USA FAI CIMP Report 2013

In this annual report, we consider regulatory changes in the USA that might affect air sports, and review accidents to assess trends and advocate needed interventions.

From: US Delegates, GW McCarthy R Garrison

Accident Review

Methods: The National Transportation Safety Board database was searched using all possible, relevant key terms. Accident synopses were briefly reviewed to enable categorization of causation.

Glider accidents:

1. There were 32 glider accidents reported, 6 of which caused 8 fatalities.
    a. Notable fatalities included a take-off with the ground movement tail wheel "dolly" still attached. Both pilots and an infant were killed.
    b. In another, the engine failed at 200 ft. AGL, causing premature landing.
    c. Another pilot left the glider after a stall in a thermal, but was at too low altitude to use his parachute.
2. This reviewer would categorize these accidents into several, non-exclusive causes:
    a. Stall 7
    b. Human factors 7 e.g., mis-set flaps, agl vs msl release altitude, pilot-induced-oscillations on take-off or landing
    c. Mechanical failure 3
    d. Tow and take-off 3
3. The remaining, majority of accidents were caused in part by mis-judging available lift or altitude or range from the field.
4. There were 2 mid-air collisions, 1 of which occurred during competition.
5. Three (3) pilots parachuted from either mid-air collision, stall and loss of control, and 1 mechanical failure of the rudder and tail. Two (2) survived.

Powered parachute accidents: There were 16, 1 of which was fatal.

Weight-shift accidents: 11, of which 4 were fatal (6 fatalities); 2 mechanical failures

Ultralight: 9 accidents, 1 fatality

Powered-lift accidents: None reported to NTSB.

Gyroplane accidents: 5, 2 fatal. Significantly, 3/5 were on initial flights.

Light Sport accidents: 29 accidents, of which 11 were fatal.

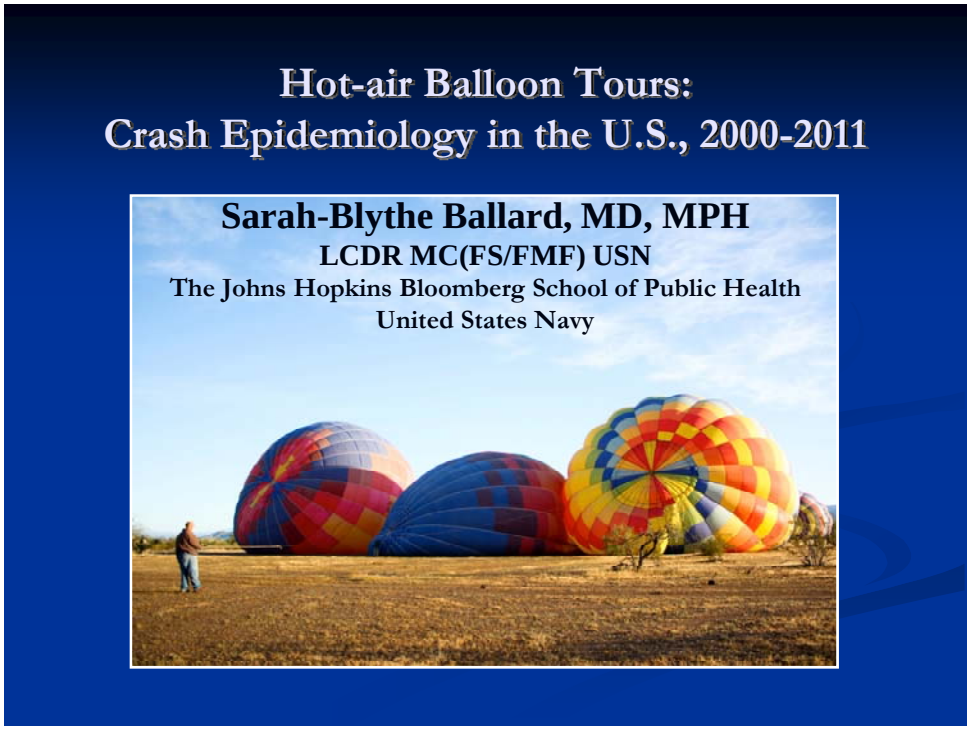
Competition accidents: 4, of which1 fatality is identified among the glider accidents above.

