

Comparison of Maintenance-Related Errors in Amateur-Built Aircraft and All Other General Aviation

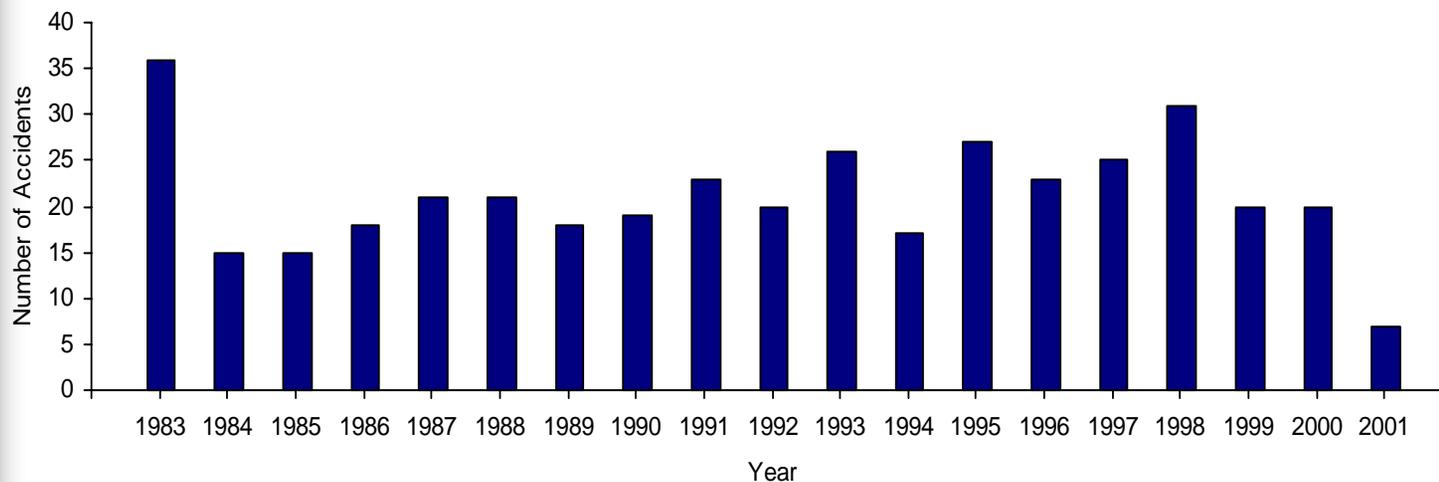
Phase I Results

CAMI/AAM-520



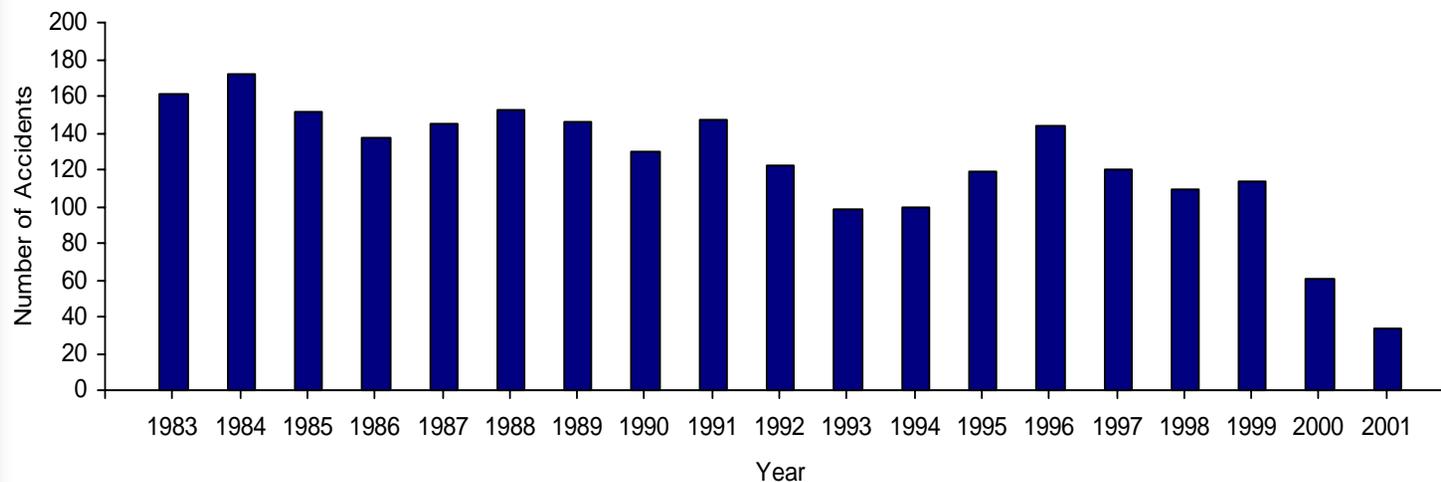
Maintenance-Related (M-R) Amateur-Built (A-B) Accident Data

- 1983 - 2001, 402 Cases, A-B M-R Accidents only.
- Sample was obtained by selecting amateur-built aircraft accidents that reported a maintenance subject code as a cause or factor in the accident.



M-R All Other GA Accident Data

- 1983 - 2001, 2361 Cases, All Other GA M-R Accidents Only.
- 2155 Part 91 operations, 206 Part 137 operations.
- Sample was obtained by selecting accidents not involving an amateur-built aircraft that reported a maintenance subject code as a cause or factor in the accident.



