



**National Transportation Safety Board**

Vehicle Recorder Division

# Cockpit Voice Recorder Handbook for Aviation Accident Investigations

Office of Research and Engineering  
Office of Aviation Safety  
Washington, DC 20594

**A Reference for Safety Board Staff**

## FOREWORD

This handbook provides general information to assist the investigator-in-charge, group chairmen, and other Safety Board staff who may encounter a cockpit voice recorder during the course of an aviation accident investigation. It is intended to provide guidance on the procedures, laws and standard practice surrounding the cockpit voice recorder and its audio data within an investigation.

The Vehicle Recorder Division will be responsible for keeping this handbook updated. The handbook's printing date will be indicated in the upper left corner of each page. While the intent of the handbook is to provide guidance for handling a cockpit voice recorder and its data, the handbook may not cover all situations, and any questions or concerns may be directed to the Chief of the Vehicle Recorder Division for immediate assistance.

This handbook is intended to provide information and guidance to NTSB employees who are involved in the cockpit voice recorder portion of an aviation accident investigation. This handbook is not regulatory in nature and does not create any rights in any of the parties to an NTSB investigation or any other person. Deviation from the guidance offered in this handbook will at times be necessary to meet the specific needs of an investigation.

## TABLE OF CONTENTS

1	Director Authority .....	1
2	Applicable Recorded Audio Data.....	1
3	CVR Recording Disclosure and Access .....	1
4	CVR Recorder Recovery: From On Scene to the Audio Laboratory .....	2
5	CVR Arrival at the Safety Board Audio Laboratory .....	3
6	CVR Initial Audition.....	4
7	Planning the CVR Group Meeting .....	4
8	The CVR Group Meeting .....	6
9	CVR Transcription .....	7
10	The CVR Factual Report.....	8
11	Safety Board Staff CVR Review and Official Use of CVR Data.....	9
12	Public Release of the CVR Factual Report and Transcript .....	10
13	Regional Investigations: Receipt of Factual Report with a Transcript—Prior to Public Release .....	11
14	Flight Crew and Other CVR Review .....	12
15	Release of the Recorder and Audio Recording .....	12
16	Military Investigations or Other Federal Agencies .....	13
17	NTSB Investigation with Foreign Representatives .....	14
18	Foreign Investigations with NTSB Participation or Assistance .....	14
	ATTACHMENT A: Statement of Party Representatives to NTSB Investigation.....	16
	ATTACHMENT B: CVR Non-Disclosure Agreement .....	19
	ATTACHMENT C: Coversheet for CVR Factual Report/Transcript and Review Log.....	22
	ATTACHMENT D: Release of CVR Factual Report with Transcript to Regional Director .....	25
	ATTACHMENT E: Federal CVR Legislation and Regulations .....	28
	ATTACHMENT F: NTSB and BEA Memorandum of Agreement.....	40
	ATTACHMENT G: Docket Management System CVR Report Placeholder.....	49

## **1 Director Authority**

- 1.1. Permission must be obtained from the Directors of the Offices of Research and Engineering and Aviation Safety regarding any exceptions to the cockpit voice recorder (CVR) standard practices or procedures. It is the discretion of the Directors of the Offices of Research and Engineering and Aviation Safety to grant approval for the exceptions.
- 1.2. It is also the discretion of the Directors of the Offices of Research and Engineering and Aviation Safety to adjust a standard practice or procedure, if necessary for a unique circumstance.

## **2 Applicable Recorded Audio Data**

- 2.1. The laws and policies that govern the procedures regarding CVRs and CVR recordings are generally applicable to any and all audio that is recorded on board an aircraft. Any audio recording that is recovered from an aircraft following an accident or incident is given the same protection and security of a CVR or CVR recording.
- 2.2. Safety Board on-scene staff shall secure any device that records audio, found within the cockpit or cabin, carried by a passenger, or installed in the aircraft. Devices that record audio include, but are not limited to: camcorders, video recorders/cameras, digital cameras, handheld tape recorders, personal digital audio recorders, and flight test equipment. Furthermore, any magnetic tape or digital memory chips found in the wreckage could contain recorded audio and shall be secured by Safety Board staff.
- 2.3. Audio from alternate audio devices shall not be read out or played on scene and the equipment or recording medium shall be secured by the Safety Board to prevent read-out or damage.
- 2.4. In the event that audio from an alternate audio device is recovered, the investigator-in-charge (IIC) shall immediately contact the Director of the Office of Aviation Safety and the Chief of the Vehicle Recorder Division for guidance.

