

Risk Assessment Matrix

LIKELIHOOD	SEVERITY			
	Catastrophic	Critical	Marginal	Negligible
Probable	High	High	Serious	
Occasional	High	Serious		
Remote	Serious	Marginal		Low
Improbable				

Applying a risk-assessment matrix like the one above, adopted from the FAA’s *Risk Management Handbook*, FAA-H-8083-2 (RMH), isn’t difficult, but does pose a few questions for first-time users. For example, how should one parse the “likelihood” and “severity” categories to make an accurate assessment? Here are some guidelines.

LIKELIHOOD

According to the RMH, an event’s likelihood “is nothing more than taking a situation and determining the probability of its occurrence. It is rated as probable, occasional, remote or improbable.” The *Handbook* goes on to suggest the following categorizations:

- Probable—an event will occur several times.
- Occasional—an event will probably occur sometime.
- Remote—an event is unlikely to occur, but is possible.
- Improbable—an event is highly unlikely to occur.

SEVERITY

When considering the severity of an event, substitute the concept of its consequences. For example, continuing VFR flight into instrument conditions routinely results in fatal accidents. Therefore, the consequences of VFR-into-IMC should be considered “catastrophic.” The RMH uses the following guidelines:

- Catastrophic—results in fatalities, total loss.
- Critical—severe injury, major damage.
- Marginal—minor injury, minor damage.
- Negligible—less than minor injury, less than minor system damage.

THEN WHAT?

Once you’ve assigned realistic values to the proposed flight’s likely outcome and its severity, what’s next? Presuming the risk and the consequences are too great, you have two choices: Cancel the flight, or mitigate the risk. In the case of our proposed VFR-into-IMC flight, mitigation might include delaying the flight until the poor conditions improve, choosing a different route or picking a destination offering better weather.

Once we change our flight’s plan, we then need to re-assess whether the modifications materially affect the likely outcome and consequences. If not, we have the same two choices: Cancel the flight or accept the risks. If, however, our changes have a material impact on the flight’s risk, it’s once again time to consider where in the matrix we find ourselves.

Applying this risk-assessment matrix is an iterative process: Perform the assessment until the results are acceptable. But the key is to realistically assess risk and possible outcomes. If you’re unwilling to do that, you’re wasting time and good luck to you. Further, if you’re unwilling to realistically assess risk and your decisions involve imposing those same risks on unknowing passengers, you need to seriously consider whether you should be flying in the first place.