ATTACHMENT 10

EMERGENCY FLOTATION SYSTEM GROUP
FACTUAL REPORT

NTSB No. ERA18MA099

Record of conversation of the interview with the Federal Aviation Administration Los Angeles Aircraft Certification Office project manager for Supplemental Type Certificate No. SR00470LA
(5 Pages)

Interviewee:	Huyen Thanh "Tracy" Ton, FAA Los Angeles Aircraft Certification Office
Representative:	Matthew Smith, FAA
Date / Time:	October 23, 2018 / 1330 eastern daylight time
Location:	FAA Washington DC Headquarters
Present:	Chihoon Shin (NTSB); Jason Fedok (NTSB); Matthew Rigsby (FAA)

When asked about her professional background, Ms. Ton state she has a bachelor of science in electrical engineering from California State University. After graduation, she had worked at McDonnell-Douglas for about 9 years. She joined the Federal Aviation Administration (FAA) Los Angeles (LA) Aircraft Certification Office (ACO) in 1995 and has worked at the LA ACO since. She was hired into the LA ACO as an Aviation Safety Engineer (ASE) specializing in the cabin safety, mechanical, and environmental branch. She served a dual role of both the project manager (PM) and an ASE, for her specialized branch, in the LA ACO certification review and approval of supplemental type certificate (STC) No. SR00470LA for the installation of emergency floats on certain AS350-series helicopters.

When asked about the role of the PM, she stated that when a STC application is submitted to the ACO, the PM role to oversee the project is assigned by the branch manager. This assignment is based on which of the office disciplines are applicable to the STC application; for example, if the STC application is for an airframe modification, then the structures ASE usually becomes the PM. Once a PM is assigned, the PM will send out requests for specialists to populate the project team. Based on the STC application, each branch will review the description of the modification and will assign team members as appropriate. She stated the PM makes no technical decisions regarding the STC application, but is primarily responsible to help team members get the information needed for their role in the certification review of a modification. It is typical for a PM to also be an ASE in the same project.[1]

At the time of the application that led to STC No. SR00470LA, the company name was Apical. The name later changed to Dart. She recalled the application for the emergency float system was submitted in 1996 and the first approval for the STC was issued in 1997. When asked to describe the application and review process, she recalled that FAA Form 8110-12 would need to be submitted along with a certification plan that proposed a list of *Code of Federal Regulations* (CFR), to which the applicant would need to show compliance, as well as a proposed list of methods of compliance with the proposed list of CFRs. A list of designated engineering representatives (DER), who reviews compliance with the CFRs on behalf of the FAA, is also provided. The branch manager assigned Ms. Ton as the PM for this project and subsequently a certification review team was formed. The team included ASEs for airframe; mechanical and cabin safety; a flight test engineer; a flight test pilot; an inspector for manufacturing supplied by an FAA Manufacturing Inspection District Office (MIDO); and an inspector from the FAA Aircraft Evaluation Group (AEG). At the time, a project specific certification plan (PSCP), required to be used today, did not exist. The team reviewed the documents submitted along with Form 8110-12, and if acceptable the team would give the STC applicant the "go ahead" to follow their proposed plan. Each ASE and inspector would review the data provided by the applicant and, if acceptable, concur with compliance with the applicable CFRs. At the conclusion of the review, if all the required documents complies with the applicable CFRs, the LA ACO would grant the STC.

[1] FAA Order 8110.4C provides procedures for approval of type design data, as well as changes to approved type design data, for aircraft, engines, and propellers. The order applies to FAA personnel as well as persons and organizations associated with the certification process.

Regarding the involvement of the AEG, Ms. Ton stated the applicant is responsible in preparing the instructions for continued airworthiness (ICA) according to the format required by the CFRs. When the PM receives the proposed ICA from the applicant, it is forwarded to the AEG inspector for review. If the AEG inspector reviews and accepts the proposed ICA, the AEG will send a memo to the ACO, which the latter uses as a record of concurrence with the proposed STC. She stated that the other team members involved can review the ICA for knowledge only, but the responsibility to accept the ICA lies with the AEG inspector. She did not know if the AEGs reviews the ICA for anything beyond what is required by the CFRs. When asked if she reviewed the proposed ICA for STC No. SR00470LA, she recalls that she received an acceptance of the proposed ICA from the AEG without comments. Additionally, she recalled there were inspection intervals within the ICA, but did not specifically recall the intervals.