A-B & GA M-R Causal Factors

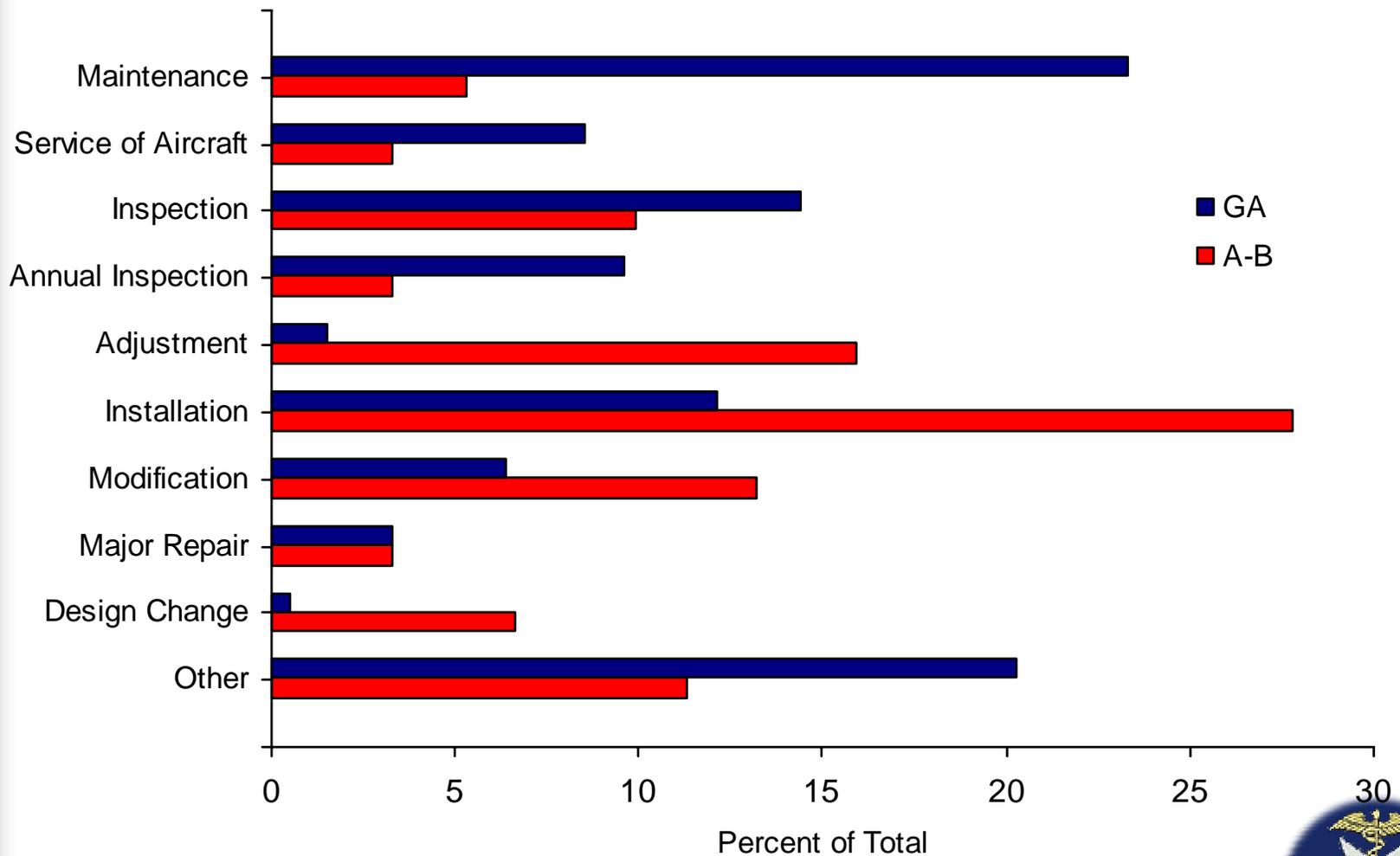
Causal Factor	A-B	GA
Installation	31.6	16.8
Inspection	12.7	15.0
Adjustment	10.7	4.2
Modification	10.4	2.9
Maintenance	9.7	16.7
Design Change	4.5	0.3
Annual Inspection	4.0	10.2
Other ^a	16.1	33.8
Total	99.7^b	99.9^b

^a Other refers to causal factors that contributed less than 4% of the total. Examples of categories contained in 'Other' include Adjustment, Alignment, and Balancing.

^b Total is not equal to 100% due to rounding.



