SUMMARY OF THE SEVENTY-FOURTH MEETING

RTCA SPECIAL COMMITTEE 135
ENVIRONMENTAL CONDITIONS AND TEST PROCEDURES FOR AIRBORNE EQUIPMENT

The Seventy-fourth meeting of RTCA/SC-135 was held April 23rd through 26th, 2019 at RTCA Headquarters in Washington DC.

The following were in attendance:

Bradley Green, SC-135 Chairman  EaglePitcher Technologies
Jacob VanDyke, SC-135 Secretary  Honeywell International, Inc.
Rebecca Morrison, Program Director  RTCA, Inc.

Patrick Andre  Andre Consulting, Inc.
Susan Beard  Rockwell Collins, Inc.
Massimiliano Bertoldi  CELAB SRL
Erik Borgstrom  Element Materials Technology
Jack Connelly  The Boeing Company
Nick Conquest  NIAR
Charlie Cooper  Collins Aerospace
William Donoghue  United Technologies Corporation
Mike Falzone  Garmin Ltd
Marsirlene Gohn  Teledyne Control
Brad Green  EaglePicher Technologies
Scott Hanaway  Astronautics Corporation of America
Jim Hatlestad  The Boeing Company
Terri He  The Boeing Company
David Jennings
David Kerr
Tim Lusha
Ivan Malizia
Joe Marotta
Evelyn Matheson
Jerome Mavier
Kyle McMullen
Milford, Brock
Scott Miller
Rebecca Morrison
Lee Nguyen*
Marc Poncon
Jack Prawica
Mario Rinaldi

Harlan Sharpe
Tim Steinbach*
Eric Stewart
Mark Stojkovich
Alan Thompson

Chuck Thompson
Randy Tsuchiyama
Jacob VanDyke
Gary Van Hoy
Merrill Vaughan
Jeffrey Viel

David Walen
Ken Webb
David Zimmerman

Rockwell Collins, Inc.
Garmin Ltd.
D.L.S. Electronic Systems
EMBRAER
Honeywell International
The Boeing Company
Airbus
NIAR
Eagle Management, LLC
RTCA
FAA
Airbus
D.L.S. Electronic Systems
United Technologies Corporation
NIAR
Collins Aerospace
Rockwell Collins, Inc.
Elite Test
Element Materials Technology
Elite Test
Teledyne
Honeywell International
Honeywell International
The Boeing Company
National Technical Systems
FAA
Rockwell Collins, Inc.
Spectrum EMC Consulting, LLC

* via Conference Bridge
The agenda for the meeting was as follows:

1. Chairmen’s Opening Remarks, Introductions.
2. Approval of Summary from the Seventy-Third Meeting – (RTCA Paper No. 163-18/SC135-719)
4. Review Schedule.
5. New / Unfinished Business
6. Establish date for next SC-135 Meetings.
7. Closing.

(Note: The following report is organized by Agenda Item, although some sections were conducted out of sequence to accommodate some members’ schedules.)

**Agenda Item 1  Chairman's opening remarks, Introductions, Recognize Federal Representative**

The plenary session of the Seventy-fourth meeting of RTCA/SC-135 was called to order at 7:15 AM on the 26th of April, 2019. Chairman Brad Green opened the meeting by welcoming those in attendance. Rebecca Morrison reviewed the RTCA Proprietary Information, membership policies and antitrust policy. Mr. Green reviewed the agenda for the meeting, and invited attendees in the room and those attending by conference bridge to introduce themselves.

**Agenda Item 2  Approval of the Summary from the Seventy-Third Meeting**

SC-135 Secretary Jacob VanDyke read the minutes from the 73rd meeting, RTCA Paper No. 163-18/SC135-719. Due to missing content on the Ground Station Document, approval of the minutes were postponed to the next meeting of SC-135.

**Agenda Item 3  Review Working Group Summaries**

The Working Group discussions were centered on the Change Proposals submitted for Revision H.
The Change Coordinators described Change Proposals which were reviewed and dispositioned in their respective group meetings. The level of detail in the Plenary session discussions precludes accurate reporting here, so only change proposals creating significant discussion are noted. The actual Change Proposals and any dispositions are found on the SC-135 Workspace and tracked in the Change Proposal Tracking Log, also found on the Workspace.

Sections 1, 2 and 3 – David Kerr, Change Coordinator.
Discussion of open topics was held, resulting in agreement that common test report requirements will reside in Sections 1-3.
CP H-188 was also discussed regarding Order of Test, and deferred.