When asked if there were differences in the STC application review and approval process, between the time STC No. SR00470LA was granted and the current process, she noted that there have been notable improvements made with the current process. Previously, each individual applicant could bring a certification plan in any format. Currently, a PSCP, which defines all items required for project certification, is required to be submitted with the STC application. Additionally, project management is risk-based in that there are considerations for the type of modification requested and the history of STCs approved for the applicant. The ACO has a software tool where you can input risk-based data and the tool would provide feedback upon which the ACO can identify the areas of the certification project that requires comprehensive FAA involvement and the areas in which applicant can work independently and subsequently provide results to the FAA.

When asked if any guidance related to emergency float systems was referenced during the review of the Apical float system (STC No. SR00470LA), she recalled that in 1996, there was no relevant guidance published and that review of the proposed design was based on the requirements contained in CFR Part 27. She clarified that the team would review the whole of Part 27 to decide which regulations were required for the emergency float system modification. Additionally, she recalled there was coordination with the FAA Rotorcraft Directorate on the Apical float system project. Subsequent the approval of the Apical float system (STC No. SR00470LA), in 1999 the FAA published relevant guidance in Advisory Circular (AC) 27-1B under Miscellaneous Guidance (MG) 10. She stated MG 10 reflects the items they reviewed during certification of the Apical float system. When asked if she participated in the formulation of MG 10 in AC 27-1B, she said she did not.

When asked if there was coordination with other ACOs who may have approved similar systems, she stated that at the time of STC No. SR00470LA, there was no coordination with other ACOs but there was coordination with the [LA] ACO. All team members would have a chance to review the list of regulations the applicant proposed. As the PM, she was collecting and coordinating feedback between the ACO team members and the applicant. She did not recall if the ACO team had proposed or required inclusion of certain CFRs that were not contained within the list of CFRs the applicant originally proposed as part of the Apical float system project. Currently, the ACOs utilizes a system called a certification project notification (CPN) in which the ACO receiving an application submits a form into the CPN system which is transmitted to the accountable directorate and other ACOs and provides a means for those ACOs to provide feedback, based on those ACOs experiences on a similar project, and awareness of what the other ACOs are working on.

When asked if she worked on the certification review and approval of any other helicopter float system, she stated that at one time she worked with Robinson Helicopter Company on a float system for the R44 helicopter. She stated she worked on the project for about a year and was subsequently transferred to a different assignment while another engineer was assigned to the R44 float system project.

When asked about her history of STC approvals while at the LA ACO, she recalled working on about 100 STC projects in total with about 20 projects at any given time, though they would not be all on the same schedule and thus not simultaneously "active" projects. When asked if she recalled how many STC applications from Apical (and subsequently Dart) submitted to the LA ACO in which she was involved in the review and approval, she stated that she had worked with Apical since 1996 until about 2003; from 2003 to 2015, another ASE took over projects from Dart. In the timeframe she had worked with Apical/Dart, to the best of her recollection she worked on 5 basic STC projects, 10 in total if including amended STC projects.

When asked if she witnessed any testing related to STC No. SR00470LA, she stated she participated in the drop test for the float system where the floats were dropped into a pool from a height of 13 inches. The purpose of the test was to measure the impact of the floats and how much they immersed into the water. She recalled that Apical prepared a test plan, including how the test would be executed, that a DER reviewed and the FAA accepted. She recalled that the test had a pass/fail criteria, and in the drop test the float system had passed all required criteria. When asked which team member would review the float activation system, she stated that it would be assessed by the whole team as different team members, such as structures, mechanical, and flight test team members, had a relevant interest in the float activation system. She believes, but could not fully recall, that the activation system was tested and showed compliance with agreed upon pull forces. When asked about what requirements existed for the activation system handle pull forces, she stated that there were neither CFR requirements nor guidance on pull forces. She recalled Apical had proposed 30 pounds for a pull force limit and that the LA ACO had accepted it. She stated that the pull force was discussed with the transport airplane directorate; in Part 25, a 30 pound limit was referenced for the emergency evacuation slide activation girt bar. However, no CFR requirements for pull forces are referenced for helicopters.