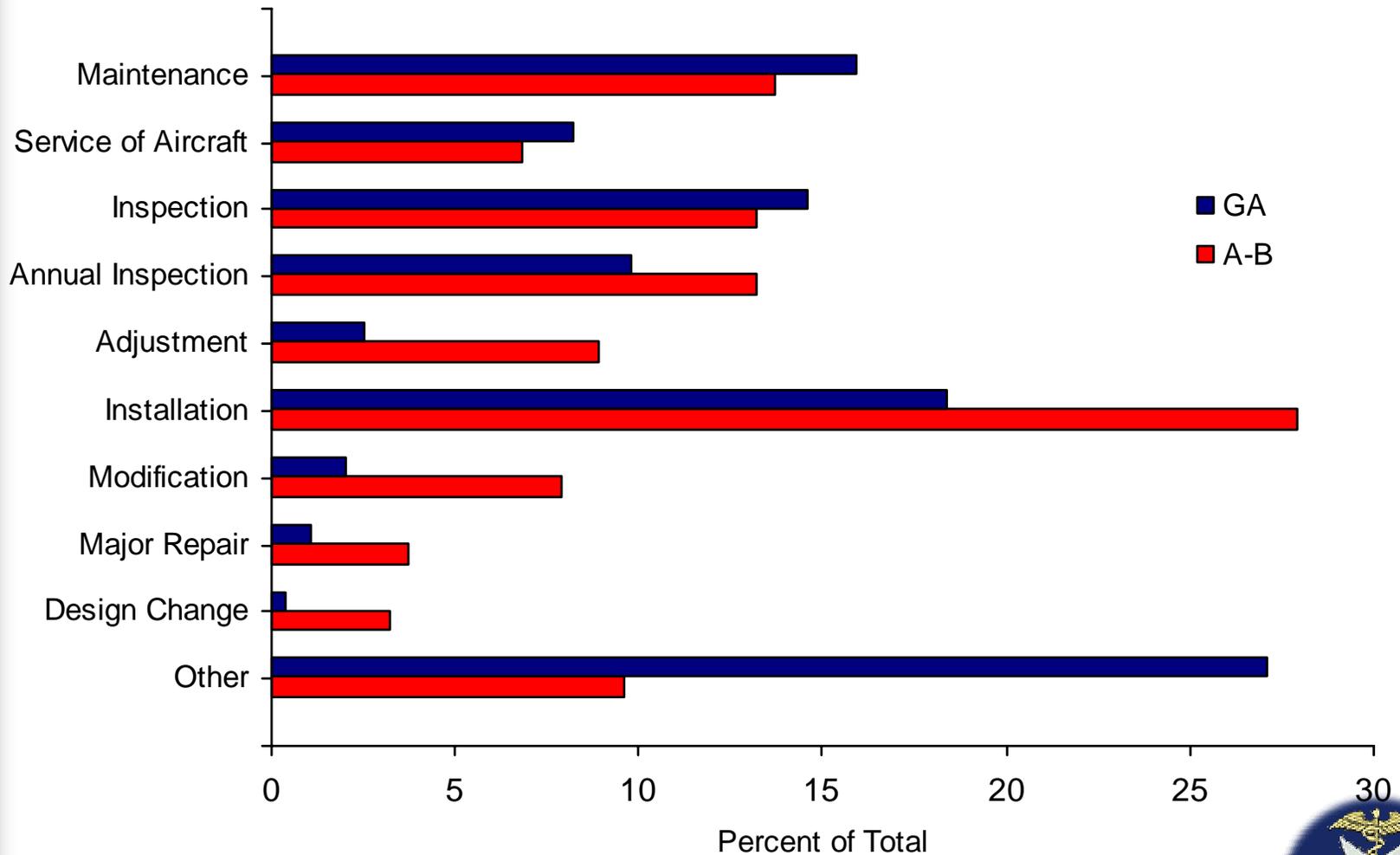
Fatalities in M-R A-B and GA Accidents



* Some examples of 'Other' maintenance causes include Alignment, Balancing, and Lubrication.



