatalities pass	se resultin		-		• •	ngerous g 30	oods invo 100	lving 300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1					
Distribution-type	Poisson	11.000/		3	10	30	100	300
Average		14,96%	28,42%	3 44,10%	10 12,53%	30 0,00%	100 0	300 0
0	1,9	14,96% 0	28,42% 2,84E-01	-				
	1,9	-	-	44,10%	12,53%	0,00%	0	0
Disruptio	n	-	-	44,10%	12,53%	0,00%	0	0
	n Poisson	0 0 0	2,84E-01 1 0	44,10% 1,32E+00 3 0	12,53% 1,25E+00 10 0	0,00% 1,55E-04 30 0	0 0 100 0	0 0 300 0,03%
Disruptio	n Poisson	0 0	2,84E-01	44,10% 1,32E+00 3	12,53% 1,25E+00 10	0,00% 1,55E-04 30	0 0 100	0 0 300
Disruptio Distribution-type Average	n Poisson 3,65E+02	0 0 0 0	2,84E-01 1 0 0	44,10% 1,32E+00 3 0 0	12,53% 1,25E+00 10 0 0	0,00% 1,55E-04 30 0 0	0 0 100 0 0	0 0 300 0,03% 7,67E-02
Disruptio Distribution-type Average Repair cos	n Poisson 3,65E+02	0 0 0 0 1,00E+03	2,84E-01 1 0 0 1,00E+04	44,10% 1,32E+00 3 0 0 1,00E+05	12,53% 1,25E+00 10 0 0 1,00E+06	0,00% 1,55E-04 30 0 0 1,00E+07	0 0 100 0 0 1,00E+08	0 0 300 0,03%
Distribution-type Average Repair cost Distribution-type	n Poisson 3,65E+02 sts Poisson	0 0 0 0 1,00E+03 0	2,84E-01 1 0 0 1,00E+04 0	44,10% 1,32E+00 3 0 0 1,00E+05 0	12,53% 1,25E+00 10 0 0 1,00E+06 100,00%	0,00% 1,55E-04 30 0 0 1,00E+07 0	0 0 100 0 0 1,00E+08 0	0 0 300 0,03% 7,67E-02 1,00E+09 0
Disruptio Distribution-type Average Repair cos	n Poisson 3,65E+02 sts Poisson	0 0 0 0 1,00E+03	2,84E-01 1 0 0 1,00E+04	44,10% 1,32E+00 3 0 0 1,00E+05	12,53% 1,25E+00 10 0 0 1,00E+06	0,00% 1,55E-04 30 0 0 1,00E+07	0 0 100 0 0 1,00E+08	0 0 300 0,03% 7,67E-02 1,00E+09
Distribution-type Average Repair cos Distribution-type Average	n Poisson 3,65E+02 sts Poisson 5,00E+05	0 0 0 0 1,00E+03 0 0	2,84E-01 1 0 0 1,00E+04 0 0 0	44,10% 1,32E+00 3 0 0 1,00E+05 0 0	12,53% 1,25E+00 10 0 1,00E+06 1,00E+06	0,00% 1,55E-04 30 0 0 1,00E+07 0 0	0 0 100 0 0 1,00E+08 0 0	0 0 300 0,03% 7,67E-02 1,00E+09 0 0
Distribution-type Average Repair cos Distribution-type Average Disruption r	n Poisson 3,65E+02 sts Poisson 5,00E+05 oad	0 0 0 0 1,00E+03 0 0	2,84E-01 1 0 0 1,00E+04 0 0 0 1 1	44,10% 1,32E+00 3 0 0 1,00E+05 0 0 0	12,53% 1,25E+00 10 0 0 1,00E+06 1,00E+06 1,00E+06	0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0	0 0 100 0 0 1,00E+08 0 0	0 0 300 0,03% 7,67E-02 1,00E+09 0 0 0
Disruptio Distribution-type Average Repair cos Distribution-type Average Disruption r Distribution-type	n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson	0 0 0 0 1,00E+03 0 0 0 84,65%	2,84E-01 1 0 0 1,00E+04 0 0 0 1 14,11%	44,10% 1,32E+00 3 0 0 1,00E+05 0 0 0 3 1,24%	12,53% 1,25E+00 10 0 0 1,00E+06 100,00% 1,00E+06 10 0,00%	0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0 30 30	0 0 0 0 0 1,00E+08 0 0 0 100 0	0 0 0,03% 7,67E-02 1,00E+09 0 0 0 3 00
Disruptio Distribution-type Average Distribution-type Average Disruption r	n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson	0 0 0 0 1,00E+03 0 0	2,84E-01 1 0 0 1,00E+04 0 0 0 1 1	44,10% 1,32E+00 3 0 0 1,00E+05 0 0 0	12,53% 1,25E+00 10 0 0 1,00E+06 1,00E+06 1,00E+06	0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0	0 0 100 0 0 1,00E+08 0 0	0 0 300 0,03% 7,67E-02 1,00E+09 0 0 0
Disruptio Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average	n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 0 0 0 1,00E+03 0 0 0 84,65% 0	2,84E-01 1 0 0 1,00E+04 0 0 1 14,11% 1,41E-01	44,10% 1,32E+00 3 0 0 1,00E+05 0 0 0 3 1,24% 3,72E-02	12,53% 1,25E+00 10 0 0 1,00E+06 100,00% 1,00E+06 10 0,00% 2,81E-04	0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 0 0 0 0 1,00E+08 0 0 0 100 0 0	0 0 0 300 7,67E-02 1,00E+09 0 0 0 300 0 0
Disruptio Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Fatalities reference	n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 0 0 0 1,00E+03 0 0 84,65% 0	2,84E-01 1 0 0 1,00E+04 0 0 1,00E+04 1,00E+04 1,11% 1,41E-01 1 1	44,10% 1,32E+00 3 0 0 1,00E+05 0 0 0 3 1,24% 3,72E-02 3	12,53% 1,25E+00 10 0 0 1,00E+06 100,00% 1,00E+06 10 0,00% 2,81E-04	0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0 30 0 0 0 30	0 0 100 0 0 1,00E+08 0 0 0 0 100 0 100	0 0 0 300 7,67E-02 1,00E+09 0 0 0 300 0 0
Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Fatalities re Distribution-type	n Poisson 3,65E+02 sts Poisson 5,00E+05 oad Poisson 1,67E-01	0 0 0 0 1,00E+03 0 0 0 84,65% 0	2,84E-01 1 0 0 1,00E+04 0 0 1 14,11% 1,41E-01	44,10% 1,32E+00 3 0 0 1,00E+05 0 0 0 3 1,24% 3,72E-02	12,53% 1,25E+00 10 0 0 1,00E+06 100,00% 1,00E+06 10 0,00% 2,81E-04	0,00% 1,55E-04 30 0 0 1,00E+07 0 0 0 30 0 0 0	0 0 0 0 0 1,00E+08 0 0 0 100 0 0	0 0 0 300 7,67E-02 1,00E+09 0 0 0 300 0 0

3.4.27 - front- end	- train co	llision with	h two freig	ht trains c	arrying da	ngerous g	oods invo	lving
lpg,medium relea	se resultin	ig in imme	diate ignit	ion and b	leve			
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	lovees	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
		4 005-00	4 997 94	4 005 05	4 005.00	4 005 05	4 005.00	4 005.00
Repair cos	1		1,00E+04	1,00E+05	-	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average		0	1,41E-01	8,71E-02	0	0	0	0
	,	-	, -	-, -	-	-	-	
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
	2,15E+02	0	0	0	0	0	0	3,00E+02
3.4.29 - front- end large release resu			h two freig	ht trains c	arrying da	ngerous g	oods invo	lving lpg,
Fatalities pass		0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0,00%	0,36%	99,64%	0
Average	4,80E+01	0	0	0	1,10E-07	1,09E-01	1,79E+02	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
		•		-			400	<u> </u>
Disruption r	1	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
Average	-	, J	, J			5	, J	<u> </u>

3.4.30 - front- end	- train co	llision wit	h two freig	ht trains c	arrving da	naerous a	oods invo	lving
lpg,large release						ngerous g	0003 11100	iving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
				-				
Fatalities emp	-	0	1	3	10	30	100	300
Distribution-type	Poisson	14,96%	28,42%	44,10%	12,53%	0,00%	0	0
Average	1,9	0	2,84E-01	1,32E+00	1,25E+00	1,55E-04	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	1	0	0	0	0	0	0	51,39%
	3,65E+02	0	0	0	0	0	0	1,88E+02
Average	0,002-02	Ŭ	Ŭ	•	•	•	Ů	1,002.02
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
				•	10		400	
Fatalities ro	1	0	1	3	10	30	100	300
Distribution-type		0	0	0	0	0	0	100,00%
-	2,15E+02	0	0	0	0	0	0	3,00E+02
3.4.33 - front-end acid and resulting			h two freig	ht trains c	arrying da	ngerous g	oods invo	lving
Fatalities pass		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption	-	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos	1	1,00E+03		1,00E+05	-	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	1	8 4,65%	14,11%	1,24%	0	0	0	0
Average		04,0070	1,41E-01	8,71E-02	0	0	0	0
Average	1,012-01			0,112-02	U U	Ū		
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average		0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-

3.4.34 - front- end acid and resulting			n two freig	ht trains c	arrying da	ngerous g	oods invo	lving
Fatalities pass	engers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type		0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type		84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
3.4.35 - front- end	- train co	112 - 2						
acid and resulting	g in mediu	ım release						
Fatalities pass	g in mediu engers	m release 0	1	3	10	30	100	300
Fatalities pass Distribution-type	<mark>g in mediu</mark> engers Poisson	m release 0 100,00%	1 0	3 0	10 0	30 0	100 0	300 0
Fatalities pass	g in mediu engers	m release 0	1	3	10	30	100	300
Fatalities pass Distribution-type Average	g in mediu engers Poisson 0	m release 0 100,00% 0	1 0	3 0 0	10 0	30 0 0	100 0	300 0 0
Fatalities pass Distribution-type Average Fatalities emp	g in mediu engers Poisson 0 loyees	m release 0 100,00% 0 0	1 0 0	3 0	10 0	30 0 0 30	100 0	300 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type	g in mediu engers Poisson 0	m release 0 100,00% 0	1 0	3 0 0 3	10 0 0 10	30 0 0	100 0 0 100	300 0 0 300
Fatalities pass Distribution-type Average Fatalities emp	g in mediu engers Poisson 0 loyees Poisson	n release 0 100,00% 0 0 100,00% 100,00%	1 0 0 1 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0	n release 0 100,00% 0 0 100,00% 100,00%	1 0 0 1 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	g in mediu engers Poisson 0 loyees Poisson 0	m release 0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0	10 0 0 10 0 0	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson	o 100,00% 0 100,00% 0 100,00% 0 0 0 0 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson	o 100,00% 0 100,00% 0 100,00% 0 0 36,79%	1 0 0 1 0 0 0 1 36,79%	3 0 0 3 0 0 0 7 26,42%	10 0 0 10 0 0 14 0,00%	30 0 0 30 0 0 30 0	100 0 0 100 0 0 180 0	300 0 0 300 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00	o 100,00% 0 100,00% 0 100,00% 0 0 36,79%	1 0 0 1 0 0 0 1 36,79%	3 0 0 3 0 0 0 7 26,42%	10 0 0 10 0 0 14 0,00%	30 0 0 30 0 0 30 0	100 0 0 100 0 0 180 0	300 0 0 300 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	y in mediu engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00	0 100,00% 0 100,00% 0 100,00% 0 30,00% 0 0 0 0 0 0	1 0 0 1 0 0 0 1 36,79% 3,68E-01	3 0 0 3 0 0 0 7 26,42% 1,85E+00	10 0 0 10 0 0 0 14 1,43E-04	30 0 0 30 0 0 30 0 0 0	100 0 0 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00	o 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0	1 0 0 1 0 0 0 0 1 36,79% 3,68E-01	3 0 0 3 0 0 0 0 7 26,42% 1,85E+00	10 0 0 10 0 0 0 14 0,00% 1,43E-04	30 0 0 30 0 0 0 30 0 0 30 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	g in mediu engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00	o 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0	1 0 0 1 0 0 0 0 1 36,79% 3,68E-01 1,00E+04 0	3 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0	10 0 0 10 0 0 0 14 0,00% 1,43E-04 1,00E+06 100,00%	30 0 0 30 0 0 0 30 0 0 0 1,00E+07 0	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Repair cos Distribution-type	in mediu engers Poisson 0 loyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	o 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0	1 0 0 1 0 0 0 0 1 36,79% 3,68E-01 1,00E+04 0	3 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0	10 0 0 10 0 0 0 14 0,00% 1,43E-04 1,00E+06 100,00%	30 0 0 30 0 0 0 30 0 0 0 1,00E+07 0	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 Ioyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	m release 0 100,00% 0 100,00% 100,00% 0 36,79% 0 1,00E+03 0 0	1 0 0 1 0 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0	3 0 0 3 0 0 0 0 7 26,42% 1,85E+00 1,00E+05 0 0	10 0 0 10 0 0 0 14 0,00% 1,43E-04 1,00E+06 1,00E+06	30 0 0 30 0 0 0 30 0 0 30 0 0 1,00E+07 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	g in mediu engers Poisson 0 Ioyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	m release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 1 0 0 0 0 36,79% 3,68E-01 1,00E+04 0 0 0	3 0 0 3 0 0 0 0 26,42% 1,85E+00 1,85E+00 0 0 0	10 0 0 10 0 0 0 14 0,00% 1,43E-04 1,00E+06 1,00E+06	30 0 0 30 0 0 0 30 0 0 1,00E+07 0 0 0 30	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	y in mediu engers Poisson 0 Ioyees Poisson 0 n Poisson 1,00E+00 sts Poisson 5,00E+05	n release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0 0 0 84,65%	1 0 0 1 0 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 0 1,00E+04 1 0 0	3 0 0 3 0 0 0 0 26,42% 1,85E+00 1,00E+05 0 0 0 0 7 1,24%	10 0 0 10 0 0 0 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	30 0 0 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	in mediu engers Poisson 0 Ioyees Poisson 0 Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson 1,67E-01	n release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 1,00E+03 0 0 0 84,65%	1 0 0 1 0 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 0 1,00E+04 1 0 0	3 0 0 3 0 0 0 0 26,42% 1,85E+00 1,00E+05 0 0 0 0 7 1,24%	10 0 0 10 0 0 0 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	30 0 0 30 0 0 0 30 0 0 1,00E+07 0 0 0 30 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	in mediu engers Poisson 0 Ioyees Poisson 0 Poisson 1,00E+00 sts Poisson 5,00E+05 oad Poisson 1,67E-01	m release 0 100,00% 0 100,00% 0 100,00% 0 36,79% 0 36,79% 0 36,79% 0 84,65% 0	1 0 0 1 0 0 0 0 1 36,79% 3,68E-01 3,68E-01 1,00E+04 0 0 0 0 1 14,11% 1,41E-01	3 0 0 3 0 0 0 0 26,42% 1,85E+00 1,85E+00 1,00E+05 0 0 0 0 1,24% 8,71E-02	10 0 0 10 0 0 0 0 14 0,00% 1,43E-04 1,00E+06 100,00% 1,00E+06	30 0 0 30 0 0 0 0 30 0 0 1,00E+07 0 0 0 30 0 0 0	 100 0 100 0 0 0 180 0 0 1,00E+08 0 0 180 0 0 180 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