## **3 CVR Recording Disclosure and Access**

- 3.1. CVR recordings and transcripts contain highly sensitive material, and premature or unauthorized release of information by Safety Board employees is grounds for disciplinary action. All Safety Board staff and Members who obtain information concerning the contents of a CVR recording or written transcript, regardless of reason or source, are bound by Federal CVR nondisclosure laws (refer to *49 U.S.C. §1114–Disclosure, availability, and use of information*).

- 3.2. The CVR specialist, the Directors of the Offices of Research and Engineering and Aviation Safety, and the IIC are the only staff automatically authorized to listen to a CVR recording.
- 3.3. The CVR specialist assigned to the accident ordinarily has complete access to the CVR recording, data and information at all times. Other Safety Board CVR specialists may be called upon to assist with a CVR recording, when necessary.
- 3.4. Any other Safety Board staff is required to consult with the IIC and seek approval from the Directors of the Offices of Research and Engineering and Aviation Safety prior to reviewing a CVR recording or written transcript.
- 3.5. All individuals who listen to a CVR recording are required to sign and log their CVR review or audition into the CVR Audition Log. This is required for each session.
- 3.6. The CVR recording (original or copy) shall not be brought to any other facility for investigative work without the specific approval from the Directors of the Offices of Research and Engineering and Aviation Safety.
- 3.7. The CVR specialist shall keep the IIC apprised of information and activities concerning the CVR or CVR recording.

## **4 CVR Recorder Recovery: From On Scene to the Audio Laboratory**

- 4.1. Upon notification of an accident or incident in which a CVR is installed on the aircraft, the IIC shall attempt to ensure that the CVR circuit breaker is pulled as soon as possible.
- 4.2. The IIC then considers whether the CVR might contain information relevant to the investigation, taking into consideration that the CVR can be 30 minutes or 2 hours in duration. It is possible for the events from an accident or incident to be overwritten when power is applied to the aircraft for an extended time following an event (through its own power or external power). However, some aircraft have an automatic shutoff logic that removes power to the CVR (even if the aircraft remains powered), and possibly allow for the capture of the events. With a CVR part number, the Vehicle Recorder division may assist in determining the type of CVR installed.
- 4.3. The CVR shall not be read out or played on scene.
- 4.4. The CVR unit shall not be opened and the recording medium shall not be removed (i.e., the tape or memory module) until it reaches the audio laboratory at Safety Board headquarters in Washington, D.C.
- 4.5. If the CVR is recovered in water, it shall immediately be packed in water (fresh, if possible) and not be allowed to dry out. Packaging may be accomplished by sealing the

- recorder (in water) inside a plastic beverage container with silicon adhesive or a similar sealant.
- 4.6. The CVR must be shipped to Safety Board headquarters in a manner that protects it from damage (i.e., inside a cardboard or wooden box, wrapped in either foam or bubble-wrap or in a container filled with foam peanuts).
  - 4.7. The IIC shall contact the Chief of the Vehicle Recorder Division to coordinate the shipment of the CVR to headquarters.
  - 4.8. The Chief of the Vehicle Recorder Division assigns the CVR to a CVR specialist.
  - 4.9. The CVR may be sent to Washington on board a commercial airplane. This usually needs to be coordinated with the captain of the flight. The IIC must also arrange for headquarter staff to meet the arriving flight. If necessary, the CVR shall be packaged appropriately.
  - 4.10. Preliminary recorder and accident information shall be sent/emailed to the Chief of the Vehicle Recorder Division. The CVR specialist shall also be included in the notification.

