Flawed Report

BY ERIK REED MOHN

Questions about the overrun accident in Toronto went unanswered.

In December 2007, the Transportation Safety Board of Canada (TSB) published its final report on the Air France A340 accident at Toronto in August 2005 (*ASW*, 2/08, p. 40). The crew was faced with rapidly deteriorating weather during the approach, deviated above the ILS glideslope about 200 ft above ground level (AGL), crossed the threshold of Runway 24L 40 ft high, entered an area of heavy rain during the flare and landed 3,800 ft (1,159 m) down the 9,000-ft (2,744-m) runway. This left the crew with 5,200 ft (1,585 m) of available stopping distance. With a 10-kt tailwind and a wet runway, this was not enough; the aircraft ran off the end of the runway at about 80 kt.

International Civil Aviation Organization (ICAO) Annex 13, *Aircraft Accident and Incident Investigation*, and *Manual of Aircraft Accident Investigation*, Doc 6920-AN/855/4, which is currently being replaced by Doc 9756-AN/965, are assumed to have guided the development of this report.

Annex 13 says, "The sole objective of the investigation shall be the prevention of accidents and incidents." Doc 6920 says the purpose of the inquiry is "to determine the facts, conditions and circumstances pertaining to the accident with a view to establishing the probable cause thereof, so that appropriate steps may be taken to prevent a recurrence of the accident and the factors which led to it." Doc 9756 expands on this, saying, "A well-conducted investigation should therefore identify all immediate and underlying systemic causes of an accident and recommend appropriate safety actions aimed at avoiding the hazards or eliminating the deficiencies. … Thus, a properly conducted accident investigation is an important method of accident prevention."

The understanding of this accident hinges in a large part on understanding what the crew actually thought and did, and a transcript of the cockpit voice recorder (CVR) is absolutely essential. This is especially true since the report says that several standard calls were missed and that nonstandard procedures were applied. For example, the report says Air France procedures require the captain to call either "we continue" or "we go around" at decision height (DH). Was this done? We do not know. Although Doc 6920 says that voice recorder readouts "are generally attached as an appendix" to an accident report, this report has no CVR transcript at all. Yet, the report says, "All relevant data were transcribed in full."

The readouts of the flight data recorder, in Appendix F of the report, require a specialist to interpret and should have been expanded and explained in more detail.

In noting Air France's stabilized approach criteria, the report says, "There is no requirement to monitor the localizer and glideslope below 200 ft AGL." However, later on, the report states, "From then on (below the DH), the deviations were below the threshold at which the PNF [pilot not flying] was required to make a call regarding the deviations." These statements are presented as facts but appear to be mutually incompatible and contradictory, and are questionable when compared with Air France's standard operating procedures, which unambiguously state: "After passing decision height, if the visual references, the trajectory or the position of the aircraft evolve in a fashion to compromise the successful completion of the approach or landing, the captain must initiate a go-around or missed approach or aborted landing." I think it is safe to say that the trajectory of this flight evolved in a fashion that compromised the successful completion of the approach and landing. Should the PNF not have called this out?

According to the report, the crew became "overwhelmed" and "task-saturated" after crossing the threshold but were also "committed to landing and believed that their option to go around no longer existed." There is no discussion of why they believed they could not go around, when Air France had taught them that a go-around is safe until the thrust reversers have been deployed.

The A340 has an automatic voice callout of altitude below 50 ft. It also has a voice command, "Retard," if the

thrust levers are not retarded to idle below 20 ft in manual landing conditions. These things are not mentioned and discussed in the report.

The facts detailed above add up to an approach that became badly unstabilized and was carried through to a very long landing, resulting in a touchdown at a point where stopping on the remaining runway was impossible. Yet this is not even mentioned in the conclusions section of the report.

ICAO Doc 9756 says that "blame or liability might sometimes be inferred from the [report's] findings. When such is the case, it is essential that all the causes established be clearly presented in the report. To do otherwise would jeopardize the objective of the investigation, which is the prevention of accidents and incidents." Furthermore, it states, "Deviations from the accepted norms of compliance with regulations and procedures should be clearly identified when relevant to the accident … in order to explain the safety implications of the deviation." It also states, "For a contravention to be included as a cause, it should be clear that complying with the regulation or procedure could have prevented the accident or lessened the consequences of the accident."

To me, at least, it is obvious that the contraventions documented in this report are the primary causes of the accident. Complying with the regulations and procedures applicable to this flight would, without doubt, have prevented the accident. In not including the documented contraventions as causes, the report fails miserably. The fact that the relevant Air France procedures and regulations requiring a go-around were ignored by the crew is not even mentioned in the conclusions section of the report. Had a proper go-around been made, this accident would not have happened. Because of the fuel situation, the crew would have had to divert to their alternate, and what would have happened there is impossible to know. But the window they flew through to disaster at Toronto would have closed.

While I am sure that the TSB intended to comply with Annex 13 and other relevant documents, the weaknesses in this report render it almost useless as a tool for learning and preventing future accidents of this kind.

The main problem with this report's misleading and incomplete conclusions is that they prevent a serious discussion of what can be learned from this tragedy and how this kind of accident can be prevented. If this report is allowed to stand as is, it will cheapen the impact of investigation reports everywhere. The best thing to do is to withdraw the report and reopen the investigation in accordance with paragraph 5.13 of Annex 13. ●

Erik Reed Mohn, a fellow of the Royal Aeronautical Society, is an A340/330 captain for SAS. He was co-chair of the FSF ALAR Operations and Training Working Group.

InSight is a forum for expressing personal opinions about issues of importance to aviation safety and for stimulating constructive discussion, pro and con, about the expressed opinions. Send your comments to J.A. Donoghue, director of publications, Flight Safety Foundation, 601 Madison St., Suite 300, Alexandria VA 22314-1756 USA or donoghue@flightsafety.org.