

RTCA Paper No. 027-21/SC135-731
October 29, 2020

SUMMARY OF THE SEVENTY-SEVENTH MEETING

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

The Seventy-seventh meeting of RTCA/SC-135 was held virtually on October 26th through 29th, 2020.

The following were in attendance:

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

EaglePicher Technologies
Honeywell International, Inc.
RTCA, Inc.

Patrick Andre*
Susan Beard*
Erik Borgstrom*
Darrell Burghardt*
David Chen*
Charlie Cooper*
Mike Falzone*
Brad Green*
Scott Hanaway*
Jim Hatlestad*
David Jerrell*
David Kerr*
Hakan Kumbasar*
Cong Li*
Tim Lusha*
Evelyn Matheson*

Andre Consulting, Inc.
Collins, Aerospace.
Element Materials Technology
Textron Aviation
FAA
Collins Aerospace
Garmin Ltd
EaglePicher Technologies
Astronautics Corporation of America
The Boeing Company
General Atomics Aeronautical Systems Inc.
Garmin Ltd.
Lilium
GE Aviation
D.L.S. Electronic Systems Inc.
The Boeing Company



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Jerome Mavier*
Mark McPeck*
Rebecca Morrison*
Lee Nguyen*
Marc Poncon*
Steven Rehn*
Tim Steinbach*
Eric Stewart*
Aziz Tazi*
Oral Urquidi*
Jacob VanDyke*
Merrill Vaughan*
Ken Webb*

Airbus
Collins Aerospace
RTCA
FAA
Airbus
Rutgers University
Collins Aerospace
Rockwell Collins, Inc.
Transport Canada
Panasonic Aviation
Honeywell International
The Boeing Company
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-Sixth Meeting – (RTCA Paper No. 183-20/SC135-730)
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

The plenary session of the Seventy-fifth meeting of RTCA/SC-135 was called to order at 9:02 AM on the 29th of October, 2020. Chairman Brad Green opened the meeting by welcoming those in attendance.

Rebecca Morrison reviewed the RTCA Anti-trust, Proprietary and membership policies. 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-Sixth Meeting**

SC-135 Secretary Jacob VanDyke read the minutes from the 76th meeting, RTCA Paper No. 183-20/SC135-730. 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 DO-380**

The focus for this discussion was on earthquake and Direct Effects Lightning. More discussion is needed in support DEL. Multiple committee members agreed to poll experts in this area to further understand the need and applicability of this testing.

Work group meeting to be held prior to December to discuss further.

Agenda Item 4 **Review Working Group Summaries DO-160, DO-357**

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 was held for one change proposal, H-219, regarding moving the EUT setup and configuration information from Section 20.3 into Section 3. The proposal is that affected sections would reference these general requirements in Section 3. Following the discussion, this proposal remains in Deferred status.

Sections 4, 5 and 6 – Jake VanDyke, Change Coordinator.

Four change proposals were reviewed for Section 4. Three proposals were to address typos in updated figures for this section. CP H-129 was reviewed based on applicability comments from



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WG-14. Agreement was reached to maintain the CP as deferred awaiting further industry information. For Sections 5 and 6, one proposal for each section was reviewed with no change in status.

Sections 7 and 8, Merrill Vaughan, Change Coordinator.

Discussion was held regarding CP H-237 which requested the removal reference of “bandwidth-time product greater than or equal to 50.” and replace with confidence intervals. This proposal was rejected due to the concurrence that the proposed wording could be considered less clear than existing definition and did not meet the intent of the change. CP H-41 was also discussed to add vibration terms definition as a new section and clean up references in Section 8. This proposal was Accepted As Modified.

Section 15 – Ken Webb, Change Coordinator.

No change proposals were discussed; however, discussion was held regarding drawing updates for this section. A CP will be submitted address updating the figure in content and format.

Section 16 – Keith Peavler, Change Coordinator (presented by Jake VanDyke)

CP H-98 was accepted as modified to define “at equipment terminals” for this section. CP H-154 was discussed to modify DC Momentary Power Interrupts to be executed at Vmin (21Vdc) as opposed to Vnom (28 Vdc). This proposal was deferred for research into industry impact.

Section 17 – Susan Beard, Change Coordinator

One proposal, CP H-61 to address the use of LISNs, was discussed and withdrawn. Decision was to move this content to the User Guide.

Section 18 – Ken Webb, Change Coordinator

Discussion was held on open topics needing addressed. Requested change proposals for figures and test report information. Coordinator requested editable documents of sections to start updates.

Sections 19 and 20 – Jim Hatlestad, Change Coordinator

No new change proposals were submitted or discussed for Section 19.



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For section 20, ten proposals were discussed/reviewed. Of these, one was rejected, 5 were deferred, and 4 were accepted.

Action was taken on CP H-218 which resulted in addition of a requirement for one quarter wavelength of cable to be exposed during the Radiated Susceptibility alternate procedure. CP H-224 was accepted resulting in the inclusion of commonly used HIRF levels into this section and CP H-229 was accepted to indicate drawings in this section are examples only.

Section 21 – Nick Conquest, Change Coordinator (presented by Jim Hatlestad)

Existing proposals were reviewed, no changes or dispositions were made.

Section 22 – Eric Stewart, Change Coordinator.

Committee reviewed LISN and power line discussions. Additional discussion was held regarding the applicability of utilizing a smaller ground plane for pin injection testing.

Agenda Item 5 Review Schedule

Chairman Brad Green reviewed the SC-135 schedule. The current schedule is for release of DO-160H is held at December 2024. Planned dates for the DO-357A will be December 2025. Discussion was held regarding the upcoming joint meeting with WG-14. The committee will need further discussion to determine the feasibility of travel and opportunity for a virtual meeting.

Agenda Item 6 Review TOR (Terms of Reference)

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 2024, to support final release by December, 2024, DO-380A by Q3 of 2021, to support final release by December, 2021, and DO-357A by Q3 of 2024, to support final release by December, 2024

Concern was raised regarding UAS test software requirements and definition, additional discussion will be held to determine affects to the TOR.

Agenda Item 7 New/Unfinished Business

David Kerr will assume lead for the LISN task force. David is collecting names for interested team members.



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Agenda Item 8 **Establish Date for Next SC-135 Meeting**

The next SC-135 meeting is planned be held virtually March 8th through 11th. Tentative plans for in-person attendance have been made at the RTCA Headquarters in Washington DC in the event industry can support travel.

Agenda Item 9 **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 12:14 PM on Thursday, October 29th, 2020.

-S-
Bradley Green
Chairman

-S-
Kyle McMullen
Chairman

-S-
Jacob VanDyke
Secretary

Certified as a true and accurate summary of the meeting.