## **5 CVR Arrival at the Safety Board Audio Laboratory**

- 5.1. The CVR specialist is responsible for handling and securing the CVR, the original recording medium, and any audio copies.
- 5.2. If the recorder is damaged, the CVR specialist extracts the recording medium with the use of cutting tools or other special equipment. This is not ordinarily a group activity.
- 5.3. The CVR specialist checks the recording to determine that useable audio information has been recorded (CVRs may be erased or malfunction and contain no useable audio).
- 5.4. Useable audio is defined as any audio that is recorded by the CVR and includes, but is not limited to: the accident events, overwritten post accident discussions, and aircraft noises.
- 5.5. The CVR specialist notifies the Directors of the Offices of Research and Engineering and Aviation Safety of the condition of the audio in the recording.
- 5.6. The CVR specialist downloads the original tape or memory from the CVR. The recording is digitally copied in its entirety without alterations or filters. This task is ordinarily accomplished during the initial audition, if practicable.
- 5.7. All non-foreign CVR recordings are digitally archived regardless of whether the recording contains useable audio.

- 5.8. Although most subsequent audio work is accomplished using the digital copy of the original recording, the original recording may be used.

## **6 CVR Initial Audition**

- 6.1. If the recording contains useable audio, the initial audition is conducted by the Directors of the Offices of Research and Engineering and Aviation Safety (or their designees).
- 6.2. The original recording is typically used for the initial audition. A digital copy is made as soon as possible – during the initial audition, if practicable.
- 6.3. Any critical information that might assist in the field phase of the investigation is relayed to the IIC and other appropriate on-scene staff, by either (or both) Directors of Aviation Safety and/or Research and Engineering (or their designees).
- 6.4. The discussion shall be held over a secure landline telephone – not a portable mobile phone – and not routed through any conferencing facility.
- 6.5. The CVR recording shall never be played over the telephone.
- 6.6. If the recording contains audio information pertinent to the investigation, the IIC and the Directors of the Offices of Research and Engineering and Aviation Safety (or their designees) determine whether it is appropriate to convene a CVR group.
- 6.7. If a CVR group is to be convened, the IIC and the Directors of the Offices of Research and Engineering and Aviation Safety (or their designees) determine which parts of the transcript shall be transcribed (if the entire recording is not going to be transcribed). In general, the entire recording is transcribed in the event of a major investigation.

## **7 Planning the CVR Group Meeting**

- 7.1. Not all CVRs that are sent to Safety Board headquarters result in a CVR group convening. The Directors of the Offices of Research and Engineering and Aviation Safety, in consultation with the IIC, determine if a group is necessary.
- 7.2. The CVR specialist is the group chairman for the CVR portion of the investigation and shall be included in any correspondence and discussions that pertain to all group chairmen participating in the investigation.
- 7.3. The IIC must coordinate with the CVR group chairman to select a tentative date for a CVR group meeting at Safety Board headquarters. The group meeting does not necessarily occur immediately after the CVR is sent to headquarters.
- 7.4. The IIC shall notify the party coordinators that a CVR group is convening.