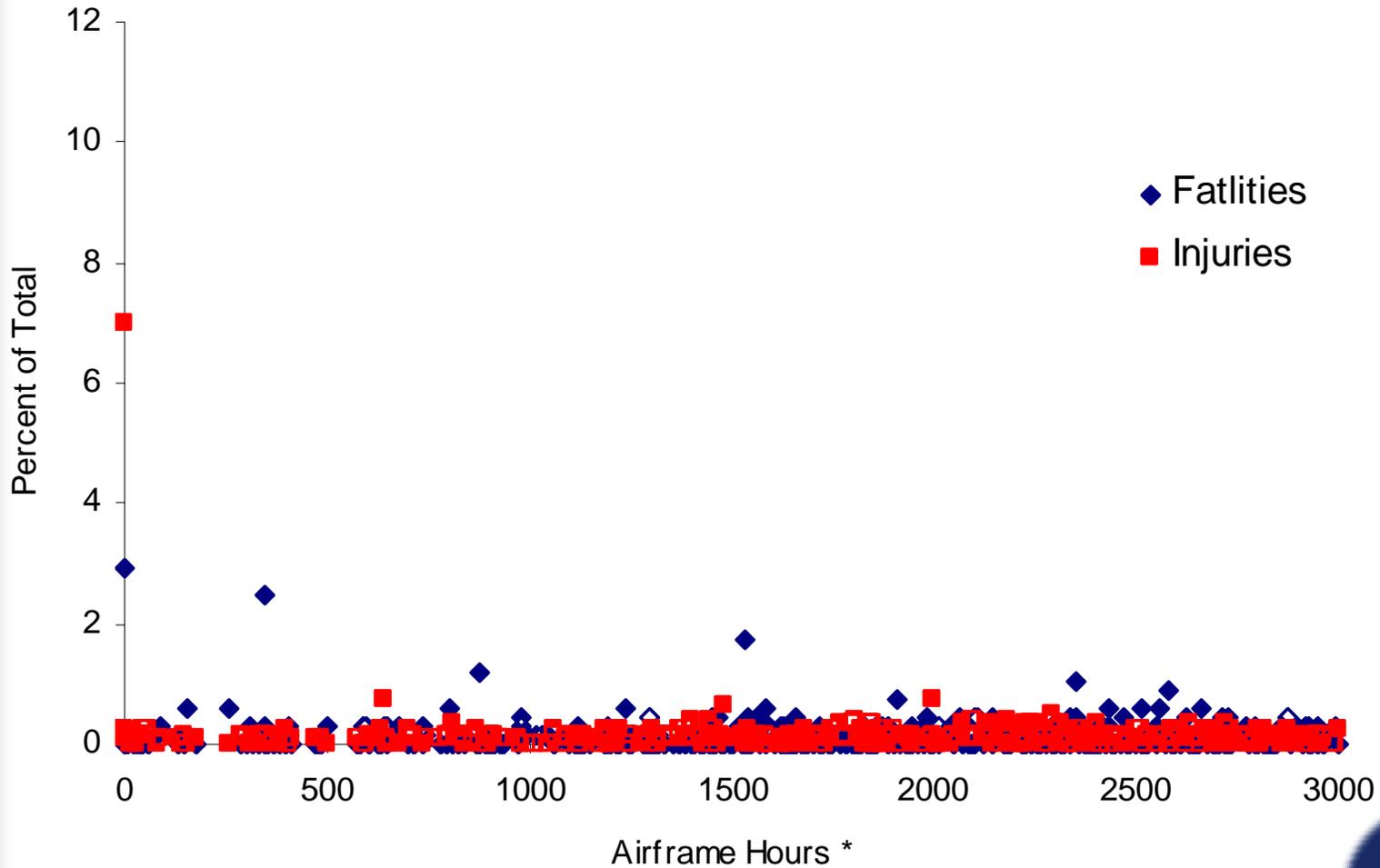
Injuries in M-R A-B and GA Accidents



* Some examples of 'Other' maintenance causes include Alignment, Balancing, and Lubrication.



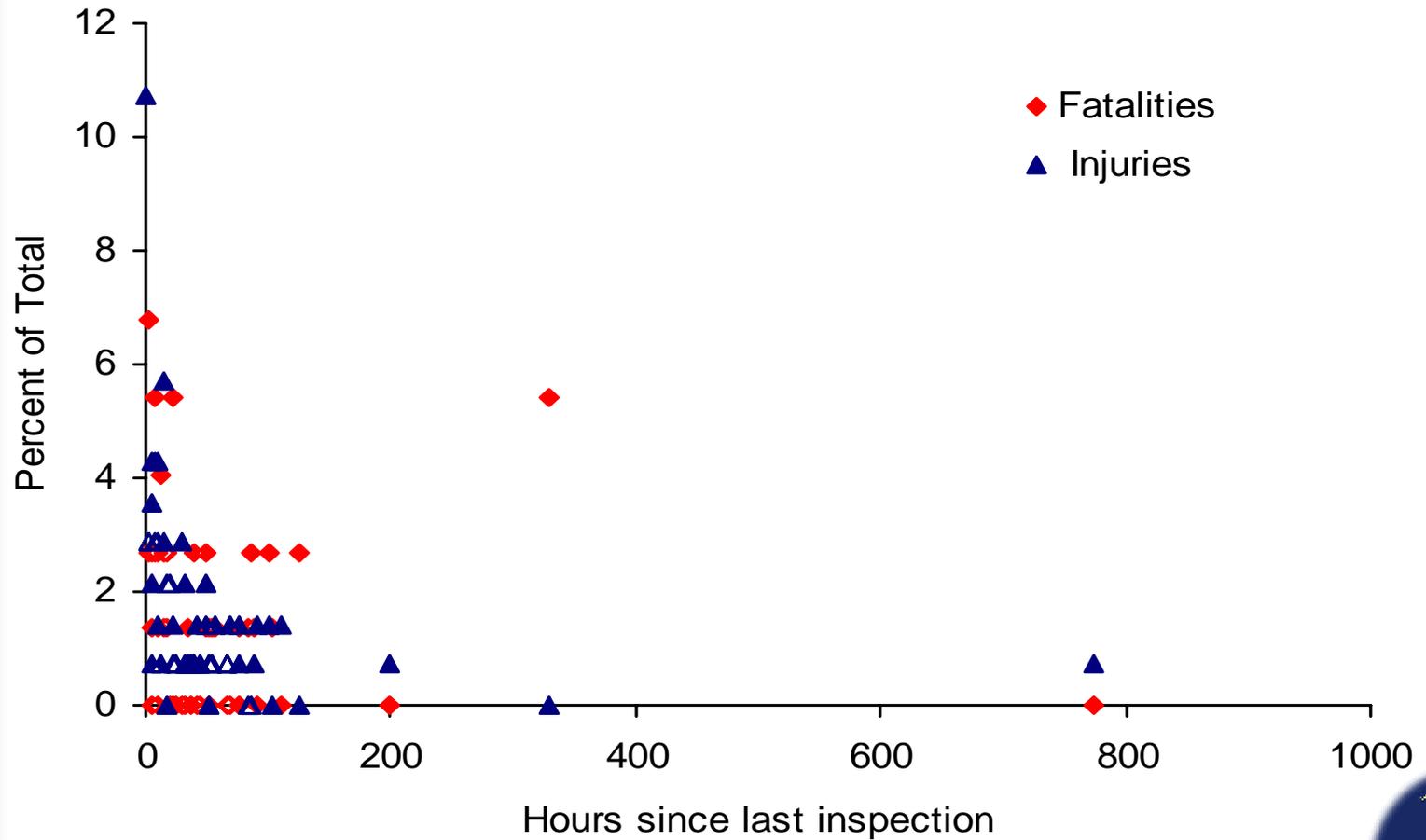
All Other GA Airframe Hours by Fatalities & Injuries in M-R Accidents



