



Interagency Aviation Safety Alert



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Subject: Helicopter Brace For Impact Positions

Area of Concern: Helicopter Operations

Distribution: All Fire and Aviation Operations

Discussion: “BRACE FOR IMPACT” These are three words that you never want to hear when flying in an aircraft, but will assist you in preparing yourself for a crash sequence if one were to occur. This communique was developed due to the inconsistent information within various manuals and training materials.

Body position at the time of impact is an important factor in making an accident survivable. The two primary reasons for bracing are to reduce secondary impact and flailing injuries. Secondary impact injuries can be reduced by repositioning the body (particularly the head) against the surface it would normally strike during impact. When using a shoulder harness, secondary impact with the structure will likely involve the head, thus the importance of head positioning.

Flailing can be reduced by proper body positioning and gripping the seat edge with your hands or placing them under your legs. **DO NOT** grasp the restraint harness. If your seat is equipped with non-inertial reel-type shoulder harnesses, make sure you tighten the shoulder harnesses as much as possible.

Dr. Richard Chandler, of the Protection and Survival Laboratory, FAA Civil Aeromedical Institute was instrumental in developing the brace for impact seating positions used by government and commercial aviation industry. Based on his work, the following brace for impact positions are being implemented:

Forward facing seats:

- Press your lower torso firmly against the seat back.
- Lower your chin to chest.
- Grip the seat edge with your hands or place them under your legs. **Do not grasp the restraint harness.**





Rear facing seats:

- Press your lower torso firmly against the seat back.
- Place your head back against the head rest or bulkhead.
- Grip the seat edge with your hands or place them under your legs. **Do not grasp the restraint harness.**



Side facing seats:

Unfortunately, no formidable brace for impact position has been developed for this particular seat configuration. Based on the anti-flail and secondary impact philosophies previously described, it's recommended that you lean toward the front of the aircraft and brace your upper torso and head against whatever might be contacted, or moving the head in the direction of impact to reduce flailing.

This information supersedes guidance within **DOI Operational Procedures Memorandum (OPM) 13-48 (OPM)** and the **2013 Interagency Helicopter Operation Guide (IHOG), Ch. 10, Exhibit 10-1 (IHOG)**. Updates to these documents will be made to reflect the new procedures during its next revision cycle. Additionally, current aviation safety courses covering helicopter impact positions will soon be revised as well.

References:

- *FAA AC 91-32B Safety In and Around Helicopters, June 1997
- *FAA AC 121-24C Passenger Safety Information Briefing and Briefing Cards, Appendix 4, 7/23/03
- *Transport Canada Commercial and Business Aviation Advisory Circular 0155, May 1999
- *Dr Richard Chandler – Protection and Survival Laboratory, Civil Aeromedical Institute, FAA, February 1988
- *Flight Safety Foundation - Cabin Crew Safety, Positions Brace Passengers for Impact To Reduce Injuries and Fatalities, January/February 1988
- *Air Carrier Operations Bulletin 1-94-17, Brace for Impact Positions

/s/ Keith C. Raley

Keith C. Raley
Chief, Aviation Safety
and Program Evaluation

/s/ Gary Sterling

Gary Sterling
Acting Branch Chief, Aviation Safety
Management Systems