3.4.36 - front- end			h two freig	ht trains c	arrying da	ngerous g	oods invo	lving
acid and resulting Fatalities pass		lease 0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
_								
Fatalities emp	loyees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruption	n	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair cos	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
Disruption r	oad	0	1	7	14	30	180	365
Distribution-type	Poisson	84,65%	14,11%	1,24%	0	0	0	0
Average	1,67E-01	0	1,41E-01	8,71E-02	0	0	0	0
Fatalities ro	bad	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0

12.11 Train derailment

	entimotiving	passonge	i uamiest		severe de	erannent		
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		-						
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disrupti	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair c	osts	1,00E+03	-	•	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	50,27%	49,73%	0	0	0	0
Average	1,00E+04	0	5,03E+03	4,97E+04	0	0	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
	<i>,</i>							0
4.2 - train derailm								300
4.2 - train derailm Fatalities pas		passenge 0	r train resu 1	ulting in se	vere derai	ilment and	l no fire	
4.2 - train derailm Fatalities pas Distribution-type	sengers Poisson	passenge	r train res	ulting in se 3	vere derai 10	ilment and <u>30</u> 21,13%	l no fire 100	300
4.2 - train derailm Fatalities pas	sengers	passenge 0 0,03%	r train resu 1 0,21%	ulting in se <u>3</u> 3,30%	vere derai 10 75,33%	ilment and <u>30</u> 21,13%	1 no fire 100 0,00%	300 0
4.2 - train derailm Fatalities pas Distribution-type Average	sengers Poisson 8,265	passenge 0 0,03%	r train resu 1 0,21%	ulting in se <u>3</u> 3,30%	vere derai 10 75,33%	ilment and <u>30</u> 21,13%	1 no fire 100 0,00%	300 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em	Poisson 8,265 ployees	passenge 0 0,03% 0	r train resu 1 0,21% 2,13E-03	3 3,30% 9,90E-02	vere dera 10 75,33% 7,53E+00	30 21,13% 6,34E+00	1 no fire 100 0,00% 1,14E-07	300 0 0
4.2 - train derailm Fatalities pas Distribution-type Average	sengers Poisson 8,265	passenge 0 0,03% 0 0	r train resu 1 0,21% 2,13E-03 1	alting in se 3 3,30% 9,90E-02 3	vere dera 10 75,33% 7,53E+00 10	ilment and 30 21,13% 6,34E+00 30	1 no fire 100 0,00% 1,14E-07 100	300 0 0 300
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type	Poisson 8,265 ployees Poisson	passenge 0 0,03% 0 0 5 2,94%	r train resu 0,21% 2,13E-03 1 33,67%	3 3,30% 9,90E-02 3 12,98%	vere derai 10 75,33% 7,53E+00 10 0,41%	ilment and 30 21,13% 6,34E+00 30 0	100 0,00% 1,14E-07 100 0	300 0 0 300 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type	sengers Poisson 8,265 ployees Poisson 0,636	passenge 0 0,03% 0 0 5 2,94%	r train resu 0,21% 2,13E-03 1 33,67%	3 3,30% 9,90E-02 3 12,98%	vere derai 10 75,33% 7,53E+00 10 0,41%	ilment and 30 21,13% 6,34E+00 30 0	100 0,00% 1,14E-07 100 0	300 0 0 300 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average	sengers Poisson 8,265 ployees Poisson 0,636	passenge 0 0,03% 0 0 52,94% 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01	alting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01	vere dera 10 75,33% 7,53E+00 10 0,41% 4,12E-02	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09	100 0,00% 1,14E-07 100 0 0	300 0 0 300 0 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Disrupti	Poisson 8,265 ployees Poisson 0,636 on	passenge 0 0,03% 0 0 52,94% 0 0 0 0 0 0 0 0 0 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1	3 3,30% 9,90E-02 3 12,98% 3,89E-01 7	vere derai 10 75,33% 7,53E+00 10 0,41% 4,12E-02 14	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30	1 no fire 100 0,00% 1,14E-07 100 0 0 0 180	300 0 0 300 0 0 365
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Distribution-type	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson	passenge 0 0,03% 0 0 52,94% 0 0 0 0 0 0 0 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67%	alting in se 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33%	vere dera 10 75,33% 7,53E+00 10 0,41% 4,12E-02 14 0	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0	1 no fire 100 0,00% 1,14E-07 100 0 0 180 0	300 0 0 300 0 0 0 365 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Distribution-type	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02	passenge 0 0,03% 0 0 52,94% 0 0 0 0 0 0 0 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67%	alting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02	vere dera 10 75,33% 7,53E+00 10 0,41% 4,12E-02 14 0 0	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0	1 no fire 100 0,00% 1,14E-07 100 0 0 180 0	300 0 0 300 0 0 365 0 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Distribution-type Average	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02	passenge 0 0,03% 0 0 52,94% 0 0 9 2,00% 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02	alting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02	vere dera 10 75,33% 7,53E+00 10 0,41% 4,12E-02 14 0 0	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 0 0 0	1 no fire 100 0,00% 1,14E-07 100 0 0 0 180 0 0	300 0 0 300 0 0 365 0 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Repair c	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02	passenge 0 0,03% 0 0 52,94% 0 0 9 2,00% 0 1,00E+03	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67F-02 1,00E+04	alting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05	vere dera 10 75,33% 7,53E+00 0,41% 4,12E-02 14 0 0 1,00E+06	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 1,00E+07	1 no fire 100 0,00% 1,14E-07 100 0 0 180 0 0 180 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02 osts Poisson	passenge 0 0,03% 0 0 52,94% 0 0 9 2,00% 0 1,00E+03 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02 1,00E+04 0	Iting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05 0	vere dera 10 75,33% 7,53E+00 0,41% 4,12E-02 14 0 0 1,00E+06 0	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 0 30 0 1,00E+07 100,00%	100 0,00% 1,14E-07 100 0 0 180 0 0 180 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type	ssengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02 osts Poisson 5,00E+06	passenge 0 0,03% 0 0 52,94% 0 0 9 2,00% 0 1,00E+03 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02 1,00E+04 0	Iting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05 0	vere dera 10 75,33% 7,53E+00 0,41% 4,12E-02 14 0 0 1,00E+06 0	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 0 30 0 1,00E+07 100,00%	100 0,00% 1,14E-07 100 0 0 180 0 0 180 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Constribution-type Average	ssengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02 osts Poisson 5,00E+06	passenge 0 0,03% 0 52,94% 0 92,00% 0 1,00E+03 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02 1,00E+04 0 0	Iting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0	vere derai 10 75,33% 7,53E+00 10 0,41% 4,12E-02 14 0 0 1,00E+06 0 0 0	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 1,00E+07 100,00% 1,00E+07	100 0,00% 1,14E-07 100 0 0 180 0 0 180 0 0 1,00E+08 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type Average Average	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02 osts Poisson 5,00E+06 road	passenge 0 0,03% 0 52,94% 0 52,94% 0 0 1,00E+03 0 0 0 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0 1	Iting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 7	vere derai 10 75,33% 7,53E+00 0,41% 4,12E-02 14 0 0 1,00E+06 0 0 0 14	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 1,00E+07 100,00% 1,00E+07 30	I no fire 100 0,00% 1,14E-07 100 0 0 180 0 1,00E+08 0 0 180	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson	passenge 0 0,03% 0 52,94% 0 0 9 2,00% 0 1,00E+03 0 0 1,00E+03 0 0 1,00E+03	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 23,88%	Jilting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 7 4,46%	vere derai 10 75,33% 7,53E+00 0,41% 4,12E-02 14 0 0 1,00E+06 0 0 1,00E+06 0 14 0,00%	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 1,00E+07 100,00% 1,00E+07 30 0 0	100 0,00% 1,14E-07 100 0 0 180 0 1,00E+08 0 0 1,00E+08 0 0	300 0 0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 3,33E-01	passenge 0 0,03% 0 52,94% 0 0 9 2,00% 0 1,00E+03 0 0 1,00E+03 0 0 1,00E+03	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 23,88%	Jilting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 7 4,46%	vere derai 10 75,33% 7,53E+00 0,41% 4,12E-02 14 0 0 1,00E+06 0 0 1,00E+06 0 14 0,00%	ilment and 30 21,13% 6,34E+00 30 0 2,89E-09 30 0 1,00E+07 100,00% 1,00E+07 30 0 0	100 0,00% 1,14E-07 100 0 0 180 0 1,00E+08 0 0 1,00E+08 0 0	300 0 0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
4.2 - train derailm Fatalities pas Distribution-type Average Fatalities em Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 8,265 ployees Poisson 0,636 on Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 3,33E-01	passenge 0 0,03% 0 52,94% 0 52,94% 0 0 1,00E+03 0 1,00E+03 0 0 1,00E+03 0 0 0 1,00E+03 0 0 0 0 1,00E+03 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 1,00E+03 0 0 0 0 0 0 0 0	r train resu 1 0,21% 2,13E-03 1 33,67% 3,37E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 23,88% 2,39E-01	Iting in se 3 3,30% 9,90E-02 3 12,98% 3,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 7 4,46% 3,12E-01	vere derai 10 75,33% 7,53E+00 0,41% 4,12E-02 14 0 0 1,00E+06 0 0 1,00E+06 0 0 14 0,00% 3,94E-08	30 21,13% 6,34E+00 30 0 2,89E-09 30 0 30 0 1,00E+07 100,00% 1,00E+07 30 0 0	I no fire 100 0,00% 1,14E-07 100 0 0 0 0 0 0 1,00E+08 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	300 0 0 300 0 0 365 0 0 0 0 1,00E+09 0 0 0 0 365 0 0 0