Sections 4 and 5 – Jake VanDyke, Change Coordinator.
Discussed CP H-185 regarding Should/ Shall for S1 and S2 Categories. The change proposal was deferred requesting the originator to resubmit to correct section 5.3.1.
Discussed CP H-140 Internal vs external cooling was deferred. Provided draft text and requested submitter to reword and resubmit

Sections 7 and 8, Merrill Vaughan, Change Coordinator.
Discussion was held regarding roto-craft test levels and procedures for CP H-175. This proposal was deferred for further investigation.
CP H-178 was accepted as modified to address ending amplitude data points.
CP H-189 was accepted as modified, to allow preliminary sweeping at increased sine sweep magnitudes.

Sections 9, 10, 11 and 14 – Harlan Sharpe, Change Coordinator.
Five change proposals were dispositioned for Section 14. CP H-193 removing the work “Immediate”, and CP H-192 correcting paragraph numbering were Accepted As Written. Two change proposals were discussed for Section 11 with no one deferred and one rejected.

Section 16 – Joe Marotta, Change Coordinator.
Six change proposals were discussed for Section 16. Of those, 4 were accepted and 2 deferred. CP H-199 to Clarify voltage levels on Power Interruption tables and CP UG-26 which clarified the way of calculating Current Modulation were accepted.
Section 18 – Ken Webb, Change Coordinator.
Discussion was held regarding Audio Susceptibility alignment between MIL STD-461 and DO-160. Result was no action needed. Eight other proposals were dispositioned and accepted to include CP H-176 to remove the words “Closed Circuit Test” from the title.

Sections 19 and 20 – Jim Hatlestad, Change Coordinator.
Two change proposals were dispositioned for Section 19. CP H-167 was accepted to correct figure references, and CP H-168 was rejected.

Two change proposals were dispositioned for Section 20. CP H-145 was accepted to better define LISN impedance specifications, and CP H-184 addressing current clamp loading was rejected.

Section 21 – Nick Conquest, Change Coordinator.
Two change proposals were discussed and dispositioned for Section 21. CP H-169 addressing frequency amplitude tabulation was accepted as modified, while CP H-183 to include FFT receiver measurements was deferred.

Section 22 – Eric Stewart, Change Coordinator.
Seventeen change proposals were reviewed for section 22. Four were rejected, 11 were accepted, and 2 proposals were deferred. CP H-216 was accepted to require a verification into a known resistance during Generator Performance Verification.

Section 25 – Erik Borgstrom, Change Coordinator.
Change proposal CP H-174 was discussed to include contact discharge test method. Disposition not concluded.

Section 26 – Alan Thompson, Change Coordinator.
Five proposals were dispositioned for Section 26. Two were accepted, two were deferred for FAA review, an one was rejected. CP H-139 was accepted to better define the requirements of a metal enclosure. Committee was briefed on the Flammability Test round robin. Of the 5 participants, 2 have provided results.
**Agenda Item 4  Review Schedule**

Chairman Green addressed the schedule during the discussion of the ground based equipment document. Based on the Revised Terms of Reference (TOR), RTCA SC-135 has committed to presenting the first complete draft of DO160H by Q3 of 2021, to support final release by December, 2021. A joint meeting with WG-14. Currently planned for Q2, 2021 in Europe to support DO-160H FRAC.

**Agenda Item 5  New/Unfinished Business**

Change coordinator for section 17 position will be held by Susan Beard.

Kyle McMullen provided a summary of GSEWG. The schedule was reviewed, and determination was made that all sections need to be updated and sent to the SC-135 Program Director by June 17th, 2019.

General formatting and content placement was discussed affecting all sections of the document. This included the “Important Notice” statement, TOC, and minimum reporting requirements.

Specific updates were made to sections 1, 6, 17, 22 and 26. Most notably was the decision to remove Section 17, and adding operational requirements to the Humidity Test in Section 6.

SC-135 Program Director provided the group with the Style Guide and overview training, along with an overview of the comment process for open documents.

**Agenda Item 6  Establish Date for Next SC-135 Meeting**

The next SC-135 meeting will be hosted by Garmin at their Garmin AT location in Salem Oregon. Dates of the meeting will be from Monday, October 21st through Thursday, October 24th, 2019.

**Agenda Item 7  Closing and Adjourn**

Brad Green asked for a motion to adjourn the meeting. A motion was offered, seconded, and unanimously approved. The meeting was adjourned at 12:22 PM on Thursday, April 26th, 2019.
Certified as a true and accurate summary of the meeting.

-S-         -S-     
Bradley Green   Jacob VanDyke   
Chairman       Secretary