

Risk of Events From Threats with Controls

Overview

This page displays a similar grid as with the **Risk of Events From Threats** (without controls), but with added columns for results when Controls are in effect.

In Riskion, we refer to **threats, causes, hazards, and sources** interchangeably. While they may have slightly different nuances depending on the context in which they are used, they serve the same purpose -- they are all threats/sources of risk (for Risk Events) or sources of opportunity (for Opportunity Events).

In our sample model, we are using the terminology "Source(s)".

The Likelihoods, Impacts, and Risks of the events from Source "**Human Factor**" **without** and with **controls** are displayed below:

The screenshot shows the Riskion interface with a table titled "Likelihood, Impact, and Risk from Source (With Controls) for Intelligent Event London Underground Monitoring". The table compares risks "W.O. Controls" (Without Controls) and "With Controls" for eight different event types. The "Human Factor" source is selected in the left-hand menu.

I. ↑	Color	Event Name	All Participants					
			W.O. Controls			With Controls		
			Likelihood	Impact	Risk	Likelihood	Impact	Risk
1	●	Late Train Running	37.70%	15.87%	5.98%	4.61%	3.35%	0.15%
2	●	Degradation of Intelligent Monitoring System Physical Assets	6.30%	32.43%	2.04%	1.64%	2.98%	0.05%
3	●	Line Closure	35.40%	22.54%	7.98%	5.84%	5.20%	0.30%
4	●	Failed Integration with Future Monitoring System Network	7.56%	6.25%	0.47%	0.33%	6.25%	0.02%
5	●	Intelligent Event Monitoring Network Shut Down	21.97%	26.94%	5.92%	0.56%	2.54%	0.01%
6	●	Major Train Work Accident	25.85%	43.63%	11.28%	0.62%	6.55%	0.04%
7	●	Minor Train Work Accident	21.45%	6.77%	1.45%	0.74%	0.09%	0.00%
8	●	Major Train Public Accident	26.09%	49.70%	12.97%	0.62%	2.28%	0.01%
Total Risk:			48.10%			0.60%		

The combined results for "**All Participants**" are displayed by default. The W.O. (without) Controls and With Controls are displayed below the "All Participants" column heading.

I. ↑	Color	Event Name	All Participants					
			W.O. Controls			With Controls		
			Likelihood	Impact	Risk	Likelihood	Impact	Risk
1	●	Late Train Running	37.70%	15.87%	5.98%	4.61%	3.35%	0.15%
2	●	Degradation of Intelligent Monitoring System Physical Assets	6.30%	32.43%	2.04%	1.64%	2.98%	0.05%
3	●	Line Closure	35.40%	22.54%	7.98%	5.84%	5.20%	0.30%
4	●	Failed Integration with Future Monitoring System Network	7.56%	6.25%	0.47%	0.33%	6.25%	0.02%
5	●	Intelligent Event Monitoring Network Shut Down	21.97%	26.94%	5.92%	0.56%	2.54%	0.01%
6	●	Major Train Work Accident	25.85%	43.63%	11.28%	0.62%	6.55%	0.04%
7	●	Minor Train Work Accident	21.45%	6.77%	1.45%	0.74%	0.09%	0.00%
8	●	Major Train Public Accident	26.09%	49.70%	12.97%	0.62%	2.28%	0.01%
Total Risk:			48.10%			0.60%		

A Source is selected from the Sources Hierarchy at the left.

Source Name	Sources	Co...	Event Name	All Participants					
				W.O. Controls			With Controls		
				Likelihood	Impact	Risk	Likelihood	Impact	Risk
Human Factor	1	●	Late Train Running	37.70%	15.87%	5.98%	4.61%	3.35%	0.15%
Inadequately Trained Staff	2	●	Degradation of Intelligent Monitoring System Physical Assets	6.30%	32.43%	2.04%	1.64%	2.98%	0.05%
Disregarding or Not Following	3	●	Line Closure	35.40%	22.54%	7.98%	5.84%	5.20%	0.30%
Lack of Situational Awareness	4	●	Failed Integration with Future Monitoring System Network	7.56%	6.25%	0.47%	0.33%	6.25%	0.02%
Engineers Failure to Properly	5	●	Intelligent Event Monitoring Network Shut Down	21.97%	26.94%	5.92%	0.56%	2.54%	0.01%
Environmental	6	●	Major Train Work Accident	25.85%	43.63%	11.28%	0.62%	6.55%	0.04%
Flooding of Intelligent Event M	7	●	Minor Train Work Accident	21.45%	6.77%	1.45%	0.74%	0.09%	0.00%
Lightning Striking Signaling In	8	●	Major Train Public Accident	26.09%	49.70%	12.97%	0.62%	2.28%	0.01%
Infrastructure									
Minor Electrical Power Shorta									
Major Electrical Power Loss									
Mechanical Failure of Sensor:									
Mechanical Failure of Signals									
Mechanical Failure of Cables									