- 7.5. The IIC must ensure that only parties appropriate to the CVR group are invited: FAA (must be invited), and typically, the manufacturer, pilot union, and owner/operator. Flight crew cannot participate as group members. The Director of the Office of Aviation Safety or the Director of the Office of Research and Engineering must approve the party representatives that the IIC recommends.
- 7.6. Party representatives that can provide a technical contribution may be assigned to the CVR group. The CVR group shall include at least one pilot typed or current in the accident aircraft model. Typically other individuals seated on the CVR group include those familiar with the crew's voices, and those familiar with company procedures. The party coordinator is not automatically qualified to be a CVR group member.
- 7.7. Ordinarily, only one representative per party is seated on the CVR group. Additional party representatives may be seated, at the discretion of the Directors of the Offices of Research and Engineering and Aviation Safety, in consultation with the IIC and the CVR group chairman.
- 7.8. Transcribing a 30-minute recording may be accomplished in one day, but typically continues late into a second day or more. The IIC finalizes a meeting time and date with the group members and reconfirms with the CVR group chairman.
- 7.9. The IIC shall advise the party representatives attending the CVR group meeting that once the CVR group meeting has started the group members are not allowed to leave the group until the transcript of recorded events has been completed and the CVR group chairman authorizes the group to be dismissed.
- 7.10. The IIC must forward the names of the CVR group members to the CVR group chairman prior to the CVR group meeting day. Only authorized individuals are permitted to participate in the group. Authorized individuals are those individuals recommended by the IIC and approved by the Director of the Office of Aviation Safety or the Director of the Office of Research and Engineering.
- 7.11. For a regional investigation, if the FAA's regional FSDO representative is unavailable for the CVR group meeting, the IIC shall contact the FAA's Accident Investigation Division (AAI-100 in Washington D.C.) as soon as possible. An AAI-100 investigator is assigned to represent the FAA or the FAA may choose to decline participation. The CVR group chairman shall contact the AAI-100 division before the day of the group meeting to ensure that the AAI-100 division has been notified of the CVR group activities.
- 7.12. The IIC shall advise CVR group members to go to the 6th floor reception area at the 490 L'Enfant Plaza office elevators and ask the receptionist to contact the CVR group chairman.
- 7.13. The IIC is welcome to attend the CVR group meeting, but his or her presence is not required.



## 8 The CVR Group Meeting

- 8.1. The CVR group chairman's primary role is to provide technical expertise in handling the audio recording and audio equipment. During a group meeting, the CVR group chairman is responsible for facilitating and focusing the group members in extracting factual audio data. The group chairman must exercise extreme caution in offering opinions or speculation so as not to bias the group members and compromise the group meeting.
- 8.2. At the designated meeting time, the CVR group members are met at the reception desk and escorted into the CVR listening room by the CVR group chairman.
- 8.3. The CVR group chairman explains the CVR disclosure laws and policies. In particular, CVR group members are prohibited from releasing CVR information to the public. However, the Safety Board may decide to publicly release information regarding CVR activity.
- 8.4. CVR disclosure policy does not prohibit a party from implementing safety-of-flight related adjustments within their organization, as a result of their participation in a CVR group. However, the Safety Board requires notification of the subject matter prior to any disclosure of CVR information to the group member's organization. It is the CVR group member's responsibility to notify the CVR group chairman prior to disclosure. The CVR group chairman shall ensure that the IIC and the Directors of the Offices of Research and Engineering and Aviation Safety are apprised of the situation. Disclosure of information to a group member's respective organization shall include only information that is directly related to safety—at no time shall remarks, comments, or conversations be disclosed to any person, party, or organization.
- 8.5. The group members must sign the CVR Audition Log, *CVR Non-Disclosure Agreement*, and *Statement of Party Representatives to NTSB Investigation* (see attached). The FAA does not sign the party representative form.
- 8.6. Quotes and statements from the CVR recording are prohibited from being discussed with anyone—except the CVR group members during the CVR group meeting.
- 8.7. Group members on a break shall not discuss the CVR or its contents while away from the audio laboratory.
- 8.8. At the beginning of the CVR group meeting, before starting the transcription process, the CVR group chairman plays the recording in its entirety without stopping.
- 8.9. The CVR group is a tool to help in the investigation. Only the facts (i.e., words and sounds) are to be ascertained by the group—no analysis or interpretation shall be introduced into the transcript.
- 8.10. Any notes taken during the meeting are collected by the CVR group chairman at the end of the group meeting and destroyed. No notes shall be taken out of the CVR listening room.