	ent involving	freight tra	in resultin	g in not se	vere dera	ilment		
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disrupti	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair c	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	50,27%	49,73%	0	0	0	0
Average	1,00E+04	0	5,03E+03	4,97E+04	0	0	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	95,92%	4,00%	0,08%	0	0	0	0
Average	4,17E-02	0	4,00E-02	5,91E-03	0	0	0	0
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
4.5 - train derailm invloved and no fi		freight tra	in resultin	g in severe	e derailme	ent, no dar	ngerous go	ods
Fatalities pas	sengers	0	1	3	40	30		
Distribution-type			-	3	10	••	100	300
	Poisson	100,00%	0	0	0	0	100 0	300 0
Average	Poisson 0	100,00% 0						
			0	0	0	0	0	0
	0		0	0	0	0	0	0
Average	0	0	0	0 0	0 0	0 0	0	0
Average Fatalities em	0 ployees	0 0	0 0 1	0 0 3	0 0 10	0 0 30	0 0 100	0 0 300
Average Fatalities em Distribution-type	0 ployees Poisson	0 0 57,75%	0 0 1 31,71%	0 0 3 10,30%	0 0 10 0,24%	0 0 30 0	0 0 100 0	0 0 300 0
Average Fatalities em Distribution-type	0 ployees Poisson 0,549	0 0 57,75%	0 0 1 31,71%	0 0 3 10,30%	0 0 10 0,24%	0 0 30 0	0 0 100 0	0 0 300 0
Average Fatalities em Distribution-type Average	0 ployees Poisson 0,549	0 0 57,75% 0	0 0 1 31,71% 3,17E-01	0 0 3 10,30% 3,09E-01	0 0 10 0,24% 2,45E-02	0 0 30 0 0	0 0 100 0 0	0 0 300 0 0
Average Fatalities em Distribution-type Average Disrupti	0 ployees Poisson 0,549 on	0 0 57,75% 0 0	0 0 1 31,71% 3,17E-01 1	0 0 3 10,30% 3,09E-01 7	0 0 10 0,24% 2,45E-02 14	0 0 30 0 0 30	0 0 100 0 0 180	0 0 300 0 0 365
Average Fatalities em Distribution-type Average Disrupti Distribution-type	0 ployees Poisson 0,549 on Poisson	0 0 57,75% 0 0 92,00%	0 0 1 31,71% 3,17E-01 1 7,67%	0 0 3 10,30% 3,09E-01 7 0,33%	0 0 10 0,24% 2,45E-02 14 0	0 0 30 0 0 30 0	0 0 100 0 0 180 0	0 0 300 0 0 365 0
Average Fatalities em Distribution-type Average Disrupti Distribution-type	0 ployees Poisson 0,549 on Poisson 8,33E-02	0 0 57,75% 0 0 92,00%	0 0 1 31,71% 3,17E-01 1 7,67%	0 0 3 10,30% 3,09E-01 7 0,33%	0 0 10 0,24% 2,45E-02 14 0 0	0 0 30 0 0 30 0	0 0 100 0 0 180 0	0 0 300 0 0 365 0
Average Fatalities em Distribution-type Average Distribution-type Average	0 ployees Poisson 0,549 on Poisson 8,33E-02	0 0 57,75% 0 0 92,00% 0	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02	0 0 10 0,24% 2,45E-02 14 0 0	0 0 30 0 0 30 0 0	0 0 100 0 0 180 0 0	0 0 300 0 0 365 0 0
Average Fatalities em Distribution-type Average Distribution-type Average Repair co	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts	0 0 57,75% 0 0 92,00% 0 1,00E+03	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05	0 0 10 0,24% 2,45E-02 14 0 0	0 0 30 0 0 30 0 0 0 1,00E+07	0 0 100 0 0 180 0 0 1,00E+08	0 0 300 0 0 365 0 0 0 1,00E+09
Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts Poisson	0 0 57,75% 0 0 92,00% 0 1,00E+03 0	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04 0	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05 0 0	0 0 10 0,24% 2,45E-02 14 0 0 1,00E+06 0	0 0 0 0 0 30 0 0 0 1,00E+07 100,00%	0 0 0 0 0 180 0 0 1,00E+08 0	0 0 300 0 0 365 0 0 0 1,00E+09 0
Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts Poisson 5,00E+06	0 0 57,75% 0 0 92,00% 0 1,00E+03 0	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04 0	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05 0	0 0 10 0,24% 2,45E-02 14 0 0 1,00E+06 0	0 0 0 0 0 30 0 0 0 1,00E+07 100,00%	0 0 0 0 0 180 0 0 1,00E+08 0	0 0 300 0 0 365 0 0 0 1,00E+09 0
Average Fatalities em Distribution-type Average Distribution-type Average Repair c Distribution-type Average	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts Poisson 5,00E+06	0 0 57,75% 0 9 2,00% 0 1,00E+03 0 0	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04 0 0	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05 0 0	0 0 0 2,45E-02 14 0 0 0 1,00E+06 0 0	0 0 0 0 0 30 0 0 0 1,00E+07 100,00% 1,00E+07	0 0 0 0 0 180 0 0 1,00E+08 0 0	0 0 300 0 0 365 0 0 0 1,00E+09 0 0
Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Average Distribution-type Average Distruption	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts Poisson 5,00E+06 road	0 0 57,75% 0 0 92,00% 0 1,00E+03 0 0 0	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	0 0 0 2,45E-02 14 0 0 0 1,00E+06 0 0 0	0 0 0 0 0 30 0 0 0 1,00E+07 100,00% 1,00E+07 30	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0
Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson	0 0 57,75% 0 92,00% 0 1,00E+03 0 0 1,00E+03 0 1,00E+03	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 4,46%	0 0 0 10 0,24% 2,45E-02 14 0 0 1,00E+06 0 0 0 1,00E+06	0 0 0 0 0 0 0 0 0 0 0 1,00E+07 100,00% 1,00E+07 30 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Average Distribution-type Distribution-type	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 3,33E-01	0 0 57,75% 0 92,00% 0 1,00E+03 0 0 1,00E+03 0 1,00E+03	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 4,46%	0 0 0 10 0,24% 2,45E-02 14 0 0 1,00E+06 0 0 0 1,00E+06	0 0 0 0 0 0 0 0 0 0 0 1,00E+07 100,00% 1,00E+07 30 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Average Fatalities em Distribution-type Average Distribution-type Average Repair co Distribution-type Average Distribution-type Average Distribution-type Average	0 ployees Poisson 0,549 on Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 3,33E-01	0 0 57,75% 0 92,00% 0 1,00E+03 0 0 0 71,65% 0	0 0 1 31,71% 3,17E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 23,88% 2,39E-01	0 0 3 10,30% 3,09E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 4,46% 3,12E-01	0 0 0 10 0,24% 2,45E-02 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 3,94E-08	0 0 0 0 0 0 30 0 0 0 1,00E+07 100,00% 1,00E+07 30 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0

4.1.1 - train derailı	ment involvir	ng dangero	us goous	vennene eu	inying ipg	i o oanting i	ii no reieu	~
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
			I				1	I
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities	road	0	1	3	10	30	100	300
Distribution ture	Poisson	100,00%	0	0	0	0	0	0
Distribution-type	1 0133011	,	-					
Distribution-type Average	0	0	0	0	0	0	0	0
			0	0	0	0	0	0
	0	0	-			-	-	
Average 4.1.2 - train derail	0 ment involvir	0	-			-	-	
Average 4.1.2 - train derailu ignition	0 ment involvir	0 ng dangero	ous goods	vehicle ca	rrying lpg	resulting i	n small rei	lease no
Average 4.1.2 - train derailu ignition Fatalities pas	0 ment involvir sengers	0 ng dangero 0	ous goods 1	vehicle ca 3	rrying lpg 10	resulting i 30	n small re 100	lease no 300
Average 4.1.2 - train derailu ignition Fatalities pas Distribution-type	0 ment involvir sengers Poisson	0 ng dangero 0 100,00%	ous goods 1 0	vehicle ca 3 0	rrying lpg 10 0	resulting i 30 0	n small rei 100 0	ease no 300 0
Average 4.1.2 - train derailu ignition Fatalities pas Distribution-type	0 ment involvir sengers Poisson 0	0 ng dangero 0 100,00%	ous goods 1 0	vehicle ca 3 0	rrying lpg 10 0	resulting i 30 0	n small rei 100 0	ease no 300 0
Average 4.1.2 - train derail ignition Fatalities pass Distribution-type Average	0 ment involvir sengers Poisson 0	0 ng dangero 0 100,00% 0	nus goods 1 0 0	vehicle ca 3 0 0	rrying lpg 10 0 0	resulting i 30 0 0	n small re 100 0 0	300 0 0
Average 4.1.2 - train derailu ignition Fatalities pass Distribution-type Average Fatalities emp	0 ment involvir sengers Poisson 0 ployees	0 ng dangero 0 100,00% 0 0	0 0 0 1	vehicle ca 3 0 0 3	rrying lpg 10 0 0 10	resulting i 30 0 0 30	n small re 100 0 0 100	ease no 300 0 0 300
Average 4.1.2 - train derailu ignition Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 ment involvir sengers Poisson 0 ployees Poisson	0 ng dangero 0 100,00% 0 0 100,00%	1 0 0 1 0	vehicle ca 3 0 0 3 0	rrying lpg 10 0 0 10 0	resulting i 30 0 0 30 0	n small re 100 0 0 100 0	ease no 300 0 0 300 0
Average 4.1.2 - train derailu ignition Fatalities pass Distribution-type Average Fatalities emp Distribution-type	0 ment involvir sengers Poisson 0 ployees Poisson 0	0 ng dangero 0 100,00% 0 0 100,00%	1 0 0 1 0	vehicle ca 3 0 0 3 0	rrying lpg 10 0 0 10 0	resulting i 30 0 0 30 0	n small re 100 0 0 100 0	ease no 300 0 0 300 0
Average 4.1.2 - train derailu ignition Fatalities pase Distribution-type Average Distribution-type Average	0 ment involvir sengers Poisson 0 ployees Poisson 0	0 ng dangero 0 100,00% 0 100,00% 0	1 0 0 1 0 0	vehicle ca 3 0 0 3 0 0 0	rrying lpg 10 0 0 10 0 0 0	resulting i 30 0 0 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0	n small re 100 0 0 100 0 0 0	ease no 300 0 0 0 300 0 0 0
Average 4.1.2 - train derails ignition Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average	0 ment involvir sengers Poisson 0 ployees Poisson 0	0 ng dangero 0 100,00% 0 100,00% 0	2000 goods 1 0 1 0 0 1 1 1 1	vehicle ca 3 0 0 3 0 0 0 7	rrying lpg 10 0 10 0 0 14	resulting i 30 0 0 30 0 0 30 30	n small re 100 0 100 0 0 180	ease no 300 0 300 0 0 0 0 365
Average 4.1.2 - train derailuignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	0 ment involvir sengers Poisson 0 ployees Poisson 0 on Poisson 8,33E-02	0 ng dangero 0 100,00% 0 100,00% 0 0 92,00% 0	2000 2000 2000 2000 2000 2000 2000 200	vehicle ca 3 0 0 3 0 0 0 7 0,33% 2,30E-02	10 0 0 10 0 10 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	resulting i 30 0 0 30 0 30 0 30 0 0 0 0 0 0 0 0 0	n small re 100 0 100 0 180 0 0 0	ease no 300 0 0 300 0 0 0 365 0 0 0
Average 4.1.2 - train derailu ignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Repair co	0 ment involvir sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02	0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03	1 0 0 1 0 1 7,67% 7,67E-02 1,00E+04	vehicle ca 3 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05	rrying lpg 10 0 0 10 0 10 0 10 0 14 0 0 0 14 0 0 1,00E+06	resulting i 30 0 0 30 0 0 30 0 0 1,00E+07	n small re 100 0 0 100 0 180 0 0 1,00E+08	ease no 300 0 0 300 0 0 365 0 0 0 1,00E+09
Average 4.1.2 - train derailuignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	0 ment involvir sengers Poisson 0 ployees Poisson 0 on Poisson 8,33E-02	0 ng dangero 0 100,00% 0 100,00% 0 0 92,00% 0	2000 2000 2000 2000 2000 2000 2000 200	vehicle ca 3 0 0 0 3 0 0 7 0,33% 2,30E-02 1,00E+05 0	10 0 0 10 0 10 0 14 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	resulting i 30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00%	n small re 100 0 100 0 180 0 0 0	ease no 300 0 0 300 0 0 0 365 0 0 0
Average 4.1.2 - train derailu ignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Repair co	0 ment involvir sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02	0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03	1 0 0 1 0 1 7,67% 7,67E-02 1,00E+04	vehicle ca 3 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05	rrying lpg 10 0 0 10 0 10 0 10 0 14 0 0 0 14 0 0 1,00E+06	resulting i 30 0 0 30 0 0 30 0 0 1,00E+07	n small re 100 0 0 100 0 180 0 0 1,00E+08	ease no 300 0 0 300 0 0 365 0 0 0 1,00E+09
Average 4.1.2 - train derailu ignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Constribut	0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06	0 ng dangero 0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03 0	2000 goods 1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0	vehicle ca 3 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0	rrying lpg 10 0 0 10 0 10 0 14 0 0 1,00E+06 0	resulting i 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	n small re 100 0 0 100 0 180 0 0 1,00E+08 0	ease no 300 0 0 300 0 365 0 0 1,00E+09 0
Average 4.1.2 - train derailuignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-ty	0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06	0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	2000 goods 1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 1 1	vehicle ca 3 0 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 7	rrying lpg 10 0 0 10 0 10 0 10 0 10 0 14 0 0 0 1,00E+06 0 0 0 14	resulting i 30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00%	n small re 100 0 0 100 0 180 0 1,00E+08 0 0 180	ease no 300 0 0 300 0 0 365 0 0 0 1,00E+09 0
Average 4.1.2 - train derailu ignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Constribut	0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06	0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	1 0 0 0 1 0 0 1 7,67% 7,67F-02 1,00E+04 0 0	vehicle ca 3 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0	rrying lpg 10 0 0 0 10 0 10 0 10 0 0 10 0 0 0 0 0 0 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>resulting i 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07</td> <td>n small re 100 0 0 100 0 180 0 0 1,00E+08 0 0 0</td> <td>ease no 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0</td>	resulting i 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	n small re 100 0 0 100 0 180 0 0 1,00E+08 0 0 0	ease no 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0
Average 4.1.2 - train derail ignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Average Constribution-type Constribution-typ	0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06	0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	2000 goods 1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 1 1	vehicle ca 3 0 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 7	rrying lpg 10 0 0 10 0 10 0 10 0 10 0 14 0 0 0 1,00E+06 0 0 0 14	resulting i 30 0 0 30 0 0 30 0 30 0 1,00E+07 100,00% 1,00E+07 30	n small re 100 0 0 100 0 180 0 1,00E+08 0 0 180	ease no 300 0 0 300 0 0 365 0 0 1,00E+09 0 0 365
Average 4.1.2 - train derail ignition Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson	0 ng dangero 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	27,47%	vehicle ca 3 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 7 6,61%	rrying lpg 10 0 0 0 10 0 10 0 10 0 0 10 0 0 0 0 0 0 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>resulting i 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07 30 0 0</td> <td>n small re 100 0 0 100 0 180 0 1,00E+08 0 0 180 0 0</td> <td>ease no 300 0 0 300 0 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0</td>	resulting i 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07 30 0 0	n small re 100 0 0 100 0 180 0 1,00E+08 0 0 180 0 0	ease no 300 0 0 300 0 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average 4.1.2 - train derail ignition Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 ng dangero 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	27,47%	vehicle ca 3 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 7 6,61%	rrying lpg 10 0 0 0 10 0 10 0 10 0 0 10 0 0 0 0 0 0 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>resulting i 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07 30 0 0</td> <td>n small re 100 0 0 100 0 180 0 1,00E+08 0 0 180 0 0</td> <td>ease no 300 0 0 300 0 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0</td>	resulting i 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07 30 0 0	n small re 100 0 0 100 0 180 0 1,00E+08 0 0 180 0 0	ease no 300 0 0 300 0 0 0 365 0 0 1,00E+09 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Average 4.1.2 - train derail ignition Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Average Constribution-type Constributio	0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	27,47% 2,75E-01	vehicle ca 3 0 0 0 3 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 7 6,61% 4,63E-01	rrying lpg 10 0 0 10 0 10 0 10 0 10 0 0 14 0 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0	resulting i 30 0 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	n small re 100 0 0 100 0 180 0 0 1,00E+08 0 0 180 0 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	ease no 300 0 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0