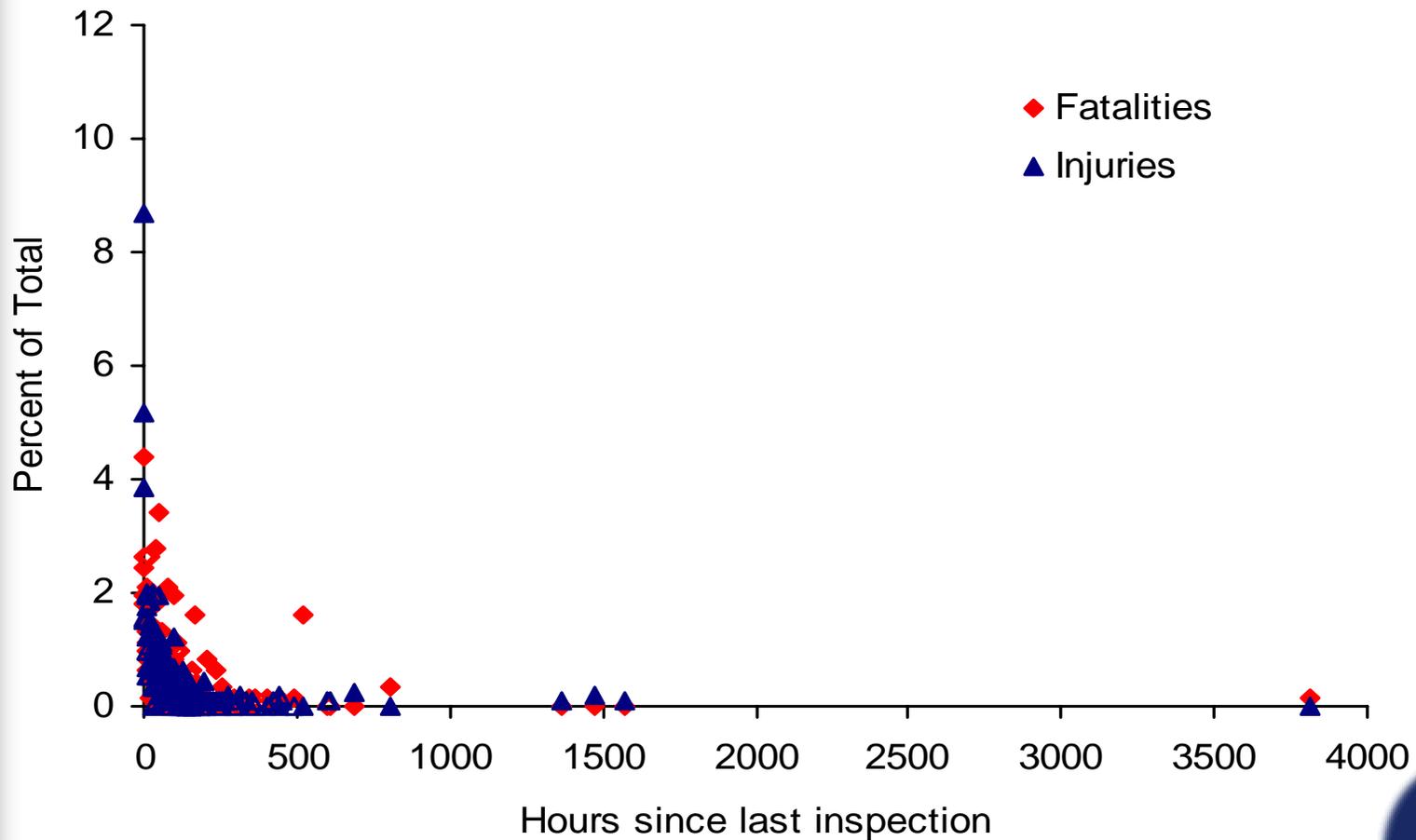
* 49.92% of fatalities and 44.55% of injuries occurred after 3000 airframe hours.