You can also select the top node "Sources" which will show the same results as with the Overall Risk Results page.

The Events on the grid may vary depending on the contributions of the events given the selected source.

Select Participants and Groups

By default, the results shown are for the "All Participants" group.

By selecting from the  "Participants and Groups" icon, you can display the results for other participants or groups

Participants and Groups

Search:

	Participant Name	Email Address	Has data?	Group name	Has data?	Select all users with data
<input type="checkbox"/>	Brian Quigley	quigleybf@gwu.edu	Yes	<input checked="" type="checkbox"/> All Participants	Yes	<input type="checkbox"/>
<input type="checkbox"/>	Chief Engineering Officer	ceo@gwu.edu	Yes	<input type="checkbox"/> C-Level Executives	Yes	<input type="checkbox"/>
<input type="checkbox"/>	Chief Executive Officer	che@gwu.edu	Yes	<input type="checkbox"/> Engineering	Yes	<input type="checkbox"/>
<input type="checkbox"/>	Chief Risk Officer	cro@gwu.edu	Yes			
<input type="checkbox"/>	Denis Risman	denisrisman@gwu.edu	Yes			
<input type="checkbox"/>	Devin Nagy	devinnagy@gwu.edu	Yes			
<input type="checkbox"/>	Grace	grace@eci.com				
<input type="checkbox"/>	IT Supervisor	its@gwu.edu	Yes			
<input type="checkbox"/>	James	james@eci.com				
<input type="checkbox"/>	John Doe	j.doe@eci.com				
<input type="checkbox"/>	Michael Mankowski	mmankowski@gwu.edu	Yes			

Select all | Deselect all

After selecting participants and groups to display, click OK.

Likelihood, Impact, and Risk from Source (With Controls) for Intelligent Event London Underground Monitoring														
Selected controls: 13		Cost Of Selected Controls: \$98,200 (unfunded: \$51,604,000)			Total Cost Of All Controls: \$51,702,200			How Selected: Optimized with budget of \$100,000						
Source Name		All Participants						Chief Engineering Officer						
Sources	Co...	Event Name	W.O. Controls			With Controls			W.O. Controls			With Controls		
			Likelihood	Impact	Risk	Likelihood	Impact	Risk	Likelihood	Impact	Risk	Likelihood	Impact	Risk
Human Factor	1	Late Train Running	37.70%	15.87%	5.96%	4.61%	3.35%	0.15%	4.58%	14.32%	0.66%	0.85%	3.85%	0.03%
Inadequately Trained Staff	2	Degradation of Intelligent Monitoring System Physical Assets	6.30%	32.43%	2.04%	1.64%	2.98%	0.05%	0.56%	33.27%	0.19%	0.15%	1.56%	0.00%
Disregarding or Not Following Proper Policies	3	Line Closure	35.40%	22.54%	7.98%	5.84%	5.20%	0.30%	18.28%	21.58%	3.94%	4.41%	4.91%	0.22%
Lack of Situational Awareness	4	Failed Integration with Future Monitoring System Network	7.56%	6.25%	0.47%	0.33%	6.25%	0.02%	4.29%	6.36%	0.27%	0.25%	6.36%	0.02%
Engineers Failure to Properly Install Equipment	5	Intelligent Event Monitoring Network Shut Down	21.97%	26.94%	5.92%	0.56%	2.54%	0.01%	1.12%	12.78%	0.14%	0.04%	2.69%	0.00%
Environmental	6	Major Train Work Accident	25.85%	43.63%	11.28%	0.62%	6.55%	0.04%	19.97%	31.05%	6.02%	0.35%	3.87%	0.01%
Flooding of Intelligent Event Monitoring Infrastructure	7	Minor Train Work Accident	21.45%	6.77%	1.45%	0.74%	0.09%	0.00%	2.22%	8.46%	0.19%	0.13%	0.12%	0.00%
Lightning Striking Signaling Infrastructure	8	Major Train Public Accident	26.09%	49.70%	12.97%	0.62%	2.28%	0.01%	19.97%	32.96%	8.37%	0.35%	2.48%	0.01%
Infrastructure		Minor Electrical Power Shortage												
		Major Electrical Power Loss												
		Mechanical Failure of Sensors												
		Mechanical Failure of Signals												
		Mechanical Failure of Cables												
		Terrorism												
		Conventional Attack on the Signalling Infrastructure												

