Federal Aviation Administration

Memorandum

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To: Manager, Accident Investigation Division, AVP-100

From: Rebecca B. MacPherson, Assistant Chief Counsel for Regulations, AGC-200

Prepared by: Karen L. Petronis, Senior Attorney for Regulations, AGC-200

Subject: National Transportation Safety Board (NTSB) Request for Interpretation of 14 CFR §121.359

Following an incident involving an El Al Boeing 777 in May 2011, the Israeli Ministry of Transport (IMOT) requested an interpretation of the cockpit voice recorder requirements of §121.359 from the National Transportation Safety Board (NTSB). That request was forwarded to the FAA for response. The IMOT and the aircraft manufacturer have differing interpretations of the regulatory requirement.

Section 121.359 is the regulation on cockpit voice recorders. Paragraph (f) states:

> In complying with this section, an approved cockpit voice recorder having an erasure feature may be used, so that at any time during the operation of the recorder, information recorded more than 30 minutes earlier may be erased or otherwise obliterated.

This regulation was adopted in 1964, when magnetic tape was the standard CVR recording medium. This type of data storage technology required overwriting, or looping, of the magnetic tape in order to operate continuously as required by paragraph (a) of that section. Current solid state recording media also incorporates technology that overwrites the oldest data stored in memory to allow for continuous operation.

Section 121.359(f) presumes that some amount of recorded data will be erased and overwritten while maintaining the minimum recording duration required by the regulation. The specified time required in §121.359 as of the date of the incident was 30 minutes. After April 7, 2012, that minimum will be increased to two hours for part 121 operations.

The NTSB notes that the IMOT reads paragraph (f) to require that a flightcrew have some means of permanently preserving a 30-minute portion of the recording even if it occurs in the middle of, for example, a nine-hour flight. Boeing reads the regulation as allowing (but not requiring) an erase feature that is operational at all times provided that the regulatory minimum is maintained.

As our discussion of the regulatory requirement indicates, Boeing's interpretation is correct. Nothing in our regulations requires that a flight crew be able to preserve any part of a cockpit voice recorder recording, and only the last 30 minutes (two hours after April 7, 2012) is required to be preserved.

This requirement should not be confused with what is known as the "bulk erase" feature of some flight recorders. That feature is not a regulatory requirement, but is described in the minimum operational performance standards for TSO-C123. These standards allow bulk erasure of recorded data only when an aircraft is on the ground. There are specific installation requirements that minimize an inadvertent activation of the bulk erase feature during aircraft operations.

The Avionics Maintenance Branch (AFS-360) of the Flight Standards Service assisted with the preparation of this interpretation and has concurred with the content. If you have any further questions regarding this interpretation, please contact Karen Petronis at 202-267-3073.