Transportation Safety Board of Canada
Bureau de la sécurité des transports du Canada

REASSESSMENT OF THE RESPONSE TO TSB RECOMMENDATION A16-11

Pilot proficiency check standards

Background

On 31 May 2013, at approximately 0011 Eastern Daylight Time, the Sikorsky S-76A helicopter (registration C-GIMY, serial number 760055), operated as Lifeflight 8, departed at night from Runway 06 at the Moosonee Airport, Ontario, on a visual flight rules flight to the Attawapiskat Airport, Ontario, with 2 pilots and 2 paramedics on board. As the helicopter climbed through 300 feet above the ground toward its planned cruising altitude of 1000 feet above sea level, the pilot flying commenced a left-hand turn toward the Attawapiskat Airport, approximately 119 nautical miles to the northwest of the Moosonee Airport. Twenty-three seconds later, the helicopter impacted trees and then struck the ground in an area of dense bush and swampy terrain. The aircraft was destroyed by impact forces and the ensuing post-crash fire. The helicopter's satellite tracking system reported a takeoff message and then went inactive. The search-and-rescue satellite system did not detect a signal from the emergency locator transmitter (ELT). At approximately 0543, a search-and-rescue aircraft located the crash site approximately 1 nautical mile northeast of Runway 06, and deployed search-and-rescue technicians. However, there were no survivors.

The Board concluded its investigation and released report A13H0001 on 15 June 2016.

TSB Recommendation A16-11 (June 2016)

In this occurrence, the captain's pilot proficiency check (PPC) was conducted, based on the approved check pilot's (ACP) belief that, rather than assuming pilot-in-command (PIC) duties immediately, he would be employed as a first officer until he gained some recent operational experience in the air ambulance role. Although the ACP selected "first officer" on the captain's PPC form, the company assigned the occurrence captain to carry out PIC duties in a very demanding role and from a very challenging remote location. In this instance, the only recourse for the ACP would have been to assess the occurrence captain's PPC as a fail. There is currently no way for an ACP to restrict a pilot to second-in-command (SIC) duties based on the ACP's assessment that the pilot is not ready to act in a PIC capacity, potentially as captain of a multi-engine, multi-crew aircraft responsible for the safe completion of demanding night or instrument flight rules (IFR) flights, or both.

The current PPC standards, and associated PPC schedules, for *Canadian Aviation Regulations* (CARs) Subparts 702, 703, 704, and 705 operators make little distinction between the respective PPCs conducted on captains versus first officers. The aeroplane PPC schedules for Subparts 702, 703, 704, and 705 identify that it may not be possible to conduct some taxi checks from the SIC

position. Those for Subparts 704 and 705 also identify differing engine-out landing requirements for the PIC versus for the SIC. For helicopter pilots, the PPC schedules for Subparts 702, 703, and 704 note only that pilots occupying the SIC position may not be able to complete all of the taxi checks identified in the PPC schedule. With the exception of these small variances, both aeroplane and helicopter pilots are required to meet the same performance standards, as per their respective subpart, regardless of whether they will be assigned to captain or first officer duties following the PPC. There is no requirement for captains to demonstrate a higher degree of proficiency, commensurate with their increased responsibilities.

In addition, the PPC standards do not take into account the unique challenges associated with the potential for acting as captain of a multi-engine, multi-crew aircraft in demanding IFR or night flight conditions, or both. Therefore, despite the considerable difference in responsibilities between a captain and first officer, both pilots are tested to the same standard, which allows up to 4 major deviations from the qualification standards. A major deviation may be assessed when "aircraft handling is performed with limited proficiency" or when "technical skills and knowledge reveal limited technical proficiency and/or depth of knowledge". Once a pilot passes a PPC on a particular aircraft type, that PPC is transportable if the pilot moves to a different company that operates that same aircraft type.

Currently, the risk associated with employing a pilot as a captain is managed through internal company policies and insurance or contractor requirements. However, in many cases, companies rely on the regulations to determine the minimum requirements for employment in a PIC position. As seen in this occurrence, Ornge RW was aware that the captain had encountered problems during the PPC and that "first officer" had been selected on the PPC form. However, since there is only one PPC standard for Subpart 703 helicopter pilots, and based on the company's assessment of his experience, Ornge RW elected to employ the occurrence captain as a PIC without any additional training or supervision. As a result, on the night of the occurrence, the captain was not adequately prepared to carry out his duties.

In other jurisdictions, this issue has been recognized. For example, in the United States, Title 14 of the *Code of Federal Regulations*, Section 61.58, specifies that a pilot must complete a PIC proficiency check in order "to serve as pilot in command of an aircraft that is type certificated for more than one required pilot flight crewmember or is turbojet-powered". A pilot who will be acting as SIC (i.e., first officer) is not required to complete the same PIC proficiency check. Instead, there are less stringent requirements outlined in the *Federal Aviation Regulations* (FARs) that must be met for a pilot to be permitted to act as SIC aboard an aircraft type certificated for more than one required pilot flight crew member. There is no such distinction in Canada for crew members who will be filling a SIC position.

The current PPC standards do not ensure that captains possess an adequate level of proficiency to safely carry out the operational duties of a PIC. As a result, there is a risk that Subparts 702, 703, 704, and 705 pilots will continue to be assigned to PIC duties without having first demonstrated an adequate degree of proficiency in a captain capacity.

