

Risk Matrix Worksheet

Definitions	Frequency of Occurrence	Value
Frequent	<ul style="list-style-type: none"> – Likely to occur many times; will be continuously experienced unless action is taken to change events – Occurrences reflect a pattern (or potential pattern) of material failures that have not yet been rectified – Given the design or maintenance of the equipment, its strength under known operating conditions, etc., continued operations will likely lead to failure – Given the empirical evidence on some aspect of human performance, it can be expected with some certainty that normal individuals, operating under similar working conditions, would likely commit the same errors or be subject to the same performance outcome – Given the empirical evidence on some aspect of mechanical devices, it can be expected with some certainty that normal pieces of equipment, operating under similar working conditions, would likely have the same failures or flaws – Normal individuals, operating under similar working conditions, would likely commit the same errors 	5
Occasional	<ul style="list-style-type: none"> – Likely to occur sometimes; will occur often if events follow normal pattern. – Failures derive from hazards with a reasonable probability that similar patterns of human/mechanical performance can be expected under similar working conditions, or that the same material defects exist elsewhere in the system 	4
Remote	<ul style="list-style-type: none"> – Unlikely, but possible to occur. – Even if the possibility is only remote, the consequences of such concurrent failures warrant follow-up – Failures that are “unlikely to occur” include isolated occurrences and risks where the exposure rate is very low, or sample size is small – Complexity of the circumstances necessary to create an accident situation may be such that it is unlikely such a chain of events will arise again 	3
Improbable	<ul style="list-style-type: none"> – Very unlikely to occur 	2
Extremely Improbable	<ul style="list-style-type: none"> – Almost inconceivable that the event will occur 	1

Definitions	Severity of Consequences	Value
Catastrophic	<ul style="list-style-type: none"> – NTSB-reportable accident – One fatality or more – Loss or breakdown of an entire system or sub-system – Willful violation of any safety regulation that may result in serious injury or death 	5
Hazardous	<ul style="list-style-type: none"> – NTSB-reportable incident – Partial breakdown of a system or sub-system – A large reduction in safety margins – Physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely – Serious injury to one or more people; Major equipment damage 	4
Major	<ul style="list-style-type: none"> – Serious incident – Non-life threatening employee/customer injury – Inability of operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency – Mechanical malfunction; human factor event – Significant reduction in safety margins – Non-conformance to company policy with potential of moderate operational degradation 	3
Minor	<ul style="list-style-type: none"> – Nuisance – Operating limitations – Use of emergency procedures – Minor incident or injury – Minor aircraft, system or environmental damage – Failure conditions that would not significantly reduce airplane safety and involve crew actions well within their capabilities – Slight reduction in safety margins or functional capabilities (including system deficiencies leading to poor air carrier performance or disruption of the air carrier schedule.) – Slight increase in workload or some inconvenience to occupants 	2
Negligible	<ul style="list-style-type: none"> – No aircraft damage – None or minor system or environmental damage 	1

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	Severity					
		Catastrophic	Hazardous	Major	Minor	Negligible
Frequency	Frequent	A	A	B	B	C
	Occasional	A	B	B	C	D
	Remote	B	B	C	C	D
	Improbable	B	C	C	D	E
	Extremely Improbable	C	D	D	E	E

Extremely High Risk **A** High Risk **B** Moderate Risk **C** Minor Risk **D** Negligible Risk **E**

Acceptable: No mitigation action needs to be taken, but it needs to be monitored by the responsible department. (Levels 1– 4; D-E)

Undesirable: Living with the risk in order to have certain benefits, with the understanding that the risk is being mitigated. (Levels 5 – 10; Low B-C)

Unacceptable: The hazard must be mitigated immediately until the risk is reduced to the *Undesirable* level. (Levels 11–25; A-Medium B)