



THE GOLD STANDARD FOR AVIATION SINCE 1935

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

RTCA, Inc.
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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
Jacob VanDyke, SC-135 Secretary
Rebecca Morrison, Program Director

EaglePitcher Technologies
Honeywell International, Inc.
RTCA, Inc.

Susan Beard
Erik Borgstrom
Philippe Chenebault*
Nick Conquest
Mike Falzone*
Brad Green
Pat Hall*
Jim Hatlestad
Terri He *
David Jennings
David Kerr
Debbie Koester
Donald MacDonald
Ivan Malizia
Joe Marotta

Rockwell Collins, Inc.
Element Materials Technology
Dassault Aviation
NIAR
Garmin Ltd
EaglePitcher Technologies
Elite Test
The Boeing Company
The Boeing Company
Rockwell Collins, Inc.
Garmin Ltd.
Microstar Lab
Gables Engineering
Embraer
Honeywell International



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Jerome Mavier
Brian McAdams
Kyle McMullen
Terry Milks
Lee Nguyen
Miguel Perez
Marc Poncon
Jaclyn Radeni
Harlan Sharpe
Eric Stewart
Chuck Thompson*
Randy Tsuchiyama
Jacob VanDyke
Merrill Vaughan
David Walen
Ken Webb

Airbus
Blue Origin
NIAR
Rockwell Collins, Inc.
FAA
Honeywell International
Airbus
Microstar Lab
NIAR
Rockwell Collins, Inc.
Elite Test
Teledyne
Honeywell International
The Boeing Company
FAA
Rockwell Collins, Inc.

* 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.



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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.



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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.



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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.