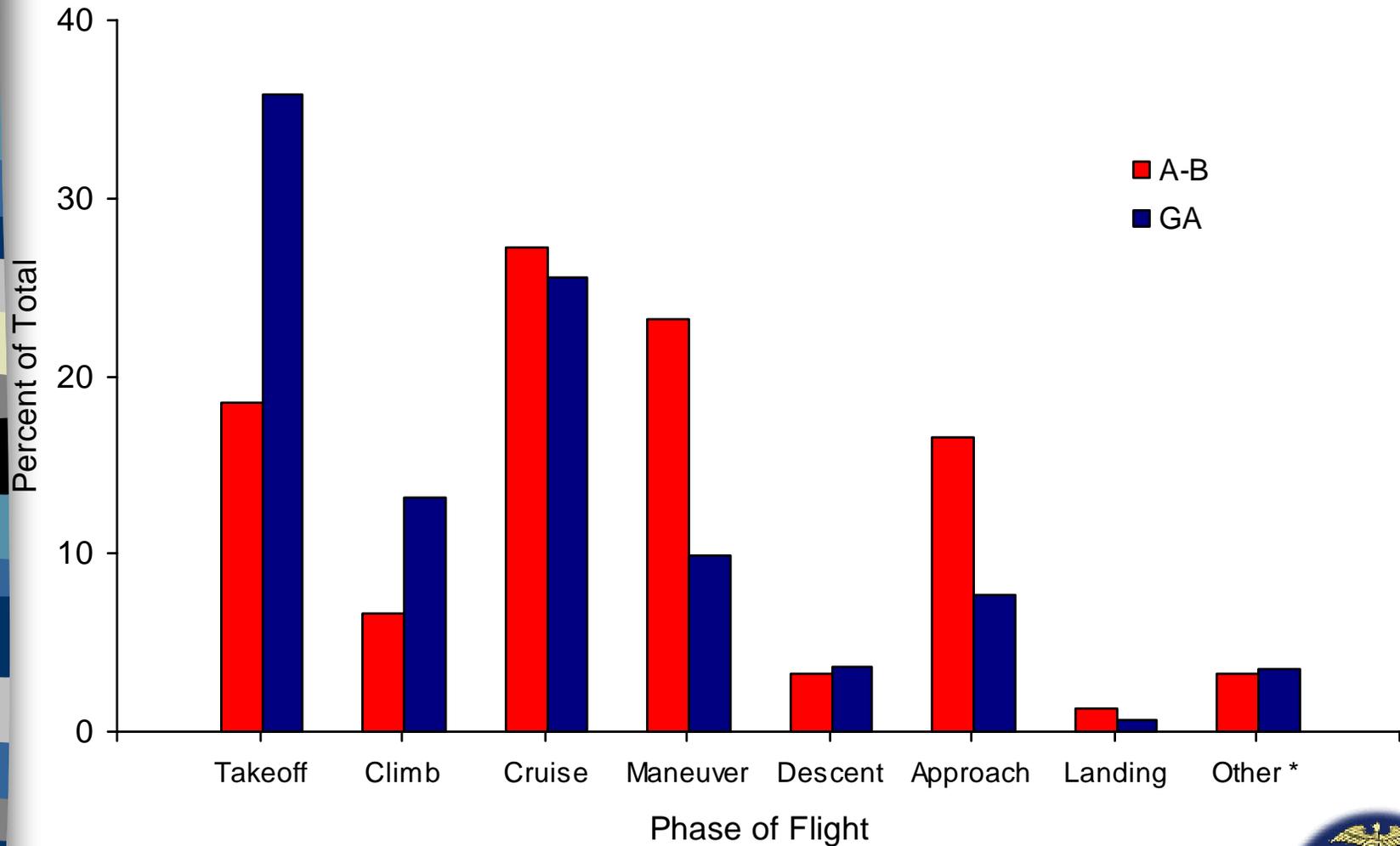
A-B Hours Since Last Inspection by Fatalities & Injuries in M-R Accidents



All Other GA Hours Since Last Inspection by Fatalities & Injuries in M-R Accidents



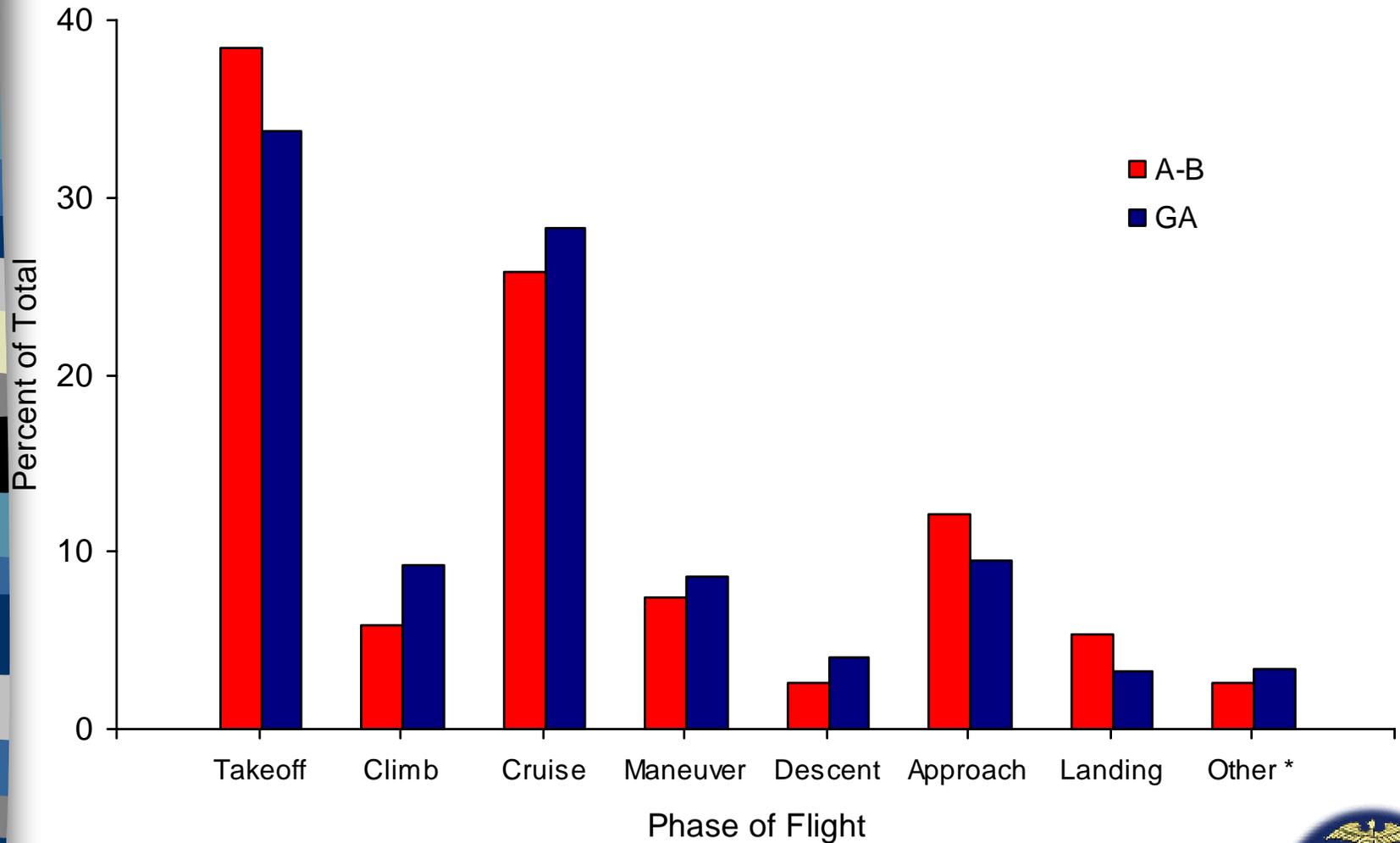
Fatalities in Phases of Flight in M-R Accidents