4.1.3 - train derailr	nent involvir	ng dangero	ous goods	vehicle ca	rrying lpg	resulting i	n small	
releasedelayed ign							1	
Fatalities pass	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	oloyees	0	1	3	10	30	100	300
Distribution-type	Poisson	38,67%	36,74%	22,98%	1,61%	0,00%	0	0
Average	0,95	0	3,67E-01	6,89E-01	1,61E-01	1,79E-07	0	0
Disruptio	n	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
			,	,		L	I	l
Repair co	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	5,00E+08	0	0	0	0	0	0	1,00E+09
	-	ļ				l .	1	
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
	,					l	I	,
Fatalities r	oad	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
4.1.5 - train derailr		-	_	-	-		_	
immediate ignition			J		5 5 1 5			5
Fatalities pass	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	oloyees	0	1	3	10	30	100	300
Distribution-type	Poisson	38,67%	36,74%	22,98%	1,61%	0,00%	0	0
Average	0,95	0	3,67E-01	6,89E-01	1,61E-01	1,79E-07	0	0
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair co	sts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	100,00%	0	0	0
Average	5,00E+05	0	0	0	1,00E+06	0	0	0
		•	•				•	•
	rood	0	1	7	14	30	180	365
Disruption	loau							
Disruption Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Distribution-type		0	0	0	0	0	0	
	Poisson							
Distribution-type Average	Poisson 3,65E+02				0		0	
Distribution-type	Poisson 3,65E+02	0	0	0		0		1,88E+02

	•	-	vehicle ca	rrying lpg	resulting i	n medium	release,		
			2	10	20	100	200		
<u> </u>			-	-			300 0		
		-	-	-	÷	-	0		
U	0	0	0	0	0	0	0		
ployees	0	1	3	10	30	100	300		
Poisson	100,00%	0	0	0	0	0	0		
0	0	0	0	0	0	0	0		
							365		
				-		-	0		
8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0		
osts	1 00F+03	1 00F+04	1 00E+05	1 00F+06	1 00F+07	1 00F+08	1,00E+09		
					-		0		
5,00E+06	0	0	0	0		0	0		
	-		·		,		-		
road	0	1	7	14	30	180	365		
Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0		
4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0		
road	0	1	3	10	30	100	300		
Poisson	100,00%	0	0	0	0	0	0		
0	0	0	0	0	0	0	0		
tion leading					resulting i	n medium	release		
sengers	0	1	3	10	30	100			
Poisson	100,00%		-	-		100	300		
~		0	0	0	0	0	300 0		
0	0	0 0	-	0	0 0				
-	0		0	0	0	0	0		
ployees	0 0	0	0 0 3	0	0 30	0 0 100	0 0 300		
ployees Poisson	0 0 38,67%	0 1 36,74%	0 0 3 22,98%	0 10 1,61%	0 30 0,00%	0 0 100 0	0 0 300 0		
ployees	0 0	0	0 0 3	0	0 30	0 0 100	0 0 300		
ployees Poisson 0,95	0 0 38,67%	0 1 36,74%	0 0 3 22,98%	0 10 1,61%	0 30 0,00%	0 0 100 0 0	0 0 300 0		
ployees Poisson 0,95 on	0 38,67% 0	0 1 36,74% 3,67E-01	0 0 3 22,98% 6,89E-01	0 1,61% 1,61E-01	0 30 0,00% 1,79E-07	0 0 100 0	0 0 300 0 0		
ployees Poisson 0,95	0 0 38,67% 0 0	0 1 36,74% 3,67E-01 1	0 0 22,98% 6,89E-01 7	0 1,61% 1,61E-01 14	0 30 0,00% 1,79E-07 30	0 0 100 0 0 180	0 0 300 0 0 365		
ployees Poisson 0,95 on Poisson	0 0 38,67% 0 0 92,00%	0 1 36,74% 3,67E-01 1 7,67%	0 0 22,98% 6,89E-01 7 0,33%	0 10 1,61% 1,61E-01 14 0	0 30 0,00% 1,79E-07 30 0	0 0 100 0 0 180 0	0 0 300 0 0 365 0		
ployees Poisson 0,95 on Poisson	0 0 38,67% 0 0 92,00%	0 1 36,74% 3,67E-01 1 7,67%	0 0 22,98% 6,89E-01 7 0,33%	0 10 1,61% 1,61E-01 14 0 0	0 30 0,00% 1,79E-07 30 0	0 0 100 0 0 180 0	0 0 300 0 0 0 365 0		
ployees Poisson 0,95 on Poisson 8,33E-02	0 38,67% 0 92,00% 0 1,00E+03 100,00%	0 1 36,74% 3,67E-01 1 7,67% 7,67E-02	0 0 22,98% 6,89E-01 7 0,33% 2,30E-02	0 10 1,61% 1,61E-01 14 0 0	0 30 0,00% 1,79E-07 30 0 0	0 0 100 0 0 180 0 0	0 0 300 0 0 365 0 0		
ployees Poisson 0,95 on Poisson 8,33E-02 osts	0 38,67% 0 92,00% 0 1,00E+03	0 1 36,74% 3,67E-01 1 7,67% 7,67E-02 1,00E+04	0 0 3 22,98% 6,89E-01 7 0,33% 2,30E-02 1,00E+05	0 1,61% 1,61E-01 14 0 0 1,00E+06	0 30 0,00% 1,79E-07 30 0 0 1,00E+07	0 0 100 0 0 180 0 0 1,00E+08	0 0 300 0 0 365 0 0 0 1,00E+09		
ployees Poisson 0,95 on Poisson 8,33E-02 osts Poisson 1,00E-02	0 38,67% 0 92,00% 0 1,00E+03 100,00% 1,00E+03	0 1 36,74% 3,67E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 3 22,98% 6,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0	0 1,61% 1,61E-01 14 0 0 1,00E+06 0 0	0 30 0,00% 1,79E-07 30 0 0 1,00E+07 0 0	0 0 0 0 0 180 0 0 1,00E+08 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0		
ployees Poisson 0,95 Dn Poisson 8,33E-02 Dsts Poisson 1,00E-02 road	0 38,67% 0 92,00% 0 1,00E+03 100,00% 1,00E+03	0 1 36,74% 3,67E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 3 22,98% 6,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	0 1,61% 1,61E-01 14 0 0 1,00E+06 0 0 14	0 30 0,00% 1,79E-07 30 0 0 1,00E+07 0 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 0 0 0 0 365		
ployees Poisson 0,95 on Poisson 8,33E-02 osts Poisson 1,00E-02 road Poisson	0 38,67% 0 92,00% 0 1,00E+03 100,00% 1,00E+03 0 0	0 1 36,74% 3,67E-01 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 0 22,98% 6,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0	0 10 1,61% 1,61E-01 14 0 0 1,00E+06 0 0 14 0 14 0	0 30 0,00% 1,79E-07 30 0 1,00E+07 0 0 30 30 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 365 51,39%		
ployees Poisson 0,95 Dn Poisson 8,33E-02 Dsts Poisson 1,00E-02 road	0 38,67% 0 92,00% 0 1,00E+03 100,00% 1,00E+03	0 1 36,74% 3,67E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 3 22,98% 6,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	0 1,61% 1,61E-01 14 0 0 1,00E+06 0 0 14	0 30 0,00% 1,79E-07 30 0 0 1,00E+07 0 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 365 51,39%		
ployees Poisson 0,95 Dn Poisson 8,33E-02 Dosts Poisson 1,00E-02 road Poisson 3,65E+02	0 38,67% 0 92,00% 0 1,00E+03 1,00E+03 0 0 0 0	0 1 36,74% 3,67E-01 7,67% 7,67E-02 1,00E+04 0 0 0 1 0 0	0 0 3 22,98% 6,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0	0 1,61% 1,61E-01 14 0 0 1,00E+06 0 0 14 0 0 0 0 0 14 0 0 0 0 0 0 0 0 0 0 0 0 0	0 30 0,00% 1,79E-07 30 0 0 1,00E+07 0 0 0 30 0 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0 0	0 0 0 0 0 0 365 0 0 0 0 1,00E+09 0 0 0 0 51,39% 1,88E+02		
ployees Poisson 0,95 on Poisson 8,33E-02 osts Poisson 1,00E-02 road Poisson	0 38,67% 0 92,00% 0 1,00E+03 100,00% 1,00E+03 0 0	0 1 36,74% 3,67E-01 7,67% 7,67E-02 1,00E+04 0 0 0	0 0 0 22,98% 6,89E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0	0 10 1,61% 1,61E-01 14 0 0 1,00E+06 0 0 14 0 14 0	0 30 0,00% 1,79E-07 30 0 1,00E+07 0 0 30 30 0	0 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	0 0 0 0 0 365 0 0 0 1,00E+09 0 0 0 365		
	tion leading sengers Poisson 0 Poisson 0 Poisson 8,33E-02 0 5,00E+06 5,00E+06 7 70ad Poisson 4,17E-01 70ad Poisson 0 70ad Poisson 0	Ition leading to no igniti sengers 0 Poisson 100,00% 0 0 ployees 0 Poisson 100,00% 0 0 Poisson 100,00% 0 0 Poisson 100,00% 0 0 Poisson 92,00% 8,33E-02 0 Poisson 0 5,00E+06 0 road 0 Poisson 65,92% 4,17E-01 0 road 0 Poisson 100,00% 0 0 Image: Poisson 0 Poisson 65,92% 4,17E-01 0 Image: Poisson 100,00% 0 0 Image: Poisson 100,00% 0 0	Ition leading to no ignition sengers 0 1 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 ployees 0 1 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 1 0 2 0 1,00E+03 1,00E+04 0 0 0 0 0 0 0 5,00E+06 0 0 0 0 road 0 1 0 2,75E-01 road 0 1 0 0 0 0 0 0 0 0 0	Ition leading to no ignition sengers 0 1 3 Poisson 100,00% 0 0 0 0 0 0 0 ologees 0 1 3 Poisson 100,00% 0 0 ployees 0 1 3 Poisson 100,00% 0 0 0 0 0 0 0 on 0 1 7 Poisson 92,00% 7,67% 0,33% 8,33E-02 0 7,67E-02 2,30E-02 osts 1,00E+03 1,00E+04 1,00E+05 Poisson 0 0 0 stos 1,00E+03 1,00E+04 1,00E+05 Poisson 0 0 0 road 0 1 7 Poisson 65,92% 27,47% 6,61% 4,17E-01 0 2,75E-01 4,63E-01 <th <="" colspan="2" td=""><td>Ition leading to no ignition Ition sengers 0 1 3 10 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Poisson 100,00% 0 0 0 0 0 0 0 1 7 14 Poisson 92,00% 7,67% 0,33% 0 8,33E-02 0 7,67E-02 2,30E-02 0 osts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 Poisson 0 0 0 0 0 sts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 Poisson 0 0 0 0 0 road 0 1 7</td><td>tion leading to no ignition 3 10 30 sengers 0 1 3 10 30 Poisson 100,00% 0 0 0 0 0 o 0 0 0 0 0 0 0 0 ployees 0 1 3 10 30 30 ployees 0 1 3 10 30 30 ployees 0 1 3 10 30 30 poisson 100,00% 0 0 0 0 0 0 on 0 1 7 14 30 30 0 poisson 92,00% 7,67% 0,33% 0 0 0 sts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 Poisson 0 0 0 0 0 0 0 road 0 1<td>sengers 0 1 3 10 30 100 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td></td></th>	<td>Ition leading to no ignition Ition sengers 0 1 3 10 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Poisson 100,00% 0 0 0 0 0 0 0 1 7 14 Poisson 92,00% 7,67% 0,33% 0 8,33E-02 0 7,67E-02 2,30E-02 0 osts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 Poisson 0 0 0 0 0 sts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 Poisson 0 0 0 0 0 road 0 1 7</td> <td>tion leading to no ignition 3 10 30 sengers 0 1 3 10 30 Poisson 100,00% 0 0 0 0 0 o 0 0 0 0 0 0 0 0 ployees 0 1 3 10 30 30 ployees 0 1 3 10 30 30 ployees 0 1 3 10 30 30 poisson 100,00% 0 0 0 0 0 0 on 0 1 7 14 30 30 0 poisson 92,00% 7,67% 0,33% 0 0 0 sts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 Poisson 0 0 0 0 0 0 0 road 0 1<td>sengers 0 1 3 10 30 100 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td></td>		Ition leading to no ignition Ition sengers 0 1 3 10 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Poisson 100,00% 0 0 0 0 0 0 0 1 7 14 Poisson 92,00% 7,67% 0,33% 0 8,33E-02 0 7,67E-02 2,30E-02 0 osts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 Poisson 0 0 0 0 0 sts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 Poisson 0 0 0 0 0 road 0 1 7	tion leading to no ignition 3 10 30 sengers 0 1 3 10 30 Poisson 100,00% 0 0 0 0 0 o 0 0 0 0 0 0 0 0 ployees 0 1 3 10 30 30 ployees 0 1 3 10 30 30 ployees 0 1 3 10 30 30 poisson 100,00% 0 0 0 0 0 0 on 0 1 7 14 30 30 0 poisson 92,00% 7,67% 0,33% 0 0 0 sts 1,00E+03 1,00E+04 1,00E+05 1,00E+06 1,00E+07 Poisson 0 0 0 0 0 0 0 road 0 1 <td>sengers 0 1 3 10 30 100 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td>	sengers 0 1 3 10 30 100 Poisson 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