- 8.11. During group activities, group members are prohibited from bringing electronic devices into the CVR Audio Laboratory unless explicitly authorized by the Director of the Office of Research and Engineering (through the CVR group chairman).
- 8.12. The CVR group chairman, in coordination with the Directors of the Offices of Research and Engineering and Aviation Safety, has the right to excuse any member who is disruptive to the process or is in violation of the CVR nondisclosure policies and laws.
- 8.13. The CVR group chairman shall keep the IIC and the Directors of the Offices of Research and Engineering and Aviation Safety apprised of the CVR group activities.
- 8.14. The CVR group may reconvene at a later date at the request of the CVR group chairman. The decision to reconvene the group must be authorized by the IIC, and the Directors of the Offices of Research and Engineering and Aviation Safety.
- 8.15. If the CVR group reconvenes, all members must be invited to return, but may decline the invitation. Except in extenuating circumstances, substitutes are not allowed during a reconvening of a CVR group. Approval for a substitute must be obtained in advance from the Directors of the Offices of Research and Engineering and Aviation Safety, via the CVR group chairman.
- 8.16. The individual group members may only listen to the CVR recording in a group setting.
- 8.17. Once a CVR group meeting has started, the group members are not allowed to leave the group until the transcript of recorded events has been completed and the CVR group chairman authorizes the group to be dismissed.

## **9 CVR Transcription**

- 9.1. The CVR group commences transcription at either the beginning of the recording or at the point decided upon by the Directors of the Offices of Research and Engineering and Aviation Safety in consultation with the IIC.
- 9.2. The transcript produced by a CVR group is a factual record of audio events. In discerning an audio event, if a disagreement arises among the group members, the differing observations may be documented in the transcript. Inclusion of differing observations within the final transcript is the discretion of the Directors of the Offices of Research and Engineering and Aviation Safety.
- 9.3. Non-verbal audio and other CVR noise events that are distinctly identifiable are noted as “sound similar to...” within the transcript. Typical noise events identified in a transcript include: engine sounds, crew seat movement, windshield wiper motors, and aircraft aural warnings. Latched/detent handle movement, such as flaps, slats and gear handles, are sometimes generically identified as a “sound similar to latched/detent handle movement.” Care shall be exercised when associating generic noises, such as clicks, clacks, and thumps, with a specific action or event. In general, any noise, or series of

- noises, associated with a specific event or action must be distinctive and readily identifiable by itself out of context from the CVR recording.
- 9.4. It is possible for an audio event to be recorded on several channels by several microphone sources. The sound source identified in the transcript is the source with the clearest audio.
  - 9.5. All conversation recorded (within the portions of the recording specified by the Directors and the IIC prior to the group meeting) is transcribed for the draft sent to the Directors of the Offices of Research and Engineering and Aviation Safety. The CVR group does not decide the relevance of crew conversation—the Directors of the Offices of Research and Engineering and Aviation Safety evaluate the transcript for any non-pertinent conversation.
  - 9.6. A coversheet is attached to the preliminary transcript (see attached: *Coversheet for CVR Factual Report/Transcript and Review Log or Release of CVR Factual Report with Transcript to Regional Director*).
  - 9.7. The transcript is punctuated and formatted to standard Safety Board transcript style.
  - 9.8. Safety Board staff must obtain approval from the Directors of the Offices of Research and Engineering and Aviation Safety prior to reviewing a written transcript of a CVR recording.
  - 9.9. Aside from minor editorial corrections by the CVR specialist, any significant changes to the transcript require group consultation and consensus via telephone or through reconvening the CVR group at Safety Board headquarters.
  - 9.10. The transcript may be correlated from the relative time of the recording to local/UTC time of the accident or any other appropriate correlation data point as determined by the CVR specialist. If applicable, the timing and correlation is coordinated with the FDR and Vehicle Performance group chairmen.
  - 9.11. Timing and correlation is not a group activity.
  - 9.12. If ATC, FDR or radar data are unavailable or do not provide an appropriate correlation point, the IIC shall supply the CVR specialist with a time that may be correlated to a CVR event, such as accident time.

## **10 The CVR Factual Report**

- 10.1. If a CVR group is determined to be unnecessary, the CVR specialist writes a factual report stating that a group was not convened. Additional information may be included in the factual report such as a summary of the recording contents or timing of select audio events.