* Some examples of 'Other' phases of flight include Standing, Taxi, and Hover.



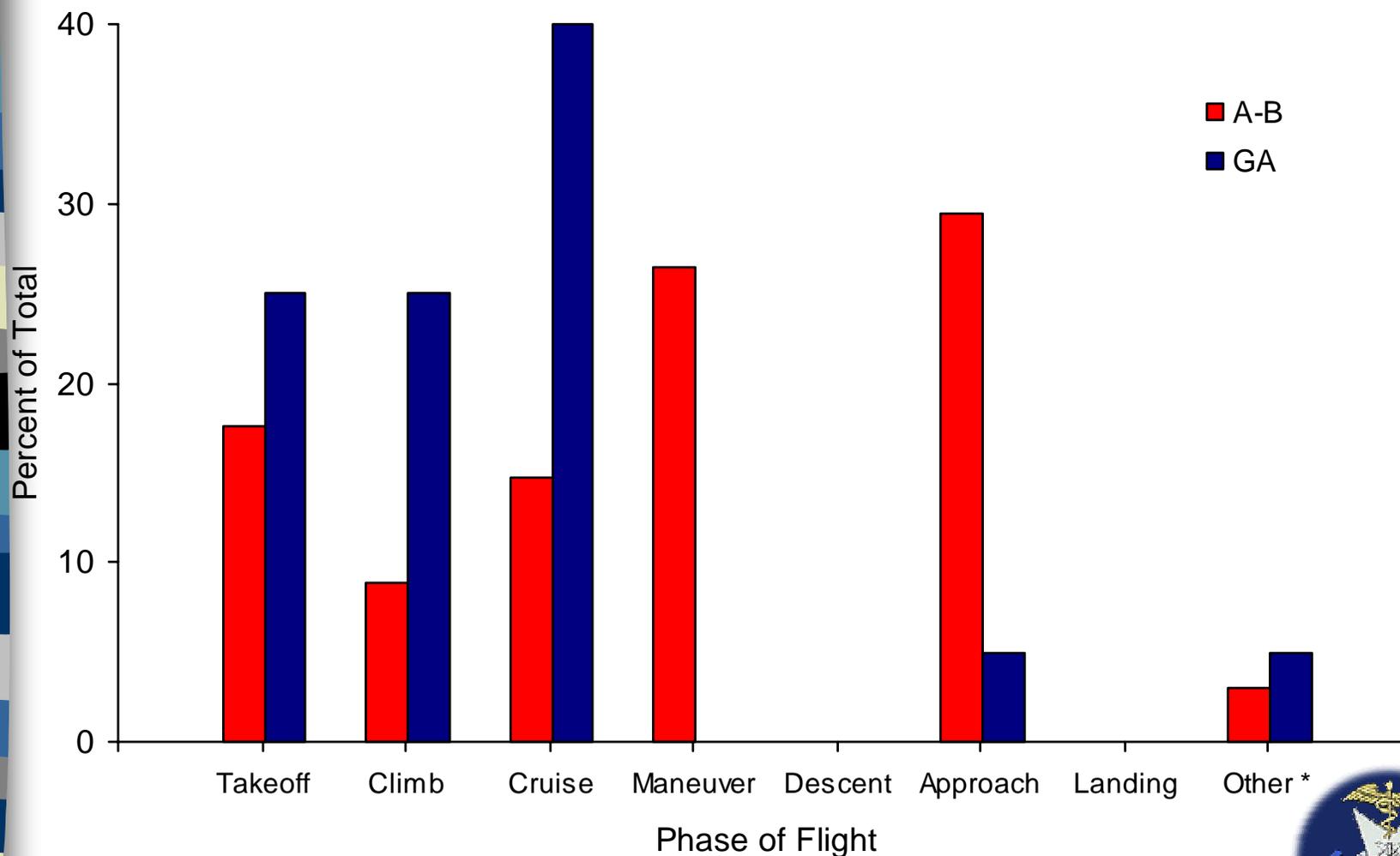
Injuries in Phases of Flight in M-R Accidents



* Some examples of 'Other' phases of flight include Standing, Taxi, and Hover.