Open Bow-tie diagram from Grid

Clicking the Event Name will open a modal that displays the bow-tie diagram for the selected event.

From the Bow-tie diagram, you analyze the **likelihoods** (left) and **impacts** (right) of the selected **event** (center) For **Threats with controls**. Click "[Bow-tie Diagram From Threats](#)" for more details.

Workgroup: Riskion Help
Risk model: Intelligent Event London Underground Monitoring

John Doe

MANAGE MODELS | IDENTIFY/STRUCTURE | LIKELIHOOD OF EVENTS | IMPACT OF EVENTS | **RISKS** | CONTROLS | CONTROLLED RISKS

Refresh | On-line | Snapshots

Loss Exceedance... | Filter Events | Simulated Results | Timestamp | Show Monetary Values | Preferences

Likelihoods, Impacts, and Risks from Source for Intelligent Event London Underground Monitoring

Source Name	Co...	Event Name	Description	All Participants		
				Likelihood	Impact	Risk
Human Factor	1	Late Train Running	Train is late when its time on the track between the two points is different than the time scheduled in the operational plan.	37.70%	15.87%	5.98%
Inadequately Trained Staff	2	Degradation of Intelligent Monitoring System Physical Assets	This is degradation of signals, cables, and sensors.	6.30%	32.43%	2.04%
Disregarding or Not Following Proper Policies	3	Line Closure	No train traffic allowed	35.40%	22.54%	7.98%
Lack of Situational Awareness	4	Failed Integration with Future Monitoring System Network		7.56%	6.25%	0.47%
Engineers Failure to Properly Install Equipment	5	Intelligent Event Monitoring Network Shut Down		21.97%	26.94%	5.92%
Environmental	6	Major Train Work Accident	Death occurs	25.85%	43.63%	11.28%
Flooding of Intelligent Event Monitoring Infrastructure	7	Minor Train Work Accident	Injury occurs	21.45%	6.77%	1.45%
Lightning Striking Signaling Infrastructure	8	Major Train Public Accident	Death occurs	26.09%	49.70%	12.97%

Shortcuts

Advanced mode is OFF

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Export Grid into excel or image format