- 10.2. The CVR factual report typically contains information about the CVR type, operation, damage, recording extraction methods, audio quality, and a summary of transcribed audio events.
- 10.3. If a CVR group convenes to prepare a transcript, the transcript is attached to the CVR factual report.
- 10.4. The Directors of the Offices of Research and Engineering and Aviation Safety review the factual report and/or transcript. Any non-pertinent or expletive remarks or conversations may be edited or deleted from the transcript as deemed necessary by the Directors of the Offices of Research and Engineering and Aviation Safety, before public release.
- 10.5. All notes, preliminary transcript drafts, and copies are destroyed when the content of the CVR transcript has been finalized, unless there is a pending FOIA request, in which all notes and paperwork are retained, as required.

## **11 Safety Board Staff CVR Review and Official Use of CVR Data**

- 11.1. All Safety Board staff and Members who obtain information concerning the contents of a CVR recording or written transcript, regardless of reason or source, are bound by Federal CVR nondisclosure laws.
- 11.2. The Directors of the Offices of Research and Engineering and Aviation Safety coordinate requests from Board Members to review a CVR recording or, prior to public release, a CVR transcript.
- 11.3. All Safety Board staff are required to have approval from the IIC, and the Directors of the Offices of Research and Engineering and Aviation Safety prior to reviewing a CVR recording, transcript, or notes.
- 11.4. All Board Members and staff are required to sign the CVR Audition Log before each audition.
- 11.5. Approval to listen to the recording during subsequent review sessions is covered by the initial approval.
- 11.6. The IIC and other authorized staff may review the transcript, but at no time may any of the information from the CVR recording, notes, or written transcript be shared or distributed (verbally or in writing) to the party members or unauthorized staff until the public release of the CVR factual report with transcript.
- 11.7. Notes may not be taken from the CVR listening room without authorization from the Directors of the Offices of Research and Engineering and Aviation Safety. Notes may be secured by the CVR specialist or destroyed.

- 11.8. To the extent possible, the transcript shall not leave the CVR listening room prior to public release, except in the following instances:
- 11.8.1. With approval from Directors of the Offices of Research and Engineering and Aviation Safety, and in consultation with the IIC and CVR group chairman, authorized staff may recreate portions of the CVR recording or transcript, in their report, as necessary for the investigation.
  - 11.8.2. Staff must obtain explicit approval from the Directors of the Offices of Research and Engineering and Aviation Safety to take CVR notes or portions of the transcript outside of the CVR listening room. At all times, the authorized staff must ensure the security of CVR-related portions of their reports and CVR notes. When finished with any CVR notes, the notes shall be returned to the CVR group chairman for storage or destruction.
  - 11.8.3. No unauthorized copies of the CVR factual report or CVR transcript shall be made. An authorized copy may be given to Safety Board staff on a case-by-case basis with explicit written approval from the Directors of the Offices of Research and Engineering and Aviation Safety. The CVR group chairman shall clearly mark the authorized copy to indicate that it is a draft copy or a copy of the final pre-released report. The transcript must be marked “DUPLICATE” or “COPY,” indicating that it is not the original. A coversheet shall be attached to the report or transcript (see attached: *Coversheet for CVR Factual Report/Transcript and Review Log*) and the authorized staff shall sign the coversheet’s review log. The coversheet must also clearly indicate that the copy must be returned to the CVR group chairman. The name of the Safety Board staff that has been authorized to use the copy must also be clearly stated on the coversheet. The copy must be returned to the CVR group chairman for destruction.
- 11.9. CVR-related sections of other group chairmen reports may not be distributed to any party coordinators, group members, unauthorized staff, or the general public prior to the public release of the CVR factual report with transcript.

## **12 Public Release of the CVR Factual Report and Transcript**

- 12.1. After the report review process, the CVR specialist maintains the security of the factual report and transcript. The release of the factual report with transcript into the public docket is coordinated through the CVR group chairman, the Chief of the Vehicle Recorder Division and either a) the IIC for a major investigation, or b) the Regional Office Director with the IIC for a regional investigation. A placeholder will be placed in the Docket Management System (DMS) until immediately prior to the docket’s release to the public. (see *Docket Management System CVR Report Placeholder*).
- 12.2. For the case of a CVR factual report without an attached transcript, the factual report may be released to the IIC after the report review process.