4.1.10 - train derai release, immediat			ous goods	svehicle c	arrying lpg	g resulting	in mediur	n
Fatalities pas			1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	38,67%	36,74%	22,98%	1,61%	0,00%	0	0
Average	0,95	0	3,67E-01	6,89E-01	1,61E-01	1,79E-07	0	0
							-	
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
						-		-
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	1,00E-01	1,00E+03	0	0	0	0	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
		-						
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
4.1.12 - train derai		ing dangei	rous goods	svehicle c	arrying lpg	g resulting	in large r	elease
leading to no ignit		0	1	2	40	20	400	200
Fatalities pas	-	100,00%	-	3	10	30	100	300
Distribution-type	Poisson 0	0	0	0	0	0	0	0
Average	U	0	0	0	0	0	0	0
Estalities em		0	4	2	40	20	100	200
Fatalities em			1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio		0	1	7	14	30	180	365
Distribution-type	Poisson	92,00% 0	7,67%	0,33% 2,30E-02	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair co	nete	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
		1,00E+03	1,00E+04	0	0	100,00%	0	1,00E+03
Distribution-type Average	Poisson 5,00E+06	0	0	0	0	1,00E+07	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	20	180	365
Disruption		65,92%		6,61%	0,00%	30 0	0	0
Distribution-type	Poisson	05,92%	27,47% 2,75E-01	4,63E-01		0	0	0
Average	4,17E-01	U	∠,≀⊃⊏-01	4,03⊏-01	2,18E-07	U	U	U
-								
Est-liti-	ro o d	•	4	•	40	20	400	200
Fatalities		0	1	3	10	30	100	300
Fatalities Distribution-type Average	road Poisson 0	0 100,00% 0	1 0 0	3 0 0	10 0	30 0 0	100 0 0	300 0 0

4.1.13 - train dera no immediate igni			-			g resulting	inlarge re	lease,
Fatalities pas		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	38,67%	36,74%	22,98%	1,61%	0,00%	0	0
Average	0,95	0	3,67E-01	6,89E-01	1,61E-01	1,79E-07	0	0
Disrupti	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	5,00E+00	1,00E+03	0	0	0	0	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02

4.2.1 - train derailı	ment involvir	ng dangero	ous goods	vehicle ca	rrying amr	nonia res	ulting in n	o release
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		1						
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	Average 8,33E-02		7,67E-02	2,30E-02	0	0	0	0
<u>-</u>		•						
Repair costs		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type Poisson		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
4.2.2 - train derail release	ment involvir	ng dangero	ous goods	vehicle ca	rrying amr	nonia res	ulting in s	mall
		ng dangero 0	ous goods ⁻ 1	vehicle ca 3	rrying amr 10	monia res 30	ulting in s	mall 300
release			-				-	
release Fatalities pas	sengers	0	1	3	10	30	100	300
release Fatalities pas Distribution-type	sengers Poisson	0 100,00%	- 1 0	3 0	10 0	30 0	100 0	300 0
release Fatalities pas Distribution-type	sengers Poisson 0	0 100,00%	- 1 0	3 0	10 0	30 0	100 0	300 0
release Fatalities pass Distribution-type Average	sengers Poisson 0	0 100,00% 0	1 0 0	3 0 0	10 0	30 0 0	100 0 0 100 0	300 0 0
release Fatalities pass Distribution-type Average Fatalities em	sengers Poisson 0 ployees	0 100,00% 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	300 0 0 300
release Fatalities pass Distribution-type Average Fatalities em Distribution-type Average	sengers Poisson 0 ployees Poisson 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0	10 0 0 10 0 0	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distruption	sengers Poisson 0 ployees Poisson 0 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
release Fatalities pass Distribution-type Average Fatalities em Distribution-type Average	sengers Poisson 0 ployees Poisson 0 con Poisson	0 100,00% 0 100,00% 0	1 0 0 1 0 0 1 7,67%	3 0 0 3 0 0 0 7 0,33%	10 0 0 10 0 0	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distruption	sengers Poisson 0 ployees Poisson 0 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02	0 100,00% 0 100,00% 0 92,00% 0	1 0 0 1 0 0 1 7,67% 7,67E-02	3 0 0 3 0 0 0 7 0,33% 2,30E-02	10 0 0 10 0 0 14 0 0	30 0 0 30 0 0 30 0 0	100 0 0 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
release Fatalities pass Distribution-type Average Fatalities em Distribution-type Average Distribution-type Distribution-type Average	sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02 posts	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05	10 0 0 10 0 0 14 0 0 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 0 1,00E+09
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-typ	sengers Poisson 0 Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0	10 0 0 10 0 0 14 0 0 0 1,00E+06 0	30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00%	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
release Fatalities pass Distribution-type Average Fatalities em Distribution-type Average Distribution-type Distribution-type Average	sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02 posts	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05	10 0 0 10 0 0 14 0 0 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 0 1,00E+09
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Constribution-type Average	sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 posts Poisson 5,00E+06	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 0 0 1 7,67% 7,67F-02 1,00E+04 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0	30 0 0 30 0 0 30 30 0 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 365 0 0 0 0 1,00E+09 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average CDistribution-type Average Distribution-type Average Distribution-type	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0	10 0 0 10 0 0 14 0 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Comparison Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0	1 0 0 1 0 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61%	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 0 365 0 0 1,00E+09 0 0 0 365 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average CDistribution-type Average Distribution-type Average Distribution-type	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0	10 0 0 10 0 0 14 0 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365
release Fatalities pass Distribution-type Average	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 0 0 0 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 0 7 6,61% 4,63E-01	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Component of the type Average Component of the type Component of t	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 65,92% 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 0 0 0 7 6,61% 4,63E-01	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 14 0,00% 2,18E-07	30 0 0 30 0 0 0 30 0 0 30 1,00E+07 100,00% 1,00E+07 30 0 0 0 30	100 0 0 100 0 0 0 180 0 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 0 180 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365 0 0 0 365
release Fatalities pass Distribution-type Average	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 0 0 0 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 0 7 6,61% 4,63E-01	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0

4.2.3 - train derailr	ment involvir	ng dangero	ous goods	vehicle ca	rrying am	monia res	ulting in m	nedium
release	_							
Fatalities pas	-	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	77,88%	19,47%	2,64%	0,01%	0	0	0
Average	0,25	0	1,95E-01	7,91E-02	1,33E-03	0	0	0
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
		•						
Repair co	Repair costs		1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
4.2.4 train density								
4.2.4 - train derain release	ment involvir	ng dangero	ous goods	vehicle ca	rrying amı	monia res	ulting in la	arge
		ng dangero 0	ous goods 1	vehicle ca 3	rrying amı 10	monia res 30	sulting in la	arge 300
release			-				-	-
release Fatalities pas	sengers	0	1	3	10	30	100	300
release Fatalities pass Distribution-type	sengers Poisson	0 100,00%	- 1 0	3 0	10 0	30 0	100 0	300 0
release Fatalities pass Distribution-type	sengers Poisson 0	0 100,00%	- 1 0	3 0	10 0	30 0	100 0	300 0
release Fatalities pass Distribution-type Average	sengers Poisson 0	0 100,00% 0	1 0 0	3 0 0	10 0	30 0 0	100 0 0	300 0 0
release Fatalities pass Distribution-type Average Fatalities emp	sengers Poisson 0 ployees	0 100,00% 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	300 0 0 300
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type	sengers Poisson 0 ployees Poisson	0 100,00% 0 68,73%	1 0 0 1 25,77%	3 0 0 3 5,44%	10 0 0 10 0,06%	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type	sengers Poisson 0 ployees Poisson 0,375	0 100,00% 0 68,73%	1 0 0 1 25,77%	3 0 0 3 5,44%	10 0 0 10 0,06%	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	sengers Poisson 0 ployees Poisson 0,375	0 100,00% 0 68,73% 0	1 0 0 1 25,77% 2,58E-01	3 0 0 3 5,44% 1,63E-01	10 0 0 10 0,06% 6,12E-03	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	sengers Poisson 0 ployees Poisson 0,375	0 100,00% 0 68,73% 0	1 0 0 1 25,77% 2,58E-01	3 0 0 3 5,44% 1,63E-01 7	10 0 0 10 0,06% 6,12E-03	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02	0 100,00% 0 68,73% 0 92,00% 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02	10 0 0 10 0,06% 6,12E-03 14 0 0	30 0 0 30 0 0 30 0 0	100 0 0 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02	0 100,00% 0 68,73% 0 92,00%	1 0 0 1 25,77% 2,58E-01 1 7,67%	3 0 0 3 5,44% 1,63E-01 7 0,33%	10 0 0 10 0,06% 6,12E-03 14 0 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0	300 0 0 300 0 0 0 365 0
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0	10 0 0 10 0,06% 6,12E-03 14 0 0	30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00%	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Constribution-type Average	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02 osts	0 100,00% 0 68,73% 0 92,00% 0 1,00E+03	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05	10 0 0 10 0,06% 6,12E-03 14 0 0 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Constribution-type Average	sengers Poisson 0 ployees Poisson 0,375 pn Poisson 8,33E-02 posts Poisson 5,00E+06	0 100,00% 0 68,73% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0	10 0 0 10 0,06% 6,12E-03 14 0 0 0 1,00E+06 0 0	30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0
release Fatalities pass Distribution-type Average Distribution-type	sengers Poisson 0 Poisson 0,375 on Poisson 8,33E-02 osts Poisson 5,00E+06 road	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 25,77% 2,58E-01 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	10 0 0 10 0,06% 6,12E-03 14 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
release Fatalities pass Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	10 0 0 0 0 0 0 6,12E-03 14 0 0 0 1,00E+06 0 0 0 14 0,00%	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0	300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0
release Fatalities pass Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type	sengers Poisson 0 Poisson 0,375 on Poisson 8,33E-02 osts Poisson 5,00E+06 road	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 25,77% 2,58E-01 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	10 0 0 0 0 0 0 0 1,00E+06 0 0 0 14	30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
release Fatalities pass Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Comparise Comp	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 0 0 0 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 0 0 0 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 2,18E-07	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
release Fatalities pass Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Comparise Distribution-type Comparise Distribution-type Comparise Distribution-type Comparise Comparise Distribution-type Comparise Co	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 65,92% 0	1 0 0 1 25,77% 2,58E-01 7,67% 7,67E-02 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 0 0 0 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 14 0,00% 2,18E-07	30 0 0 30 0 0 30 0 0 30 1,00E+07 100,00% 1,00E+07 30 0 0 30	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365
release Fatalities pass Distribution-type Average Fatalities emp Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 0 0 0 0	1 0 0 1 25,77% 2,58E-01 7,67% 7,67E-02 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 0 0 0 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 2,18E-07	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