Aerobatic accidents: 7 of which 4 were fatal. In 2 the pilot exited the airplane, but in both, was too low to open the parachute. All of these aerobatic fatalities occurred at low altitude, close to ground or water.

Balloon accidents: 16, 1 fatality caused by penetration of a thunderstorm. I note that all the passenger and pilot injuries were inflicted on landing, typically in high winds. Also there were 4 wire strikes.

In these balloon accidents with major injuries, the operator is required by the FAA to provide an oral and/or written briefing which includes the correct position for an anticipated hard landing. In these accidents there is no record of any further teaching or practice for hard landings.

In addition, I attach an *excellent, comprehensive survey of 10y of commercial, balloon accidents* that was presented to the Aerospace Medical Association Scientific Meeting in May 2013. I am indebted to Dr. Ballard, and her mentor, Dr. Susan Baker of Johns Hopkins School of Public Health for permission to disseminate her analysis to CIMP Delegates.



<u>Conclusions and Recommendations:</u>

1. These accident data are indicators only, in that there is no normalizing exposure rate such as sorties, hours, weather conditions, etc.
2. A significant proportion of glider injuries and fatalities would be reduced by adopting the crash force management innovations previously presented by CIMP Delegates and experts.
3. Lighter, slower sports aviation aircraft and balloons have lower fatality probability per accident. This is intuitively evident, but nonetheless points out the need for better crash energy management in all aircraft.
4. The notable failure of balloon passengers to recall and execute the crash brace position indicates that actual practice in a simple, part-task trainer would increase the probability of successful execution. Cognition and recall do not function well, if at all, in conditions of life-threatening stress. Only an embedded, practiced psychomotor program can be started by a practiced cue.
5. Parachutes are very rarely used in aerobatics. This year, the only parachute use in the USA was in 2 low altitude aerobatic flights with Loss of Control or mis-judged altitude, and in 3 glider LOC accidents. In 3/5 attempts, minor or no injuries occurred. The previous experience of parachuting for these pilots is not reported.

a. The FAA absolute requirement for parachutes when performing any aerobatic manoeuvre has little obvious justification. A more reasonable requirement would be for parachute if aerobatics were to be performed at altitude below which a routine spin recovery could be performed.
b. Similarly, if a ballistic recovery parachute is installed on the aircraft, it is not reasonable to also demand personal parachutes for aerobatic manoeuvres.

Regulatory Actions and Trends

We might look to the NTSB for actions to improve sports and recreational flying safety. The NTSB has a long-standing initiative to reduce weather-related General Aviation accidents.

http://www.ntsb.gov/doclib/recletters/2005/A05_24_29.pdf

However, virtually all sports aviation accidents occur in VMC, and therefore this initiative will not affect sports flying.

In June 2012, the NTSB sponsored a workshop on GA safety. In the Presentations section are several views of needed improvements:

http://www.ntsb.gov/news/events/2012/GA_safety/index.html

I found the presentations interesting, but without promise of radical reduction in accidents in the near future.

There were no new regulatory initiatives by the FAA in 2012.

AOPA +EAA Medical Exemption petition: This petition, signed by thousands, was sent to the FAA to request that self-certification without current FAA medical be extended for specified personal flights.

http://www.aopa.org/News-and-Video/All-News/2012/March/20/AOPA-EAA-file-medical-exemption-petition.aspx

The FAA has not responded, and appears to be ignoring the petition at this time.

The FAA has recently instituted the process of streamlining airman certification with respect to “Special Issuances” referred to as CACI (conditions AME’s can issue). This allows AME’s the ability to directly issue certificates to airman with certain conditions. Previously this was an FAA responsibility. Now if the airman meets the specification the AME can issue the certificate without FAA preapproval.

Respectfully submitted,

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