Therefore, the Board recommended that

> The Department of Transport establish pilot proficiency check standards that distinguish between, and assess the competencies required to perform, the differing operational duties and responsibilities of pilot-in-command versus second-in-command.

TSB Recommendation A16-11

Transport Canada's response to Recommendation A16-11 (September 2016)

Transport Canada agrees with the recommendation. In fact, independent of the tragic accident, TC conducted a thorough review of the Approved Check Pilot (ACP) Manual this past year and is planning to publish a revision before spring 2017.

The 10th edition of the ACP Manual will have a consolidated and strengthened set of guidance on non-technical skills to be assessed. Under the 4-Point Marking Scale Leadership and Managerial Skills will be added as one of four non-technical (CRM) skills. The sub elements of this skill assessment are as follows:

1. Use of authority and assertiveness;
2. Providing and maintaining standards;
3. Planning and coordination; and
4. Workload management.

A draft copy of the manual will be provided to the TSB in the fall 2016.

Transport Canada Update (December 2016)

Independent of the TSB investigation and recommendation A16-11 stemming from the Ornge Accident Report, a thorough review of the Approved Check Pilot (ACP) Manual over the last two years identified a general weakness in guidance regarding the difference between a pilot-in-command PPC and a second-in-command PPC. Several enhancements to the 10th edition were proposed as a result. Upon reviewing TSB recommendation A16-11, an additional change was incorporated that quantifies the distinction between a pilot-in-command and second-in-command PPC.

The following are excerpts from the 10th edition of the ACP Manual which is due to be published in 1st quarter of 2017.

Section 6.39 (3) - Downgrading a PPC

> Under no circumstance will an unsuccessful PPC attempt, where the candidate has been assigned the role of pilot-in-command, be considered a successful second-in-command PPC attempt.

Section 6.6 (8)(a) - PPC Simulator / Candidate Seat Assignment

> The candidate will occupy the pilot seat associated with the candidate's respective duty position.

Section 6.27 (4)(b)(i) – Flight Check Briefing – PPC / Crew Duty Position and Seat Assignment

> Although there is no differentiation in performance expectations, the candidate's crew duty position (i.e., pilot-in-command, second-in-command) must be established.

Section 6.38 (1)(a) & (2)(a) - Unsuccessful Flight Check Attempt / Second-In-Command versus Pilot-In-Command

A flight check will be assessed as unsuccessful under one of following conditions:

Second-In-Command

(i) one flight check item assessed a mark of one (1); or

(ii) five flight check items assessed a mark of two (2).

Pilot-In-Command

(i) one flight check item assessed a mark of one (1); or

(ii) three flight check items assessed a mark of two (2).

TSB assessment of Transport Canada's response to Recommendation A16-11 (December 2016)

TC's response indicates that it will be publishing a revision to the Approved Check Pilot (ACP) Manual before spring 2017. That revision will include additional guidance on the evaluation of non-technical skills. In addition, the Manual is also being revised to distinguish between a PIC PPC and an SIC PPC. In particular, the revisions will establish a requirement to be evaluated based on a respective duty position, and the pass/fail threshold will be higher for a PIC than it is for an SIC.

The TSB is encouraged by these proposed amendments that, when fully implemented, will significantly reduce the safety deficiency associated with this recommendation.

Therefore, the response to the recommendation is assessed as **Satisfactory Intent**.

Transport Canada's response to Recommendation A16-11 (October 2017)

TC agrees with the recommendation.

The revised ACP Manual was published on 04 June 2017. The manual now calls for assessments of technical skills which are measured by assessing Aircraft Handling and Technical Knowledge and Skills. The Check Pilot also assesses non-technical skills: Cooperation, Leadership and Management Skills, Situational Awareness and Decision Making. All skills are marked on a four-point scale defined as follows:

(a) Effective - Successful in producing a desired or intended result - Score 4.

(b) Acceptable - Satisfactory or allowable - Score 3.

(c) Poor - Worse than is usual, expected or desirable - Score 2.

(d) Unacceptable – Not satisfactory or allowable - Score 1.

The Manual, in Chapter 6 specifies that a flight check attempt will be graded unsuccessful according to the following criteria:

(a) Second-In-Command

(i) one flight check item assessed a mark of one (1); or

(ii) five flight check items assessed a mark of two (2).

(b) Pilot-In-Command

(i) one flight check item assessed a mark of one (1); or

(ii) three flight check items assessed a mark of two (2).

(c) Cruise Relief Pilot

(i) one flight check item assessed a mark of one (1); or

(ii) three flight check items assessed a mark of two (2).

TC believes that this Recommendation has now been fully met.

TSB reassessment of Transport Canada's response to Recommendation A16-11 (March 2018)

The Board is pleased with the quick action taken to revise the Approved Check Pilot (ACP) Manual, which was published on 04 June 2017. It now provides a clear distinction between the competencies, operational duties, degree of proficiency, and responsibilities between a pilot-in-command (PIC) and a second-in-command (SIC). When conducting a pilot proficiency check (PPC), the manual's performance standards and assessment criteria address the differing operational duties and responsibilities of a PIC versus an SIC.

The Board believes that the distinction between the respective PPCs for a PIC and SIC, now outlined in the revised ACP Manual, will substantially reduce the risk associated with the safety deficiency identified in Recommendation A16-11.

Therefore, the response to Recommendation A16-11 is assessed as **Fully Satisfactory**.

Next TSB action

This deficiency file is **Closed**.