

## FH Rev 12

### Why this? Why now?

- I. **Background** –Alaska Airlines, and the airline industry as a whole, have enjoyed an unprecedented safety record. Many other industries continue to view commercial airlines as leaders in adapting to growth and change while at the same time balancing safety and efficiency. How is this done? Principally because we have never rested on our laurels believing we have achieved an *adequate* level of safety. Rather, we have engaged in a tireless and relentless pursuit of refinement that says “we can and must do better.” The result is our Standard Operating Procedures (SOP) continue to be, adapted and improved. Typically, the aviation system adapts and improves incrementally. Occasionally more significant change is required when human factors, industry trends, mounting data, recent incidents/accidents and other reliable indicators demand a response. Flight Handbook Revision 12 is Alaska Airlines’ proactive response to internal and external indicators pointing to the need for significant, timely, and necessary change.
- II. **Primary Drivers** – The following six indicators were used by the Flight Operations department to develop Flight Handbook Revision 12:
  - A. **Alaska Airlines 2013 Line Operational Safety Audit (LOSA)**
    - a. Procedural alignment – Our recent LOSA revealed a discrepancy between our policy and procedures and our line practices with regard to our briefings and monitoring/crosscheck. For example, the data showed an increase in incomplete briefings and an associated increase in consequential errors. Flight Handbook Revision 12 addresses this and other discrepancies by revising the format of our briefings to promote greater alignment with line practices and by incorporating policies that clarify and refine monitoring expectations and duties.
    - b. Line Pilot Interviews – Post-LOSA observation pilot interviews included the question, “What would you change?” “The content and quality of our departure and arrival briefings” was a consistent response. Flight Handbook Revision 12 addresses that concern.
  - B. **Alaska Airlines ASAP, FOQA, AQP program data** – In the past few years our own incidents and safety data trends revealed a need to review, and in some cases improve, our policies and procedures. Such incidents include near misses, runway incursions, unstable approaches, un-briefed threats, and un-trapped errors. In response, Flight Handbook Revision 12 will simplify some of our normal checklists, reduce workload in high risk environments, set clearer expectations for monitoring and crosschecking, and promote more relevant briefings.
  - C. **Alaska Airlines Instructor Pilot Feedback** – Throughout instructor recurrent in 2014, each class of instructors was asked for an evaluation of our crew briefings. The following were some of the deficiencies highlighted regarding the content and quality of crew briefings and how those briefings have directly and indirectly affected monitoring performance:
    - a. Over-verbalization. We simply talk too much. The goal for Flight Handbook Revision 12: reduce the amount of extraneous crew discussion and unnecessary *verbal* cross-verification (move toward *dual-independent verification* where appropriate) with the aim of increasing attention levels across the entire briefing. This change is supported by the human factors research mentioned below.
    - b. One-sided. The prevailing notion of “my leg”, “your leg” has not promoted the sense of teamwork desired for flight operations. Flight Handbook Revision 12 promotes an “our leg” mentality by increasing the sense of *crew* involvement and ownership in the briefing by having the PM initiate a crew discussion of relevant threats followed by the PF laying out a plan to manage those threats.
    - c. “Check-off” list mentality. The briefing prior to the UPS Birmingham accident, like most briefings at Alaska Airlines, covered the required briefing items listed in the Flight Handbook. What was missing from the UPS briefing was a crew discussion addressing the threats that would ultimately result in a fatal accident. Since no two departures or arrivals are the same, neither should the briefings that precede them be. Our briefing procedures should better promote this kind of

adaptation. To this end, the goal for Flight Handbook Revision 12 is to shift the focus from the PF simply covering a routine list of required items to a departure or arrival-specific crew discussion. Relevant **threats** will be addressed with applicable management strategies for each, followed by a **plan** that is appropriately detailed according to the specific circumstances and variables at hand.

- D. **Human Factors science** – Flight Handbook Revision 12 is supported by research from several renowned experts in the field of human factors. These include Dr. James Reason, the accepted aviation expert on human error; Dr. Daniel Kahneman, Nobel Prize winner and best-selling author of *Thinking Fast and Slow*; and Dr. Gary Klein, pioneer in Recognition Primed Decision-making, to name only a few. Specifically, the Flight Handbook Revision 12 departure and arrival briefing format promotes error reduction through a focus on relevant threats and increases the probability of successful decision-making under rapidly changing conditions for both the PF and the PM.
- E. **Industry-wide incidents, accident, and trends** – Since the mid-1990s industry studies and significant accidents have continued to reveal a need for improved monitoring on the flight deck. In 2004 the NTSB promoted the idea of changing the title “PNF” to “PM” as a way to send a vital message that monitoring matters. The recent UPS accident in Birmingham, AL in 2013 was the latest in a string of accidents that included monitoring failure as a principle causal factor. Remarkably, our 2013 LOSA revealed that nearly 70% of mismanaged automation errors occurred during the descent/approach phase and many times involved monitoring errors/confusion with RNAV arrival procedures, VNAV descent programming and MCP pilot selections. Flight Handbook Revision 12 attempts to address the need to improve monitoring on the flight deck by not only clarifying monitoring duties, but also linking crew monitoring performance to the quality and relevance of the departure and arrival briefings.
- F. **Industry-wide best practices** – We looked to the following sources to refine our normal operations:
  - a. Boeing/other airlines. We have revised some of our normal procedures and normal checklists based on input from Boeing and other 737 operators. We reduced the number of items in several normal checklists based on these inputs and in the case of the “Instrument Crosscheck (Scan),” “Taxi Brief,” and “Taxi Checklist,” we removed them altogether.
  - b. NASA Ames Research Center. The philosophy of the development of Flight Handbook Revision 12 changes to policy, procedures and ultimately, practices, followed guidance from NASA scientists Dr. Asaf Degani and Dr. Earl L. Wiener and their publication, *The 4P’s of Flight Deck Operations*.
  - c. The Flight Safety Foundation Active Pilot Monitoring Working Group (APMWG). We have adopted monitoring and cross-checking recommendations from the APMWG consisting of leaders from the FAA, NTSB, NASA, ALPA, and numerous airlines representatives. The most significant change is the clarification of monitoring duties for both the Pilot Flying (PF) and the Pilot Monitoring (PM) based on level of flight risk consisting of the following:
    - i. Clearly defining PF and PM primary and secondary monitoring duties
    - ii. Establishing guidelines delineating low, medium, and high risk phases of flight
    - iii. Setting expectations for crew monitoring duties according to level of flight risk

### III. Supporting Initiatives –

- A. Electronic Paperwork – Now both pilots have timely access to the flight paperwork which will serve to promote better crew integration. Flight Operations is currently working on an enhanced version of the electronic flight paperwork including innovations that will further highlight relevant threats for each leg and become a highly effective briefing tool.
- B. Crew Debriefing – The Training Department will continue ongoing efforts to normalize crew debriefing:
  - a. Training – foster self-discovery through **crew-initiated debriefing**, facilitated by IPs, during Qualification and Continuing Qualification training events, and on Line Checks.
  - b. Line Flying – encourage and promote debriefing to improve crew team performance not only over the course of a trip but also to improve individual performance over time.
- C. Professional Development Meeting (PDM) CRM-TEM. As a result of line pilot feedback we will consider incorporating a CRM-TEM discussion into future PDMs to promote CRM-TEM proficiency.