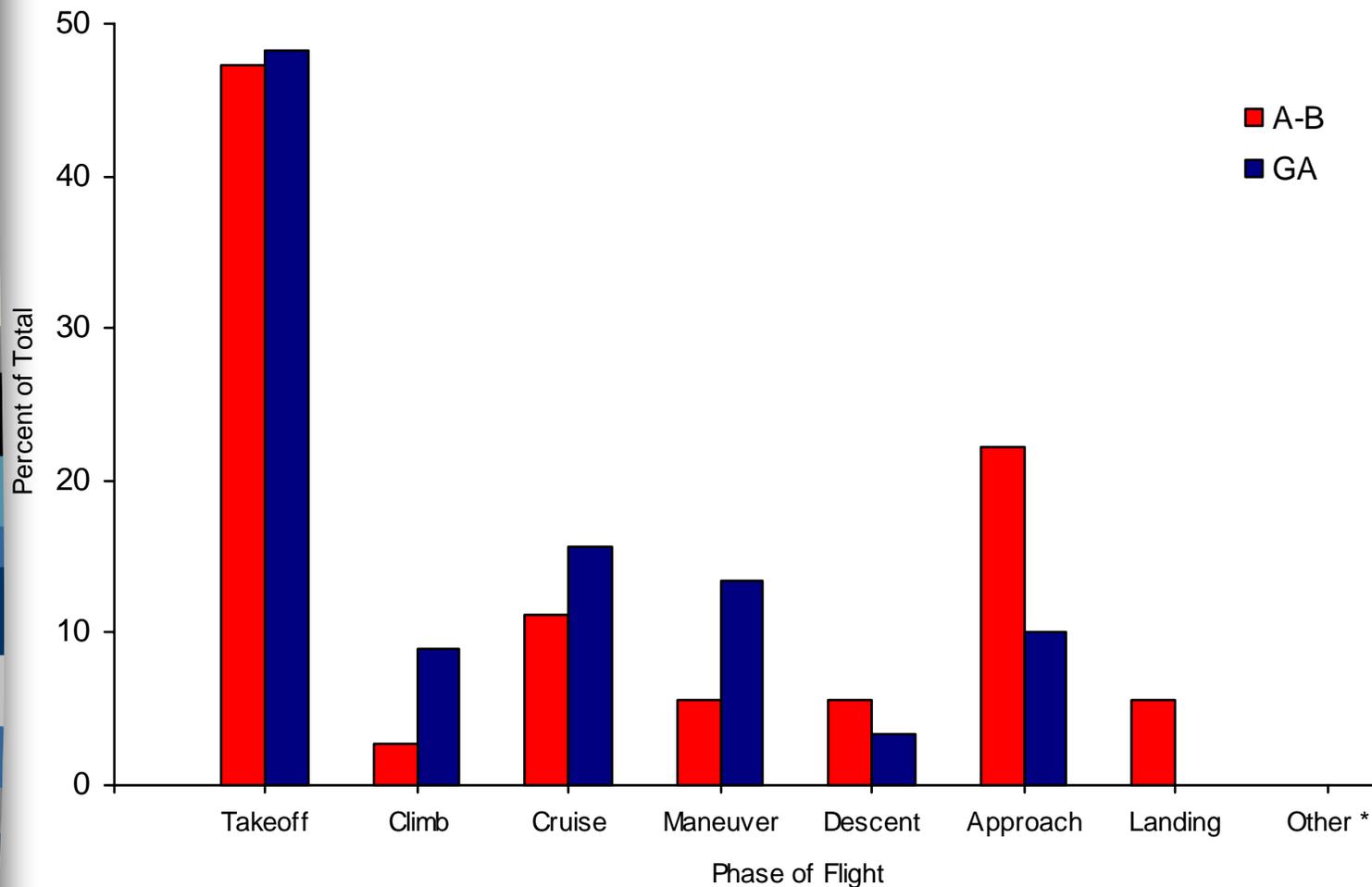
Fatalities by Phase of Flight for First 10 Airframe Hours in M-R Accidents



* Some examples of 'Other' phases of flight include Standing, Taxi, and Hover.



Injuries by Phase of Flight for First 10 Airframe Hours in M-R Accidents



* Some examples of 'Other' phases of flight include Standing, Taxi, and Hover.



Conclusions

- A large proportion of M-R fatalities and injuries occur during the first 10 hours of airframe time in A-B aircraft.
- All other GA aircraft fatalities and injuries due to M-R causes are widely dispersed over total airframe time.



Conclusions

- For A-B aircraft, a large proportion of M-R fatalities and injuries occur during the first 15 hours since last inspection.
- In all other GA aircraft, the pattern of M-R fatalities and injuries is higher the first few hours after inspection, but generally dispersed over time.



Conclusions

- Installation was the most common causal factor for M-R accidents for A-B and all other GA.
- The second most common causal factor was inspection for A-B, and maintenance for all other GA.



Conclusions

- For A-B, installation was the largest causal factor in fatal M-R accidents. For all other GA, maintenance largest cause of fatalities.
- Installation was the largest M-R causal factor for A-B and all other GA injuries.



Conclusions

- Most M-R fatalities in A-B aircraft occurred during the cruise phase of flight. For all other GA, the majority of fatalities occurred during takeoff.
- The majority of injuries occurred during takeoff for A-B and all other GA.