4.3.1 - train deraili	ment involvir	ng dangero	ous goods '	vehicle ca	rrying amı	nonia res	ulting in n	o release
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	plovees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
		1						
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	Average 8,33E-02		7,67E-02	2,30E-02	0	0	0	0
<u>-</u>		•					•	
Repair costs		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type Poisson		0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
		-						-
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
4.3.2 - train derailment involvi								
release			-				-	
release Fatalities pas	sengers	0	1	3	10	30	100	300
release Fatalities pas Distribution-type	sengers Poisson	0 100,00%	- 1 0	3 0	10 0	30 0	100 0	300 0
release Fatalities pas	sengers	0	1	3	10	30	100	300
release Fatalities pass Distribution-type Average	sengers Poisson 0	0 100,00% 0	1 0 0	3 0 0	10 0	30 0 0	100 0 0	300 0 0
release Fatalities pass Distribution-type Average Fatalities em	sengers Poisson 0 ployees	0 100,00% 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	300 0 0 300
release Fatalities pass Distribution-type Average Fatalities em Distribution-type	sengers Poisson 0 ployees Poisson	0 100,00% 0 100,00%	1 0 0 1 0	3 0 0 3 0	10 0 0 10 0	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
release Fatalities pass Distribution-type Average Fatalities em	sengers Poisson 0 ployees	0 100,00% 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	300 0 0 300
release Fatalities pass Distribution-type Average Fatalities em Distribution-type Average	sengers Poisson 0 ployees Poisson 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0	10 0 0 10 0	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distruption	sengers Poisson 0 ployees Poisson 0 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type	sengers Poisson 0 ployees Poisson 0 con Poisson	0 100,00% 0 100,00% 0 0 92,00%	1 0 0 1 0 0 1 7,67%	3 0 0 3 0 0 0 7 0,33%	10 0 0 10 0 0 14 0	30 0 0 30 0 0 30 0	100 0 0 100 0 0 180 0	300 0 0 300 0 0 365 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type	sengers Poisson 0 ployees Poisson 0 0	0 100,00% 0 100,00% 0	1 0 0 1 0 0	3 0 0 3 0 0 7	10 0 0 10 0 0 14	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02	0 100,00% 0 100,00% 0 92,00% 0	1 0 0 1 0 0 1 7,67% 7,67E-02	3 0 0 3 0 0 0 7 0,33% 2,30E-02	10 0 0 10 0 0 14 0 0	30 0 0 30 0 0 30 0 0	100 0 0 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
release Fatalities pass Distribution-type Average Fatalities em Distribution-type Average Distribution-type Distribution-type Average	sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02 posts	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05	10 0 0 10 0 0 14 0 0 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type Constribution-type	sengers Poisson 0 Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0	10 0 0 10 0 0 14 0 0 0 1,00E+06 0	30 0 0 30 0 0 30 0 0 1,00E+07 100,00%	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0
release Fatalities pass Distribution-type Average Fatalities em Distribution-type Average Distribution-type Distribution-type Average	sengers Poisson 0 ployees Poisson 0 poisson 8,33E-02 posts	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05	10 0 0 10 0 0 14 0 0 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Constribution-type Average	sengers Poisson 0 ployees Poisson 0 Poisson 8,33E-02 posts Poisson 5,00E+06	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 0 0 0 1 7,67% 7,67E-02 1,00E+04 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0	30 0 0 30 0 0 30 30 0 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0	300 0 0 300 0 0 365 0 0 0 0 1,00E+09 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average CDistribution-type Average Distribution-type Average Distribution-type	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0	10 0 0 10 0 0 14 0 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Comparison Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0	1 0 0 1 0 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61%	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0	300 0 0 300 0 0 0 365 0 0 1,00E+09 0 0 0 365 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average CDistribution-type Average Distribution-type Average Distribution-type	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0	10 0 0 10 0 0 14 0 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 30 0 0 30 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365
release Fatalities pass Distribution-type Average	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 0 0 0 0	1 0 0 1 0 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 0 7 6,61% 4,63E-01	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 2,18E-07	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Component of the type Average Component of the type Component of t	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 65,92% 0	1 0 0 1 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 0 0 0 7 6,61% 4,63E-01	10 0 0 10 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 14 0,00% 2,18E-07	30 0 0 30 0 0 0 30 0 0 30 1,00E+07 100,00% 1,00E+07 30 0 0 0 30	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0 0 365
release Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Character Distribution-type Character Distribution-type Character Distribution-type Character Charac	sengers Poisson 0 Poisson 0 Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 100,00% 0 100,00% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 0 0 0 0	1 0 0 1 0 0 0 1 7,67% 7,67E-02 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	3 0 0 3 0 0 0 0 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 0 7 6,61% 4,63E-01	10 0 0 10 0 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 2,18E-07	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0	100 0 0 100 0 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0 0	300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

4.5.5 - uain uerain	ment involvir	ng dangero	ous goods	vehicle ca	rrying am	nonia res	ulting in m	nedium
release								
Fatalities pass	0	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	oloyees	0	1	3	10	30	100	300
Distribution-type	Poisson	77,88%	19,47%	2,64%	0,01%	0	0	0
Average	0,25	0	1,95E-01	7,91E-02	1,33E-03	0	0	0
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	92,00%	7,67%	0,33%	0	0	0	0
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair co	Repair costs		1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
Fatalities r	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
4.3.4 - train derailr	nent involvir							
release		ig dangerd	ous goods '	vehicle ca	rrying amı	nonia res	ulting in la	arge
release Fatalities pas		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	bus goods 1	vehicle ca	rrying amı 10	nonia res 30	ulting in la	arge 300
			-				-	-
Fatalities pas	sengers	0	1	3	10	30	100	300
Fatalities pase Distribution-type	sengers Poisson	0 100,00%	- 1 0	3 0	10 0	30 0	100 0	300 0
Fatalities pase Distribution-type	sengers Poisson 0	0 100,00%	- 1 0	3 0	10 0	30 0	100 0	300 0
Fatalities pass Distribution-type Average	sengers Poisson 0	0 100,00% 0	1 0 0	3 0 0	10 0	30 0 0	100 0 0	300 0 0
Fatalities pase Distribution-type Average Fatalities emp	sengers Poisson 0 ployees	0 100,00% 0	1 0 0	3 0 0 3	10 0 0 10	30 0 0 30	100 0 0 100	300 0 0 300
Fatalities pass Distribution-type Average Fatalities emp Distribution-type	sengers Poisson 0 ployees Poisson	0 100,00% 0 68,73%	1 0 0 1 25,77%	3 0 0 3 5,44%	10 0 0 10 0,06%	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type	sengers Poisson 0 ployees Poisson 0,375	0 100,00% 0 68,73%	1 0 0 1 25,77%	3 0 0 3 5,44%	10 0 0 10 0,06%	30 0 0 30 0	100 0 0 100 0	300 0 0 300 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average	sengers Poisson 0 ployees Poisson 0,375	0 100,00% 0 68,73% 0	1 0 0 1 25,77% 2,58E-01	3 0 0 3 5,44% 1,63E-01	10 0 0 10 0,06% 6,12E-03	30 0 0 30 0 0	100 0 0 100 0 0	300 0 0 300 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Disruptio	sengers Poisson 0 ployees Poisson 0,375	0 100,00% 0 68,73% 0	1 0 0 1 25,77% 2,58E-01	3 0 0 3 5,44% 1,63E-01 7	10 0 0 10 0,06% 6,12E-03	30 0 0 30 0 0 30	100 0 0 100 0 0 180	300 0 0 300 0 0 365
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	sengers Poisson 0 ployees Poisson 0,375 on Poisson	0 100,00% 0 68,73% 0 92,00% 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02	10 0 0 10 0,06% 6,12E-03 14 0 0	30 0 0 30 0 0 30 0 0	100 0 0 100 0 0 180 0 0	300 0 0 300 0 0 365 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Distribution-type	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02	0 100,00% 0 68,73% 0 92,00%	1 0 0 1 25,77% 2,58E-01 1 7,67%	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02	10 0 0 10 0,06% 6,12E-03 14 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0	300 0 0 300 0 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02	0 100,00% 0 68,73% 0 92,00% 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0	10 0 0 10 0,06% 6,12E-03 14 0 0	30 0 0 30 0 0 30 0 30 0 0 1,00E+07 100,00%	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 365 0 0
Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Average	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02 osts	0 100,00% 0 68,73% 0 92,00% 0 1,00E+03	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05	10 0 0 10 0,06% 6,12E-03 14 0 0 0	30 0 0 30 0 0 30 0 0 0 1,00E+07	100 0 0 100 0 0 180 0 0 0 1,00E+08	300 0 0 300 0 0 365 0 0 0 1,00E+09
Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average	sengers Poisson 0 ployees Poisson 0,375 on Poisson 8,33E-02 osts Poisson 5,00E+06	0 100,00% 0 68,73% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0	10 0 0 10 0,06% 6,12E-03 14 0 0 0 1,00E+06 0 0	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00%	100 0 0 100 0 0 180 0 0 1,00E+08 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0
Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 sts Poisson 5,00E+06 road	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 25,77% 2,58E-01 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	10 0 0 10 0,06% 6,12E-03 14 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
Fatalities pass Distribution-type Average Fatalities emplication-type Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Average Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0,375 on Poisson 8,33E-02 osts Poisson 5,00E+06 road Poisson	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	10 0 0 0 0 0 0 6,12E-03 14 0 0 0 1,00E+06 0 0 0 14 0,00%	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0	300 0 0 300 0 0 0 365 0 0 0 0 1,00E+09 0 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type Average	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 sts Poisson 5,00E+06 road	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0	1 0 0 1 25,77% 2,58E-01 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0	10 0 0 10 0,06% 6,12E-03 14 0 0 1,00E+06 0 0 0	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365
Fatalities pass Distribution-type Average Fatalities emplication-type Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 0 0 0 0 0 6,12E-03 14 0 0 0 1,00E+06 0 0 0 14 0,00%	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emplication Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average Distribution-type Distribution-type Distribution-type Distribution-type Distribution-type	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 65,92% 0	1 0 0 1 25,77% 2,58E-01 1 7,67% 7,67E-02 1,00E+04 0 0 0 1 27,47% 2,75E-01	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 0 0 0 0 0 6,12E-03 14 0 0 0 1,00E+06 0 0 0 14 0,00%	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 180 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0
Fatalities pass Distribution-type Average Fatalities emp Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Distribution-type Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	sengers Poisson 0 Poisson 0,375 0 Poisson 8,33E-02 0 osts Poisson 5,00E+06 road Poisson 4,17E-01	0 100,00% 0 68,73% 0 92,00% 0 92,00% 0 1,00E+03 0 0 0 0 0 0 0 0	1 0 0 1 25,77% 2,58E-01 7,67% 7,67E-02 1,00E+04 0 0 0 1 27,47% 2,75E-01	3 0 0 3 5,44% 1,63E-01 7 0,33% 2,30E-02 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	10 0 0 0 0 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 2,18E-07	30 0 0 30 0 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0	100 0 0 100 0 0 180 0 0 1,00E+08 0 0 0 1,00E+08 0 0 0	300 0 0 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0 0

4.4.1 - train derail								
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disrupti	on	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
		-						
Fatalities		0	1	3	10	30	100	300
i atanties	road							
	road Poisson	100,00%	0	0	0	0	0	0
Distribution-type Average		-	0	0	0 0	0 0	0	0
Distribution-type	Poisson	100,00%				-	-	
Distribution-type	Poisson 0	100,00% 0	0	0	0	0	0	0
Distribution-type Average	Poisson 0 ment involvin	100,00% 0	0	0	0	0	0	0
Distribution-type Average 4.4.2 - train derail	Poisson 0 ment involvin	100,00% 0	0 Dus goods	0 vehicle ca	0 rrying acid	0 Is resulting	0 g in small i	0 release
Distribution-type Average 4.4.2 - train derail Fatalities pas	Poisson 0 ment involvin sengers	100,00% 0 ng dangero 0	0 Dus goods 1	0 vehicle ca 3	0 rrying acid	0 Is resulting 30	0 g in small 1 100	0 release 300
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type	Poisson 0 ment involvin sengers Poisson	100,00% 0 ng dangero 0 100,00%	0 ous goods 1 0	0 vehicle ca 3 0	0 rrying acic 10 0	0 Is resulting 30 0	0 g in small 1 100 0	0 release 300 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type	Poisson 0 ment involvin sengers Poisson 0	100,00% 0 ng dangero 0 100,00%	0 ous goods 1 0	0 vehicle ca 3 0	0 rrying acic 10 0	0 Is resulting 30 0	0 g in small 1 100 0	0 release 300 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0	100,00% 0 ng dangerc 0 100,00% 0	0 Dus goods 1 0 0	0 vehicle ca 3 0 0	0 rrying acid 10 0 0	0 Is resulting 30 0 0	0 g in small 1 100 0 0	0 release 300 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Fatalities em	Poisson 0 ment involvin sengers Poisson 0 ployees	100,00% 0 ng dangero 0 100,00% 0	0 ous goods 1 0 0 1	0 vehicle ca 3 0 0 3	0 rrying acic 10 0 0	0 Is resulting 30 0 0 30	0 g in small 1 100 0 0	0 release 300 0 0 300
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Fatalities em Distribution-type	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson	100,00% 0 100,00% 0 100,00% 0 100,00%	0 ous goods 1 0 0 1 0 0	0 vehicle ca 3 0 0 3 0	0 rrying acic 10 0 0 10 0	0 Is resulting 30 0 0 30 0	0 g in small 1 100 0 0 100 0	0 release 300 0 0 300 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Fatalities em Distribution-type	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0	100,00% 0 100,00% 0 100,00% 0 100,00%	0 ous goods 1 0 0 1 0 0	0 vehicle ca 3 0 0 3 0	0 rrying acic 10 0 0 10 0	0 Is resulting 30 0 0 30 0	0 g in small 1 100 0 0 100 0	0 release 300 0 0 300 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0	100,00% 0 ng dangero 0 100,00% 0 100,00% 0	0 ous goods 1 0 0 1 0 0 0	0 vehicle ca 3 0 0 3 0 0	0 rrying acic 10 0 0 10 0	0 Is resulting 0 0 0 30 0 0	0 g in small 1 0 0 0 100 0 0	0 release 300 0 0 300 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0	100,00% 0 100,00% 100,00% 0 100,00% 0	0 ous goods 1 0 0 1 0 0 1 1 1	0 vehicle ca 3 0 0 3 0 0 7	0 rrying acid 0 0 10 0 0 14	0 Is resulting 30 0 0 30 0 30	0 g in small i 100 0 0 100 0 0	0 release 300 0 0 300 0 0 365
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 on Poisson	100,00% 0 100,00% 100,00% 0 100,00% 0 100,00%	0 pus goods 1 0 0 1 0 0 1 0 0 1 0	0 vehicle ca 3 0 0 3 0 0 7 0	0 rrying acid 0 0 10 0 10 0 14 0	0 Is resulting 0 0 0 30 0 30 0	0 g in small 1 0 0 0 100 0 0 180 0	0 release 300 0 0 300 0 0 365 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Distribution-type	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 on Poisson 0	100,00% 0 100,00% 100,00% 0 100,00% 0 100,00%	0 pus goods 1 0 0 1 0 0 1 0 0 1 0	0 vehicle ca 3 0 0 3 0 0 7 0	0 rrying acic 10 0 0 10 0 14 0 0 0	0 Is resulting 0 0 0 30 0 30 0	0 g in small 1 0 0 0 100 0 0 180 0	0 release 300 0 0 300 0 0 365 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 on Poisson 0	100,00% 0 100,00% 100,00% 0 100,00% 0 100,00% 0	0 ous goods 1 0 0 1 0 0 1 0 0 0	0 vehicle ca 3 0 0 0 3 0 0 0 7 0 0 0	0 rrying acic 10 0 0 10 0 14 0 0 0	0 Is resulting 30 0 0 30 0 0 30 0 0 0	0 g in small i 100 0 0 100 0 0 180 0 0	0 release 300 0 0 300 0 0 365 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 poisson 0 poisson 0 poisson 0	100,00% 0 100,00% 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0	0 ous goods 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 vehicle ca 3 0 0 0 3 0 0 7 0 0 0 1,00E+05	0 rrying acid 10 0 0 10 0 14 0 0 1,00E+06	0 Is resulting 30 0 0 30 0 30 0 30 0 0 1,00E+07	0 g in small 1 0 0 0 100 0 0 180 0 0 180 0 0	0 release 300 0 0 300 0 0 365 0 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 poisson 0 poisson 0 poisson 0 poisson 0	100,00% 0 100,00% 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0	0 ous goods 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 vehicle ca 3 0 0 0 3 0 0 7 0 0 0 1,00E+05 0	0 rrying acic 10 0 0 10 0 10 0 10 0 14 0 0 1,00E+06 0	0 Is resulting 30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00%	0 g in small 1 100 0 0 100 0 180 0 0 1,00E+08 0	0 release 300 0 0 300 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 poisson 0 poisson 0 poisson 5,00E+06	100,00% 0 100,00% 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0	0 ous goods 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 vehicle ca 3 0 0 0 3 0 0 7 0 0 0 1,00E+05 0	0 rrying acic 10 0 0 10 0 10 0 10 0 14 0 0 1,00E+06 0	0 Is resulting 30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00%	0 g in small 1 100 0 0 100 0 180 0 0 1,00E+08 0	0 release 300 0 0 300 0 0 365 0 0 0 1,00E+09 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 poisson 0 poisson 0 poisson 5,00E+06	100,00% 0 100,00% 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0	0 ous goods 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 vehicle ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0	0 rrying acid 10 0 0 10 0 10 0 14 0 0 1,00E+06 0 0	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	0 g in small 1 100 0 0 100 0 180 0 0 1,00E+08 0 0 0	0 release 300 0 0 300 0 0 365 0 0 0 0 1,00E+09 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 poisson 0 poisson 0 poisson 5,00E+06 road	100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ous goods 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 vehicle ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0	0 rrying acic 10 0 0 10 0 10 0 10 0 10 0 14 0 0 0 1,00E+06 0 0 14	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 1,00E+07 30	0 g in small 1 100 0 0 100 0 180 0 0 1,00E+08 0 0 180	0 release 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 Poisson 0 Poisson 0 con Poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con poisson 0 con con con con con con con con	100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0	0 ous goods 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 0 0 1 27,47%	0 vehicle ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%	0 rrying acic 10 0 0 10 0 10 0 10 0 10 0 10 0 0 14 0 0 0 1,00E+06 0 0 14 0 0 0 1,00E+06 0 0 14 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Is resulting 30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	0 g in small 1 100 0 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	0 release 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 Poisson 0 posts Poisson 5,00E+06 road Poisson 4,17E-01	100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0	0 ous goods 1 0 0 1 0 0 1 0 0 1,00E+04 0 0 0 1,00E+04 0 0 1 27,47%	0 vehicle ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 7 6,61%	0 rrying acic 10 0 0 10 0 10 0 10 0 10 0 10 0 0 14 0 0 0 1,00E+06 0 0 14 0 0 0 1,00E+06 0 0 14 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Is resulting 30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	0 g in small 1 100 0 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	0 release 300 0 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 4.4.2 - train derail Fatalities pas Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 Poisson 0 posts Poisson 5,00E+06 road Poisson 4,17E-01	100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ous goods 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 27,47% 2,75E-01	0 vehicle ca 3 0 0 0 3 0 0 0 7 0 0 0 1,00E+05 0 0 0 0 7 6,61% 4,63E-01	0 rrying acic 10 0 0 10 0 10 0 10 0 10 0 10 0 0 14 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 1,00E+06 0 0 0 0 0 0 0 0 0 0 0 0 0	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 g in small 1 100 0 0 100 0 100 0 180 0 0 1,00E+08 0 0 180 0 0 0 180 0 0 0 180 0 0 0 0 0 0 0 0 0 0 0 0 0	0 release 300 0 0 0 0 0 0 365 0 0 0 0 0 365 0 0 0 0 0

