



RTCA Paper No. 024-19/SC135-721 October 26, 2018

SUMMARY OF THE SEVENTY-THIRD MEETING

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

The Seventy-third meeting of RTCA/SC-135 was held October 24th through 26th, 2018 at Honeywell Headquarters in Morris Planes, NJ

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.

Susan Beard Rockwell Collins, Inc.

Erik Borgstrom Element Materials Technology

Philippe Chenebault* Dassault Aviation

Nick Conquest NIAR

Mike Falzone* Garmin Ltd

Brad Green EaglePitcher Technologies

Pat Hall* Elite Test

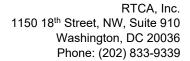
Jim Hatlestad The Boeing Company
Terri He * The Boeing Company
David Jennings Rockwell Collins, Inc.

David Kerr Garmin Ltd.
Debbie Koester Microstar Lab

Donald MacDonald Gables Engineering

Ivan Malizia Embraer

Joe Marotta Honeywell International





Jerome Mavier Airbus
Brian McAdams Blue Origin
Kyle McMullen NIAR
Terry Milks Rockwell Collins, Inc.

Lee Nguyen FAA
Miguel Perez Hone

Miguel Perez Honeywell International
Marc Poncon Airbus

Jaclyn Radeni Microstar Lab

Harlan Sharpe NIAR

Eric Stewart Rockwell Collins, Inc.

Elite Test Teledyne

Honeywell International The Boeing Company

FAA

Rockwell Collins, Inc.

Chuck Thompson*
Randy Tsuchiyama

Jacob VanDyke Merrill Vaughan

David Walen

Ken Webb

^{*} via Conference Bridge



The agenda for the meeting was as follows:

- 1. Chairmen's Opening Remarks, Introductions.
- 2. Approval of Summary from the Seventy-Second 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.

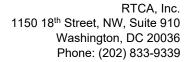
(**Note:** The following report is organized by Agenda Item, although some sections were conducted out of sequence to accommodate some members' schedules.)

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

The plenary session of the Seventy-third meeting of RTCA/SC-135 was called to order at 9:01 AM on the 25th of October, 2018. 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-Second Meeting

SC-135 Secretary Jacob VanDyke read the minutes from the 72nd meeting, RTCA Paper No. 163-18/SC135-719. A motion was made and seconded to accept the minutes as written, and the motion was approved unanimously.





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.

A review of all open topics was conducted with extensive time spent on unit tolerance throughout DO-160. Change proposal H-147 was discussed, which required use of the manufacturers calibration procedure and interval for test equipment. The change proposal was modified to "consider" this information and accepted as modified. Change proposal H-148 was discussed and accepted as modified, deleting the "Important Notice" on the cover page of sections 4-26 and adding reference to Sections 1-3 and UG to the body of same sections.

Sections 4 and 5 – Miguel Perez, Change Coordinator.

Discussion was held regarding a lack of clarity in Note 2 of sections 4.5.1 and 4.5.3. Determination was that a change proposal is needed to clarify the note intent. A change proposal to remove "internal" from the In-Flight Loss of Cooling definition was discussed, and deferred.

Sections 7 and 8, Merrill Vaughan, Change Coordinator.

On change proposal was discuss for section 8, to correct Note 4 following Table 8-1. The note was modified to clarify the applicability of curves B2, B12, B, and B1-4.

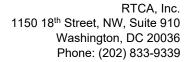
Sections 9, 10, 11 and 14 – Harlan Sharpe, Change Coordinator.

Two change proposals were discussed for DO-160H, and two were discussed for the User Guide. Change proposal H-146 was accepted as modified, which added a step for cleaning the EUT in-between fluid types. Change proposal H-151 was deferred to WG14, which addressed documentation of wax application.

Change proposal UG-16 was approved as written, correcting a typo in section 9.

Section 13 – Alan Thompson, Change Coordinator.

Seven change proposals were discussed and dispositioned. The intention of these change proposals was to update the test process and tools, to align with current industry standard methods. Change proposal H-160 was discussed to update the temperature and humidity tolerance for this section. All proposals were approved as written or as modified.





Section 16 – Joe Marotta, Change Coordinator.

Change proposal H-51, to add double interrupts for AC equipment was reviewed and accepted as written. DC equipment conditions will be discussed further in future meetings. Two change proposals were accepted, directing AC and DC power interrupts to be performed at Normal Operating Minimal Voltage or Minimal Voltage.

Section 18 – Ken Webb, Change Coordinator.

Sixteen change proposals were discussed. Nine change proposals were accepted, three deferred, and one withdrawn. Change proposal H-136 was marked "Other", with the text accepted, but drawing updates to Figure 18-1 will be worked at a later date.

Sections 19 and 20 – Jim Hatlestad, Change Coordinator.

No change proposals were dispositioned for section 19. Brief discussion was held regarding a potential replacement for Induced Spike Test.

Five change proposals were dispositioned for section 20. Of the five proposals, two were accepted resulting in removing measurement and recording of E-Total and E-MaxTotal, as well as determining a maximum modulation frequency dependent of the frequency range.

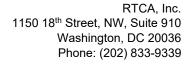
Three proposals were dispositioned for the UG Section 20. Two were accepted resulting in removal of the reference to insertion loss, and removing unnecessary text. Removal of the unnecessary text also corrected an error of test levels and power limits for Conducted Susceptibility.

Section 21 – Nick Conquest, Change Coordinator.

Three change proposals were reviewed and dispositioned. Only change proposal H-75 was accepted as modified, correcting the notes for Figure 21-11.

Six previously rejected change proposals were reviewed and determined potentially good User Guide content. Authors are requested to resubmit as User Guide content.

A discussion was also held regarding FFT Time Domain Emissions Measurement, with an expected proposal to be discussed at the next SC-135 meeting.





Section 22 – Eric Stewart, Change Coordinator.

A presentation on SAE AE2 the results of the Round Robin lightning calibration testing was given. SAE AE2 is waiting for WG14 and WG31 to concur on results before any additional work is completed on the updated lightning test procedure

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 Q4 of 2020, 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 need to be finalized by April 2019 meeting. Existing coordinator will need to confirm participation, or replacement will need to be identified.

Agenda Item 6 Establish Date for Next SC-135 Meeting

The next SC-135 meeting will be held at the RTCA Headquarters, Washington DC. Dates of the meeting will be from Tuesday, April 23rd through Friday, April 26th, 2019.

Agenda Item 7 Review Work Space Process

Discussion was held to coordinate Secretary and Program Director responsibilities. It was decided that the Secretary would update all data resulting from SC-135 meetings. Following the secretary's actions, all data management will be transitioned back to the Program Director.

Agenda Item 8 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 2:42 PM on Thursday, October 25th, 2018.



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

Certified as a true and accurate summary of the meeting.