You can export the grid into a .xlsx file by clicking



You can also export the results page into an image file (.png) by clicking

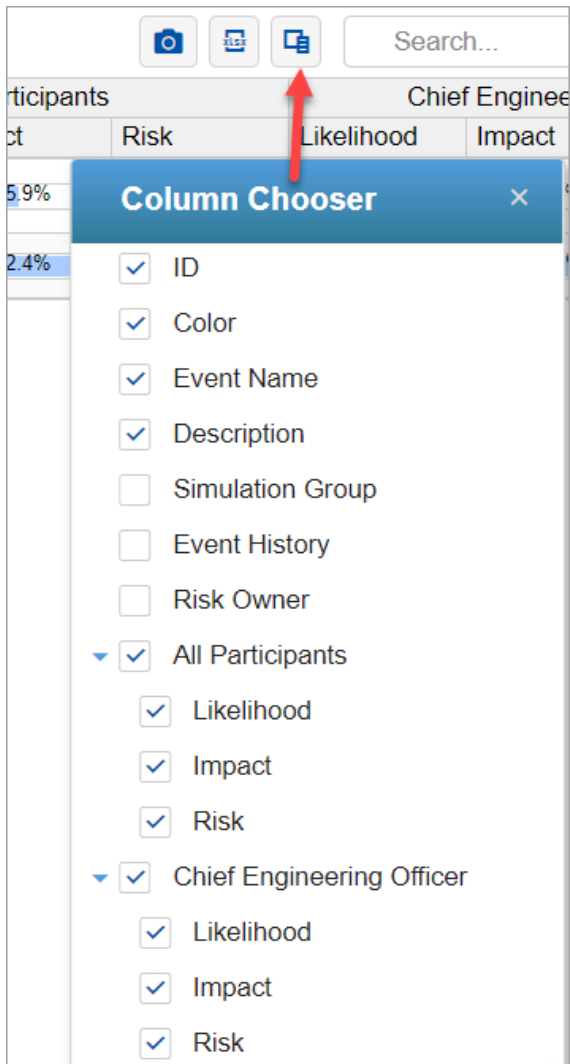


Show or Hide columns

You can show/hide columns both for:

- the main results grid at the right, and
- the hierarchy tree at the left

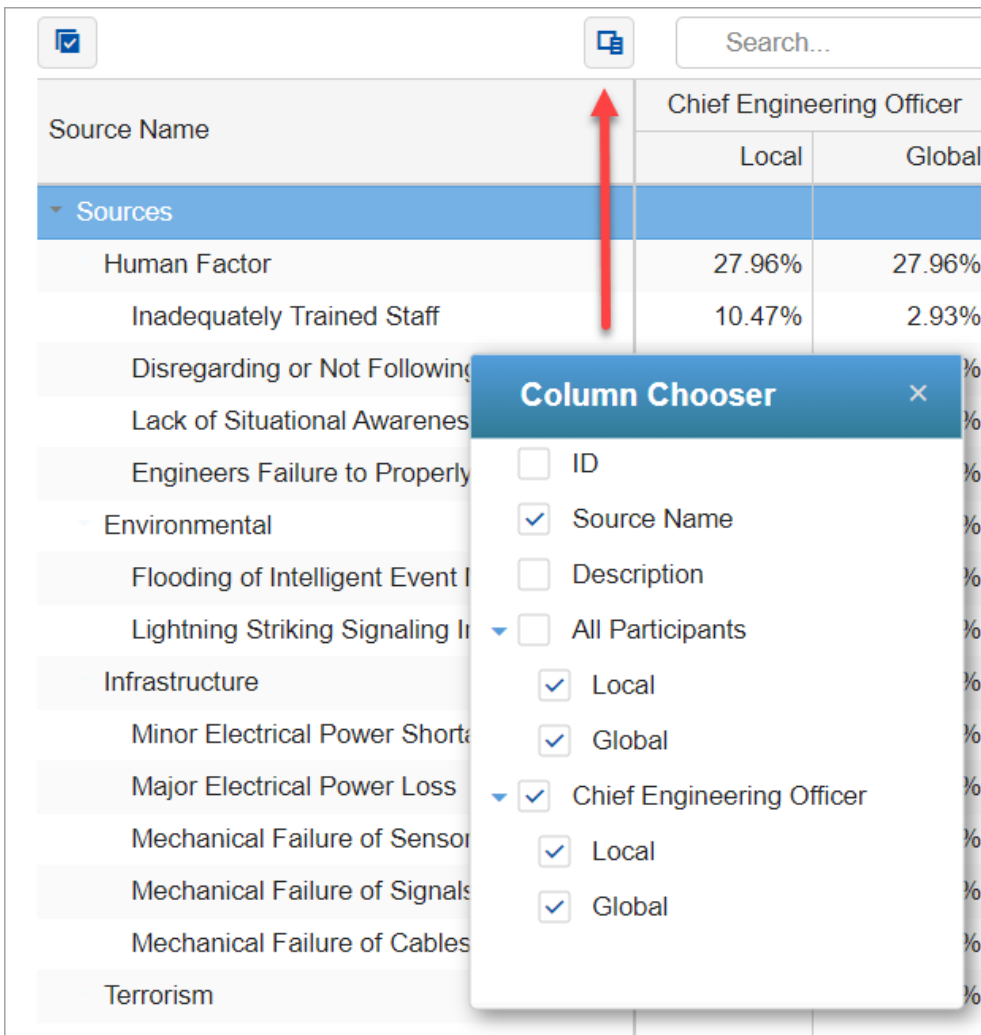
For the main results grid, click the column chooser at the top of the grid:



Simply check/uncheck the column(s) you want to show/hide.

