Determining Fatal Accident Causes

As this article's main text details, I set out to determine the underlying causes of fatal accidents involving the Cirrus SR22, Beech Bonanza 35 and Cessna 172. A crucial part of this exercise was forming the hypothesis that improper, ineffective or absent risk management plays a key role in GA fatal accidents. I framed it as follows:

- If the pilot could have identified hazards that could have created unacceptable risk to the proposed or ongoing flight using the common PAVE (Pilot, Aircraft, Environment, External Pressures) checklist for risk identification, and
- If the pilot could have assessed the risk in terms of likelihood and severity such that high ("red") or moderate ("yellow") risks would be apparent, and
- If the pilot had taken effective steps to mitigate, i.e., reduce likelihood and/or severity of the risk, then
- Could the accident been avoided?

I recognize that, in applying these tests, I could be accused of speculation using hindsight. I believe, however, that any accident meeting the above three tests can properly be classified as a risk-management accident. The accident records I examined are summarized below.

SELECTED FATAL GENERAL AVIATION ACCIDENTS, 2007-2009 (PERSONAL PART 91 ONLY)

AIRCRAFT MODEL	TOTAL FATAL ACCIDENTS IN NTSB DATABASE	EXCLUDED	ANALYZED
Cirrus SR22	19	9	10
Beech 35	14	2	12
Cessna 172	35	7	28
TOTAL:	68	18	50

SUMMARY OF RISK MANAGEMENT CLASSIFICATION OF GA FATAL ACCIDENTS, SELECTED AIRCRAFT, 2007-2009

AIRCRAFT MODEL	PILOT RISK-MANAGEMENT ACCIDENTS	PILOT-SKILL ACCIDENTS (*not* related to risk management)	AIRCRAFT-RELATED ACCIDENTS (*not* related to risk management)	TOTAL
Cirrus SR22	7 (70%)	2	1	10
Beech 35	8 (67%)	3	1	12
Cessna 172	24 (86%)	4	0	28
TOTAL:	39 (78%)	9	2	50