4.4.3 - train derailr release								_
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities emp	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Diomunti		0	1	7	44	20	180	365
Disruptio		92,00%	7,67%	0,33%	14 0	30 0	0	0
Distribution-type	Poisson				-		-	-
Average	8,33E-02	0	7,67E-02	2,30E-02	0	0	0	0
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
.				-			400	0.05
Disruption		0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
			1	3	10	30	100	300
Fatalities r	road	0						
		-	0	0	0	0	0	0
Distribution-type	road Poisson 0	0 100,00% 0	0	0	0	-	-	0
	Poisson	100,00%				0	0	
Distribution-type	Poisson 0	100,00% 0	0 0	0	0	0	0	0
Distribution-type Average 4.4.4 - train derailn Fatalities pass	Poisson 0 ment involvir sengers	100,00% 0 ng dangero 0	0 0 ous goods	0 0 vehicle ca 3	0	0	0	0
Distribution-type Average 4.4.4 - train derail	Poisson 0 ment involvin	100,00% 0 ng dangero 0 100,00%	0 0 0 0 0 0 0	0 0 vehicle ca 3 0	0 rrying acid	0 Is resulting 30 0	0 g in large r 100 0	0 release
Distribution-type Average 4.4.4 - train derailn Fatalities pass	Poisson 0 ment involvir sengers	100,00% 0 ng dangero 0	0 0 ous goods	0 0 vehicle ca 3	0 rrying acic 10	0 Is resulting 30	0 g in large r 100	0 release 300
Distribution-type Average 4.4.4 - train derails Fatalities pass Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0	100,00% 0 ng dangero 0 100,00% 0	0 0 0 0 0 0 0	0 0 vehicle ca 3 0 0	0 rrying acic 10 0 0	0 Is resulting 30 0 0	0 g in large r 100 0 0	0 release 300 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 ment involvin sengers Poisson 0 ployees	100,00% 0 ng dangero 0 100,00% 0	0 0 Dus goods 1 0 0	0 0 vehicle ca 3 0 0 0	0 rrying acic 10 0 0	0 Is resulting 30 0 0 30	0 g in large r 100 0 0	0 release 300 0 0 300
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson	100,00% 0 ng dangerc 0 100,00% 0 100,00%	0 0 0 0 0 0 1 0 0 1 0	0 0 vehicle ca 3 0 0 3 0	0 rrying acic 10 0 0 10 0	0 Is resulting 30 0 0 30 0	0 g in large r 100 0 0 100 0	0 release 300 0 0 300 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Fatalities emp	Poisson 0 ment involvin sengers Poisson 0 ployees	100,00% 0 ng dangero 0 100,00% 0	0 0 Dus goods 1 0 0	0 0 vehicle ca 3 0 0 0	0 rrying acic 10 0 0	0 Is resulting 30 0 0 30	0 g in large r 100 0 0	0 release 300 0 0 300
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Fatalities emp Distribution-type	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0	100,00% 0 ng dangerc 0 100,00% 0 100,00%	0 0 0 0 0 0 1 0 0 1 0	0 0 vehicle ca 3 0 0 3 0	0 rrying acic 10 0 0 10 0	0 Is resulting 30 0 0 30 0	0 g in large r 100 0 0 100 0	0 release 300 0 0 300 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Distribution-type Average Distribution-type	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0	100,00% 0 ng dangero 0 100,00% 0 100,00% 0	0 0 0 0 0 0 1 0 0 0	0 0 vehicle ca 3 0 0 0 3 0 0	0 rrying acic 10 0 0 10 0 0 0	0 Is resulting 0 0 0 30 0 0	0 g in large r 100 0 0 100 0 0	0 release 300 0 0 300 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0	100,00% 0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0	0 0 0 0 0 0 1 0 0 0 0	0 0 vehicle ca 3 0 0 0 3 0 0 7	0 rrying acic 10 0 0 10 0 0 14	0 Is resulting 30 0 0 30 0 30	0 g in large r 100 0 0 100 0 0	0 release 300 0 0 300 0 0 365
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvir sengers Poisson 0 ployees Poisson 0 poisson 1,00E+00	100,00% 0 ng dangerc 0 100,00% 0 100,00% 0 100,00% 0 0 36,79% 0	0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00	0 rrying acic 10 0 0 10 0 10 0 10 0 14 0,00% 1,43E-04	0 Is resulting 30 0 0 30 0 30 0 0 0	0 g in large r 100 0 0 100 0 0 180 0 0	0 release 300 0 0 0 0 0 0 365 0 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Construction-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 poisson 0 Poisson 1,00E+00	100,00% 0 0 0 100,00% 0 0 100,00% 0 0 0 36,79%	0 0 0 0 0 0 1 0 0 0 1 36,79%	0 0 vehicle ca 3 0 0 0 3 0 0 7 26,42%	0 rrying acic 10 0 0 10 0 10 0 10 0 14 0,00% 1,43E-04	0 Is resulting 30 0 0 30 0 30 0 30 0 0 1,00E+07	0 g in large r 100 0 0 100 0 180 0	0 release 300 0 0 300 0 0 365 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 Poisson 1,00E+00	100,00% 0 o o 100,00% 0 0 100,00% 0 0 36,79% 0 1,00E+03 0	0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0	0 rrying acic 10 0 0 10 0 10 0 10 0 14 0,00% 1,43E-04	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 100,00%	0 g in large r 100 0 0 100 0 180 0 0 1,00E+08 0	0 release 300 0 0 0 0 0 0 365 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Construction-type Average	Poisson 0 ment involvin sengers Poisson 0 ployees Poisson 0 poisson 1,00E+00	100,00% 0 o o 100,00% 0 100,00% 0 100,00% 0 0 36,79% 0 1,00E+03	0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05	0 rrying acic 10 0 0 10 0 10 0 10 0 10 0 14 0,00% 1,43E-04 1,00E+06	0 Is resulting 30 0 0 30 0 30 0 30 0 0 1,00E+07	0 g in large r 100 0 0 100 0 0 180 0 0 180 0 0	0 release 300 0 0 300 0 0 365 0 0 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 1,00E+00 osts Poisson 5,00E+06	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0 0	0 rrying acic 10 0 0 10 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 0 0 0	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	0 g in large i 100 0 0 100 0 180 0 0 1,00E+08 0 0 0	0 release 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 1,00E+00 osts Poisson 5,00E+06	100,00% 0 o o 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0 0 0	0 rrying acic 10 0 0 10 0 10 0 0 14 1,43E-04 1,00E+06 0 0 0 14	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30	0 g in large r 100 0 0 100 0 180 0 0 1,00E+08 0 0 180	0 release 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvir sengers Poisson 0 Poisson 0 Poisson 1,00E+00 5,00E+06 Foisson 5,00E+06	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 27,47%	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0 0 0 7 6,61%	0 rrying acic 10 0 0 10 0 10 0 10 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 0 0 0 14 0,00%	0 Is resulting 30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	0 g in large r 100 0 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	0 release 300 0 0 0 0 0 0 0 0 1,00E+09 0 0 0 0 365 0 0 0 0 0 0 0 0 0 0 0 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 1,00E+00 osts Poisson 5,00E+06	100,00% 0 o o 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0 0 0	0 rrying acic 10 0 0 10 0 10 0 0 14 1,43E-04 1,00E+06 0 0 0 14	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30	0 g in large r 100 0 0 100 0 180 0 0 1,00E+08 0 0 180	0 release 300 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 1,00E+00 osts Poisson 5,00E+06 road Poisson 4,17E-01	100,00% 0 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 1 27,47%	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0 0 0 7 6,61%	0 rrying acic 10 0 0 10 0 10 0 10 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 0 0 0 14 0,00%	0 Is resulting 30 0 0 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07	0 g in large r 100 0 0 100 0 180 0 0 1,00E+08 0 0 180 0 0	0 release 300 0 0 0 300 0 0 365 0 0 0 1,00E+09 0 0 0 365 0 0
Distribution-type Average 4.4.4 - train derail Fatalities pass Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average Distribution-type Average	Poisson 0 ment involvir sengers Poisson 0 ployees Poisson 0 Poisson 1,00E+00 osts Poisson 5,00E+06 road Poisson 4,17E-01	100,00% 0 0 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 100,00% 0 0 100,00% 0 0 0 100,00% 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 1 0 0 0 1 36,79% 3,68E-01 1,00E+04 0 0 0 0 1 27,47% 2,75E-01	0 0 vehicle ca 3 0 0 0 3 0 0 0 7 26,42% 1,85E+00 1,00E+05 0 0 0 7 6,61% 4,63E-01	0 rrying acic 10 0 0 10 0 10 0 0 10 0 0 10 0 0 14 0,00% 1,43E-04 1,00E+06 0 0 0 14 0,00% 2,18E-07	0 Is resulting 30 0 0 30 0 0 30 0 0 1,00E+07 100,00% 1,00E+07 30 0 0 0 0 0 0 0 0 0 0 0 0 0	0 g in large r 100 0 0 100 0 100 0 100 0 180 0 0 1,00E+08 0 0 0 180 0 0 0 180 0 0 0 0 0 100 0 0 0 0 0 0 0 0 0 0 0 0	0 release 300 0 0 0 0 0 0 0 0 0 0 1,00E+09 0 0 0 0 0 0 0 0 0 0 0 0 0