The events attributes can also be displayed on the grid, from above the "Event History" and "Risk Owner" are events attributes.

For the Sources Hierarchy, click also the column choose on its top:



Here you can select:

- ID - Source ID
- Source Name
- Description - source's description or information document
- Local and Global - local or global likelihoods of the sources based on the selected participant/group judgments

Sort by Column

Clicking the column header can sort the grid in ascending or descending order by that header.

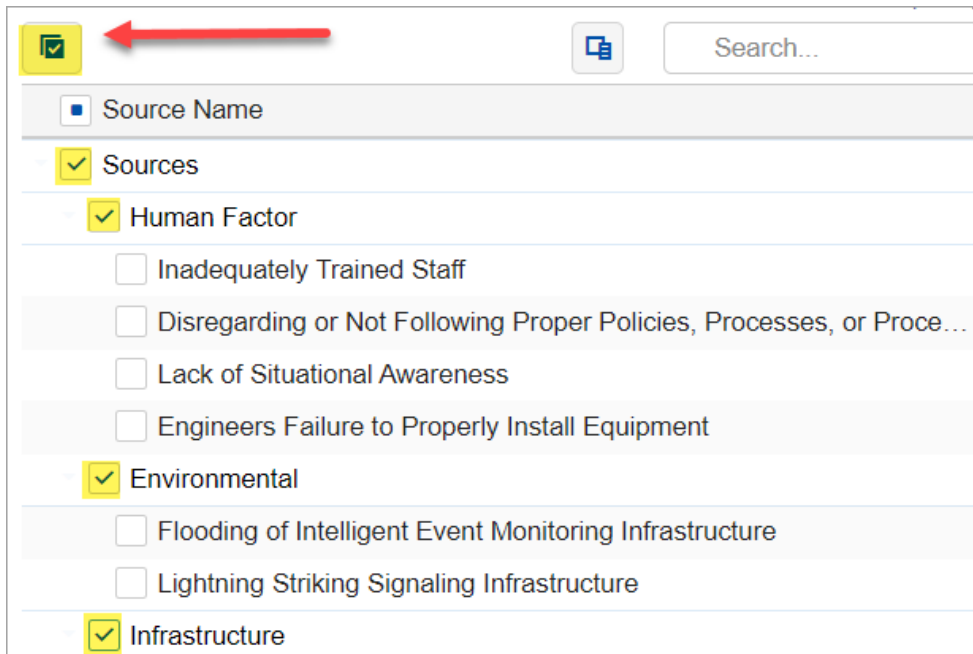
ID	Color	Event Name	Description	All Participants		
				Likelihood	Impact	Risk
[01]	●	Late Train Running	Train is late when its time on the track between the two points is different than the time scheduled in the operational plan.	35.5%	15.9%	5.6%
[02]	●	Degradation of Intelligent Monitoring System Physical Assets	This is degradation of signals, cables, and sensors.	11.2%	32.4%	3.6%
[05]	●	Line Closure	No train traffic allowed	27.2%	22.5%	6.1%
[06]	●	Failed Integration with Future Monitoring System Network		15.6%	6.2%	1.0%
[07]	●	Intelligent Event Monitoring Network Shut Down		18.6%	26.9%	5.0%
[08]	●	Major Train Work Accident	Death occurs	17.6%	43.6%	7.7%
[09]	●	Minor Train Work Accident	Injury occurs	14.7%	6.8%	1.0%
[10]	●	Major Train Public Accident	Death occurs	17.7%	49.7%	8.8%
Total Risk:						38.8%

You can reset the sorting by pressing the Ctrl key on your keyboard and clicking again the column header where the sorting is currently active.

Select Multiple Source Nodes

Instead of showing results only from one WRT Source, you can also select multiple source nodes at once.

To enable multi-select, click the multi-select icon at the top of the Sources Hierarchy. By doing so, you will see checkboxes to the right of the source names where you can select the WRT source nodes you want to see the results.



A new column, WRT Source, will be displayed on the main results grid to indicate the WRT nodes for each event.

