



THE GOLD STANDARD FOR AVIATION SINCE 1935

Fax: (202) 833-9434 www.rtca.org

RTCA, Inc.  
1150 18<sup>th</sup> Street, NW, Suite 910  
Washington, DC 20036  
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RTCA Paper No. 168-19/SC135-725  
April 25, 2019

**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 23<sup>rd</sup> through 26<sup>th</sup>, 2019 at RTCA Headquarters in Washington DC.

The following were in attendance:

Bradley Green, SC-135 Chairman  
Jacob VanDyke, SC-135 Secretary  
Rebecca Morrison, Program Director

EaglePitcher Technologies  
Honeywell International, Inc.  
RTCA, Inc.

Patrick Andre  
Susan Beard  
Massimiliano Bertoldi  
Erik Borgstrom  
Jack Connelly  
Nick Conquest  
Charlie Cooper  
William Donoghue  
Mike Falzone  
Marsirlene Gohn  
Brad Green  
Scott Hanaway

Andre Consulting, Inc.  
Rockwell Collins, Inc.  
CELAB SRL  
Element Materials Technology  
The Boeing Company  
NIAR  
Collins Aerospace  
United Technologies Corporation  
Garmin Ltd  
Teledyne Control  
EaglePicher Technologies  
Astronautics Corporation of  
America  
The Boeing Company  
The Boeing Company

Jim Hatlestad  
Terri He



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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  
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)
3. Review Working Group Summaries.
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 73<sup>rd</sup> 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.



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**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.



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**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.



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**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 17<sup>th</sup>, 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 21<sup>st</sup> through Thursday, October 24<sup>th</sup>, 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 26<sup>th</sup>, 2019.



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-S-  
Bradley Green  
Chairman

-S-  
Jacob VanDyke  
Secretary

Certified as a true and accurate summary of the meeting.