4.5.1 - train derail release of heptane		ng dangero	ous goods '	vehicle ca	rrying flam	nmable liq	uids result	ing in no
Fatalities pas		0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
0								
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disrupti	on	0	1	7	14	30	180	365
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Repair c		1,00E+03	1,00E+04		1,00E+06	-	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
Diamon 4	rood	0	1	7	4.4	20	400	0.05
Disruption		-			14	30	180	365
Distribution-type	Poisson	71,65%	23,88%	4,46%	0,00%	0	0	0
Average	3,33E-01	0	2,39E-01	3,12E-01	3,94E-08	0	0	0
Fatalities	road	0	1	3	10	30	100	300
		100,00%	0	3 0	0	<u> </u>	0	0
Distribution-type	Poisson	0		0	0	0	0	-
Average	0	0	0	0	0	0	0	0
4.5.2 - train derail	ment involvir	ng dangerg	us aoods y	vehicle ca	rrving flam	nmable lig	uids resulf	ina in
small release no		.gg						
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disrupti		0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
D	4	4 005.00	4 005 0 4	4 005 05	4 005-00	4 005-05	4 005 00	4 005.00
Repair c		1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	U	0	0	0	1,00E+07	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	30	0	365 0
Average	4,17E-01	03,92 %	2,75E-01	4,63E-01	2,18E-07	0	0	0
Average	, <i>। ו</i> ∟ -∨ ו	U	2,100-01	+,00⊏-01	2,100-01	U		0
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	v		Ū	v	v	0		0

4.5.3 - train derail			ous goods	vehicle ca	rrying flam	nmable liq	uids result	ing in
small release ignit				2	40	20	400	200
Fatalities pas	-	0 100,00%	1 0	3 0	10 0	30 0	100 0	300 0
Distribution-type	Poisson 0	0	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	oloyees	0	1	3	10	30	100	300
Distribution-type	Poisson	38,67%	36,74%	22,98%	1,61%	0,00%	0	0
Average	0,95	0	3,67E-01	6,89E-01	1,61E-01	1,79E-07	0	0
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	36,79%	36,79%	26,42%	0,00%	0	0	0
Average	1,00E+00	0	3,68E-01	1,85E+00	1,43E-04	0	0	0
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	1,00E+03	0	0	0	0	0	0
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
Fatalities I	road	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
4.5.5 - train derail			ous goods '	vehicle ca	rrying flam	nmable liq	uids result	ing in
medium release le Fatalities pas			1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	Ū	Ŭ	Ŭ	Ŭ	Ū	Ŭ	Ŭ	0
Fatalities em	olovees	0	1	3	10	30	100	300
Distribution-type		100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Average	•	Ŭ	Ū	Ū	ů	Ŭ	Ū	Ū
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Repair co	o sts Poisson	1,00E+03	1,00E+04 0	1,00E+05 0	1,00E+06 0	1,00E+07 100,00%	1,00E+08 0	1,00E+09 0
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Distribution-type	Poisson 5,00E+06	0	0	0	0	100,00%	0	0
Distribution-type Average	Poisson 5,00E+06	0	0	0	0	100,00% 1,00E+07	0	0
Distribution-type Average Disruption	Poisson 5,00E+06 road	0 0 0	0 0 1	0 0 7	0 0 14	100,00% 1,00E+07 30	0 0 180	0 0 365
Distribution-type Average Disruption Distribution-type	Poisson 5,00E+06 road Poisson	0 0 0 65,92%	0 0 1 27,47%	0 0 7 6,61%	0 0 14 0,00%	100,00% 1,00E+07 30 0	0 0 180 0	0 0 365 0
Distribution-type Average Disruption Distribution-type	Poisson 5,00E+06 road Poisson 4,17E-01	0 0 0 65,92%	0 0 1 27,47%	0 0 7 6,61%	0 0 14 0,00%	100,00% 1,00E+07 30 0	0 0 180 0	0 0 365 0
Distribution-type Average Disruption Distribution-type Average	Poisson 5,00E+06 road Poisson 4,17E-01	0 0 65,92% 0	0 0 1 27,47% 2,75E-01	0 0 7 6,61% 4,63E-01	0 0 14 0,00% 2,18E-07	100,00% 1,00E+07 30 0 0	0 0 180 0 0	0 0 365 0 0

4.5.6 - train derail	ment involviı	ng dangero	ous goods	vehicle ca	rrying flan	nmable liq	uids result	ting in
medium release le			leve					
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	38,67%	36,74%	22,98%	1,61%	0,00%	0	0
Average	0,95	0	3,67E-01	6,89E-01	1,61E-01	1,79E-07	0	0
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
0								
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	1,00E+03	0	0	0	0	0	0
			I.		I.	l .	1	
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	0	0	0	0	0	0	51,39%
Average	3,65E+02	0	0	0	0	0	0	1,88E+02
					I		l	,
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	0	0	0	0	0	0	100,00%
Average	2,15E+02	0	0	0	0	0	0	3,00E+02
4.5.8 - train derail		-	-	-	-	-	-	
large release lead			Ũ		, ,			0
Fatalities pas	sengers	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Fatalities em	ployees	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
Disruptio	on	0	1	7	14	30	180	365
Distribution-type	Poisson	4,98%	14,94%	78,89%	1,19%	0,00%	0	0
Average	3,00E+00	0	1,49E-01	5,52E+00	1,67E-01	2,01E-05	0	0
Repair co	osts	1,00E+03	1,00E+04	1,00E+05	1,00E+06	1,00E+07	1,00E+08	1,00E+09
Distribution-type	Poisson	0	0	0	0	100,00%	0	0
Average	5,00E+06	0	0	0	0	1,00E+07	0	0
		•	•				•	
Disruption	road	0	1	7	14	30	180	365
Distribution-type	Poisson	65,92%	27,47%	6,61%	0,00%	0	0	0
Average	4,17E-01	0	2,75E-01	4,63E-01	2,18E-07	0	0	0
		•					1	
Fatalities	road	0	1	3	10	30	100	300
Distribution-type	Poisson	100,00%	0	0	0	0	0	0
Average	0	0	0	0	0	0	0	0
	•	<u> </u>	<u> </u>			Ľ Ť	~	L ~

12.12 Fire rail

Fatalities passengers

Scenario	0	1	3	10	30	100	300	Moon
5.1.1	1,00E+00	0	3 0	0	0	0	0	Mean
	,	0	0	0	0	÷	0	0
5.1.2	1,00E+00	-				0		0
5.1.3	1,00E+00	0	0	0	0	0	0	0
5.1.4	1,00E+00	0	0	0	0	0	0	0
5.1.5	1,00E+00	0	0	0	0	0	0	0
5.1.6	1,00E+00	0	0	0	0	0	0	0
5.1.7	1,00E+00	0	0	0	0	0	0	0
5.1.8	1,00E+00	0	0	0	0	0	0	0
5.1.9	9,63E-01	3,59E-02	6,91E-04	8,28E-08	0	0	0	3,80E-02
5.1.10	9,63E-01	3,59E-02	6,91E-04	8,28E-08	0	0	0	3,80E-02
5.1.11	9,63E-01	3,59E-02	6,91E-04	8,28E-08	0	0	0	3,80E-02
5.1.12	9,63E-01	3,59E-02	6,91E-04	8,28E-08	0	0	0	3,80E-02
5.2.1	1,00E+00	0	0	0	0	0	0	0
5.2.2	1,00E+00	0	0	0	0	0	0	0
5.2.3	1,00E+00	0	0	0	0	0	0	0
5.3.1	1,00E+00	0	0	0	0	0	0	0
5.3.2	1,00E+00	0	0	0	0	0	0	0
5.3.3	1,00E+00	1,00E-04	5,00E-09	0	0	0	0	1,00E-04
5.3.4	1,00E+00	1,00E-04	5,00E-09	0	0	0	0	1,00E-04
5.4.1	1,00E+00	0	0	0	0	0	0	0
5.4.2	1,00E+00	0	0	0	0	0	0	0
5.4.3	1,00E+00	0	0	0	0	0	0	0
5.5.1	1,00E+00	0	0	0	0	0	0	0
5.5.2	1,00E+00	0	0	0	0	0	0	0
5.5.3	9,98E-01	1,99E-03	2,00E-06	0	0	0	0	2,00E-03
5.5.4	9,98E-01	1,99E-03	2,00E-06	0	0	0	0	2,00E-03
5.6.1	1,00E+00	0	0	0	0	0	0	0
5.6.2	1,00E+00	0	0	0	0	0	0	0
5.6.3	1,00E+00	0	0	0	0	0	0	0

Fatalities employees

Scenario	0	1	3	10	30	100	300	Mean
5.1.1	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.2	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.3	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.4	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.5	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.6	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.7	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.8	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.1.9	0,99923	0,00076	0,00001	0,00000	0,00000	0,00000	0,00000	8,00E-04
5.1.10	0,99923	0,00076	0,00001	0,00000	0,00000	0,00000	0,00000	8,00E-04
5.1.11	0,99923	0,00076	0,00001	0,00000	0,00000	0,00000	0,00000	8,00E-04
5.1.12	0,99923	0,00076	0,00001	0,00000	0,00000	0,00000	0,00000	8,00E-04
5.2.1	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.2.2	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.2.3	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.3.1	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.3.2	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.3.3	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	2,11E-06
5.3.4	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	2,11E-06
5.4.1	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.4.2	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.4.3	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.5.1	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.5.2	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.5.3	0,99996	0,00004	0,00000	0,00000	0,00000	0,00000	0,00000	4,21E-05
5.5.4	0,99996	0,00004	0,00000	0,00000	0,00000	0,00000	0,00000	4,21E-05
5.6.1	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.6.2	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0
5.6.3	1,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0,00000	0

Repair cos	sts							
-								
					inside enclos	ed tunnel		
Fire size	1,00E+03	1,00E+04		1,00E+06	1,00E+07	1,00E+08	1,00E+09	Mean
1	8,61E-01	1,39E-01	1,26E-09	0	0	0	0	2.250
2,5	7,33E-04	9,54E-01		0	0	0	0	14.062
8	0	6,42E-04		4,90E-02	0	0	0	144.000
15	0	1,01E-06	5,49E-01	4,51E-01	2,92E-07	0	0	506.250
20	0	0	1,12E-01	8,88E-01	1,26E-04	0	0	900.001
30	0	0	1,22E-04	8,86E-01	1,14E-01	0	0	2.024.998
50	0	0	0	7,56E-05	8,61E-01	1,39E-01	1,26E-09	22.499.986
200	0	0	0	0	1,12E-01	8,88E-01	1,26E-04	90.000.053
350	0	0	0	0	4,01E-04	9,36E-01	6,39E-02	157.500.132
		1			- fire on land			Mean
Fire size	1,00E+03	1,00E+04		1,00E+06	1,00E+07	1,00E+08	1,00E+09	
1	1,00E+00	0	0	0	0	0	0	1.000
2,5	9,55E-01	4,51E-02	0	0	0	0	0	1.406
15	1,01E-06	5,49E-01	4,51E-01	2,92E-07	0	0	0	50.625
30	0	1,22E-04	8,86E-01	1,14E-01	0	0	0	202.500
200	0	0	0	1,12E-01	8,88E-01	1,26E-04	0	9.000.005
350	0	0	0	4,01E-04	9,36E-01	6,39E-02	0	15.750.013
Disruption		Disruptio	on [days] - f	ire inside er	nclosed tunne	el - Incident tu	be	
Fire size	0	1	7	14	30	180	365	Mean
1	8,38E-01	1,39E-01	2,30E-02	0	0	0	0	0,3
2,5	7,71E-01	1,67E-01	6,18E-02	1,24E-07	0	0	0	0,6
8	7,27E-01	1,68E-01	1,05E-01	2,21E-06	0	0	0	0,9
15	6,60E-01	1,46E-01	1,93E-01	7,41E-05	0	0	0	1,5
20	3,13E-01	1,02E-02	5,01E-01	1,75E-01	9,65E-04	0	0	6,0
30	2,78E-01	2,09E-04	1,29E-01	5,12E-01	8,09E-02	1,62E-07	0	10,5
50	7,48E-01	0	0	1,66E-08	2,93E-03	2,50E-01	0	45,0
200	2,50E-01	0	0	0	0	7,50E-01	7,02E-05	135,0
350	2,50E-01	0	0	0	0	7,50E-01	7,02E-05	135,0
		Disruption	[days] - fire	inside encl	osed tunnel ·	Non incident		
Fire size	0	1	7	14	30	180	365	Mean
1	9,63E-01	3,63E-02		0	0	0	0	0,04
2,5	9,09E-01		5,60E-03	0	0	0	0	0,13
8	8,55E-01	1,28E-01	1,74E-02	0	0	0	0	0,25
15	8,18E-01	1,50E-01	3,21E-02	4,06E-09	0	0	0	0,38
20	7,90E-01	1,62E-01	4,83E-02	3,33E-08	0	0	0	0,50
30	7,48E-01	1,69E-01	8,29E-02	6,12E-07	0	0	0	0,75
50	3,41E-01	1,82E-02		1,06E-01	2,48E-04	0	0	5,25
200	2,78E-01	2,09E-04	1,29E-01	5,12E-01	8,09E-02	1,62E-07	0	10,50
350	2,78E-01	2,09E-04	1,29E-01	5,12E-01	8,09E-02	1,62E-07	0	10,50
			Diamont	tion [dov-]	fire on land-	idoo		
Eiro oizo	0	4	Disrupt		fire on lands		26F	Mean
Fire size	0 20E 01	1 1 20E 01	-	14	30	180	365	Mean
1	8,38E-01	1,39E-01	2,30E-02		0	0	0	0,30
2,5	7,71E-01	1,67E-01	6,18E-02	1,24E-07	0	0	0	0,60
15	7,48E-01	1,69E-01	8,29E-02	6,12E-07	0	0	0	0,75

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