ID	Color	Event Name	All Participants			WRT Source
			Likelihood	Impact	Risk	
[01]	●	Late Train Running	35.5%	15.9%	5.6%	Sources
[02]	●	Degradation of Intelligent Monitoring System Physical Assets	11.2%	32.4%	3.6%	Sources
[05]	●	Line Closure	27.2%	22.5%	6.1%	Sources
[06]	●	Failed Integration with Future Monitoring System Network	15.6%	6.2%	1.0%	Sources
[07]	●	Intelligent Event Monitoring Network Shut Down	18.6%	26.9%	5.0%	Sources
[08]	●	Major Train Work Accident	17.6%	43.6%	7.7%	Sources
[09]	●	Minor Train Work Accident	14.7%	6.8%	1.0%	Sources
[10]	●	Major Train Public Accident	17.7%	49.7%	8.8%	Sources
[01]	●	Late Train Running	37.7%	15.9%	6.0%	Human Factor
[02]	●	Degradation of Intelligent Monitoring System Physical Assets	6.3%	32.4%	2.0%	Human Factor
[05]	●	Line Closure	35.4%	22.5%	8.0%	Human Factor
[06]	●	Failed Integration with Future Monitoring System Network	7.6%	6.2%	0.5%	Human Factor
[07]	●	Intelligent Event Monitoring Network Shut Down	22.0%	26.9%	5.9%	Human Factor
[08]	●	Major Train Work Accident	25.8%	43.6%	11.3%	Human Factor
[09]	●	Minor Train Work Accident	21.5%	6.8%	1.5%	Human Factor
[10]	●	Major Train Public Accident	26.1%	49.7%	13.0%	Human Factor
[01]	●	Late Train Running	0.2%	15.9%	0.0%	Environmental
[02]	●	Degradation of Intelligent Monitoring System Physical Assets	0.2%	32.4%	0.1%	Environmental
[05]	●	Line Closure	0.0%	22.5%	0.0%	Environmental

From above, we can see the likelihoods, impacts, and risks of the events WRT the Overall Sources (top-node), Human

Factor, and Environmental.

You can also group the grid by WRT source for better display, this is done by dragging the WRT column header to the top left of the grid:

The screenshot shows a software interface for risk assessment. On the left is a sidebar with a search bar and a tree view of categories: Source Name, Sources (checked), Human Factor (checked), Environmental (checked), and Terrorism (unchecked). The main area is a table with columns: ID, Color, Event Name, Likelihood, Impact, Risk, and WRT Source. The table is grouped by WRT Source, with rows for Sources, Human Factor, and Terrorism. Each row contains event details and percentage values for Likelihood, Impact, and Risk. A 'Total Risk' of 87.1% is shown at the bottom right.

ID	Color	Event Name	All Participants			WRT Source
			Likelihood	Impact	Risk	
[01]	●	Late Train Running	35.5%	15.9%	5.6%	Sources
[02]	●	Degradation of Intelligent Monitoring System Physical Assets	11.2%	32.4%	3.6%	Sources
[05]	●	Line Closure	27.2%	22.5%	6.1%	Sources
[06]	●	Failed Integration with Future Monitoring System Network	15.6%	6.2%	1.0%	Sources
[07]	●	Intelligent Event Monitoring Network Shut Down	18.6%	26.9%	5.0%	Sources
[08]	●	Major Train Work Accident	17.6%	43.6%	7.7%	Sources
[09]	●	Minor Train Work Accident	14.7%	6.8%	1.0%	Sources
[10]	●	Major Train Public Accident	17.7%	49.7%	8.8%	Sources
[01]	●	Late Train Running	37.7%	15.9%	6.0%	Human Factor
[02]	●	Degradation of Intelligent Monitoring System Physical Assets	6.3%	32.4%	2.0%	Human Factor
[05]	●	Line Closure	35.4%	22.5%	8.0%	Human Factor
[06]	●	Failed Integration with Future Monitoring System Network	7.6%	6.2%	0.5%	Human Factor
[07]	●	Intelligent Event Monitoring Network Shut Down	22.0%	26.9%	5.9%	Human Factor
[08]	●	Major Train Work Accident	25.8%	43.6%	11.3%	Human Factor
[01]	●	Degradation of Intelligent Monitoring System				Human Factor

Total Risk: 87.1%

Show Monetary Values

Simulated vs Computed Event Likelihoods, Impacts, and Risks (Flaw of Averages)

Preferences