When asked about specific persons involved in the certification review of the Apical float system (STC No. SR00470LA), she recalled either Jim Weber or Chip Adams was the LA ACO flight test pilot who would have flown with the Apical float system to check the helicopter handling qualities with the emergency floats stowed and inflated. She recalled they would begin the flight with the emergency floats stowed and perform the emergency float inflation in flight. She recalled Don Hitzfield was the engineering point of contact for Apical; he has since passed away. Around 1996 or 1997, Apical had applied for a company DER; Mr. Hitzfield was a DER candidate-in-training and an Apical employee. At the time, a consultant DER would oversee the company candidate DER, and the former would provide feedback to the FAA on the performance of the latter. Lastly, she recalled Scott Odle was the LA ACO flight test engineer assigned to this Apical float system project.

When asked if she recalled whether the flight test pilot had concerns with the pull forces or the ergonomics of the Apical float system activation system handle, she did not recall if there were any. She stated that after a type inspection authorization (TIA) certification flight test was conducted, the company would have to submit a flight test report. The LA ACO flight test pilot and flight test engineer would review the applicant's flight test report and prepare a type inspection report (TIR). She stated the TIR, and other

files gathered by the LA ACO team, would be “centrally filed” in an offsite location at the conclusion of the project after the STC was granted.

When asked about the recordkeeping responsibility for STC projects, she recalled that previously there was no system set up for recordkeeping in that each person had their own way of managing their project and that each PM would keep their own records until the end of the project. Currently, with the PSCP accepted by the team, the PM or the office administration (OA) staff will assign a correspondence number to each proposed compliance document and would document the correspondence into a system which will track the person responsible in responding to the correspondence. When asked to describe the record retention responsibilities of the STC holder, she stated that the STC applicant was responsible to retain all data and records related to the STC project, but could not comment whether Apical had a corporate record retention policy. She also stated that once an STC has received approval from the FAA, if the STC holder requests a change to the STC, whether minor or major, the review of the change focuses on the change itself and does not reassess the base STC configuration which was previously approved.

When asked about the STC holder’s responsibility to notify the ACO regarding reported anomalies with fielded STCs, she stated that it is required that the STC holder report to the ACO of any malfunction, failure, or in-service difficulty reported by an operator. Furthermore, a verbal report by the STC holder is required within 24 hours of receiving a report of an anomaly; the verbal report is followed up with a written report. When asked if each STC has an individual at the ACO that is assigned as a point of contact for this required reporting, she stated that there is not an individual, but that the ACO is the point of contact. She did not recall receiving any feedback from Apical/Dart for any reported anomalies regarding STC No. SR00470LA. She stated that she knew STC No. SR00470LA was modified (after initial STC approval) to incorporate a crossfeed tube. She stated this change was based on similarity with another STC involving the same aircraft model (AS350-series helicopter). Once the other STC received the design approval with the crossfeed tube, it was incorporated into STC No. SR00470LA based on similarity. She believed an operator had reported asymmetric inflation of a float system, and recalled that the possibility of asymmetric inflation drove the design modification to incorporate the crossfeed tube into STC No. SR00470LA. She did not recall any testing on STC No. SR00470LA related to incorporation of the crossfeed tube modification. When asked if testing is required when an STC is modified based on similarity to another STC modification, she stated that approval via similarity is only allowed if testing was performed on the same model aircraft. If the ACO determines there is similarity of the STC design on the same model aircraft, then the substantiation data for the testing of one STC can be transferred to another STC of similar design on the same model aircraft. However, if the STC design is similar but it is on different models of aircraft, then the applicant would need to substantiate the modification based on testing or analysis.

When asked if there are definitions of occurrences that are required to be reported back to the ACO, she stated that 14 CFR 27.1301 states that a design has to fulfill the intended function of the system, and if it does not then it is considered anomalous and reportable. When asked if the FAA had a definition of the intended function of an emergency float system, at the time of the review of STC No. SR00470LA, she stated that the FAA reviewed the system for the intended function of the system versus the nomenclature of the system. For example, the intended functions that were reviewed would be whether the occupants would evacuate the aircraft after landing; whether the floats would be stowed and inflate when commanded; whether the floats would be stowed at takeoff, landing, and flight or if they would be fixed floats. There would be different requirements depending on the type of intended function.

When asked how many persons were in her office, she stated she had 10 people in her section and the whole office had about 50 engineers. When asked how projects were assigned in the office, she stated that when a new application is received, three factors which determine who is assigned to the project are 1) expertise, 2) how many companies the person oversees, and 3) their current workload.

The interview ended about 1515 eastern daylight time.