- 12.3. Per 49 U.S.C. §1114(c), a factual report with a transcript is released to the public only when the docket is opened to the public (see *49 U.S.C. §1114—Disclosure, availability, and use of information*). Upon the opening of the docket, the CVR factual report with transcript may be made available through electronic means, including via the Safety Board’s website: <http://www.nts.gov>.
- 12.3.1. In the event that a public hearing is held, the CVR factual report with the attached transcript shall be released into the public docket at the time of the public hearing. The general public, including parties to the investigation, may not receive the CVR transcript prior to the time of the public hearing.
- 12.3.2. In the event that a public hearing is not held, the report is released into the public docket only when the majority of the factual reports are placed into the docket. The general public, including parties to the investigation, may not receive the CVR transcript prior to the time the transcript is placed into the public docket.
- 12.4. The CVR factual report with transcript may be sent to the party coordinators at the time of public release.

### **13 Regional Investigations: Receipt of Factual Report with a Transcript—Prior to Public Release**

- 13.1. For a regional investigation, after the report review process, the CVR specialist may release the factual report with transcript to the IIC, through the Regional Office Director. This is accomplished by mailing the transcript, in a sealed envelope, directly to the Regional Office Director at the regional office. A coversheet shall be attached to the factual report and transcript (see attached: *Release of CVR Factual Report with Transcript to Regional Director*).
- 13.2. It is the Regional Office Director’s responsibility to ensure that appropriate physical security is afforded the written transcript (i.e., stored in a locked file cabinet).
- 13.3. The IIC may check out the transcript from the Regional Office Director and to refer to this secured transcript in the preparation of the IIC’s factual report, but at no time may any of the information contained in the written transcript be shared or distributed to the party members until public release.
- 13.4. Other Safety Board staff must obtain authorization from the Directors of the Offices of Research and Engineering and Aviation Safety prior to reviewing a written transcript of a CVR recording.
- 13.5. Authorized individuals who check out the transcript from the Regional Director are required to sign the cover sheet attached to the factual/transcript. At all times, the authorized staff must ensure the security of the CVR transcript, CVR-related portions of their reports, and CVR notes.

- 13.6. No unauthorized copies of the transcript shall be made.

## **14 Flight Crew and Other CVR Review**

- 14.1. The IIC is responsible for notifying the surviving flight crew of the opportunity to listen to the recording and review the CVR transcript. The crew review is a courtesy extended to the crew, not a requirement.
- 14.2. A CVR specialist supervises the crew's review of the CVR recording and transcript.
- 14.3. The crew is not allowed to participate as a member of the CVR group activities.
- 14.4. After the crew's review, additions or changes shall not be made to the CVR transcript—changes or comments from the crew are noted in the CVR factual report.
- 14.5. A CVR group member may be permitted to accompany a crewmember during the CVR review, if requested by the crewmember.
- 14.6. No copy of the transcript or notes shall leave the CVR listening room.
- 14.7. Any notes taken during the CVR review are collected by the CVR specialist and destroyed.
- 14.8. All individuals who review a CVR recording are required to sign the CVR Audition Log.
- 14.9. At the crewmember's discretion, each crewmember may listen separately or together.
- 14.10. All other non-Safety Board individuals provided the opportunity to listen to a CVR recording must obtain explicit approval from the Directors of the Offices of Research and Engineering and Aviation Safety.
- 14.11. Any individual who reviews a CVR recording is bound by Federal CVR nondisclosure laws.

## **15 Release of the Recorder and Audio Recording**

- 15.1. The IIC shall supply the CVR specialist with the recorder's return organization and address. Ordinarily with minor accidents and incidents, the owner/operator at the time of the accident or incident is the rightful return organization. However, there are instances when the rightful return organization is less apparent, such as when the insurance company has control of the wreckage, or there are fractional owners, or if the aircraft is leased. If there is uncertainty regarding the proper return organization, the IIC and CVR specialist shall contact the General Counsel, who can resolve any issues regarding who shall receive the CVR and original CVR recording.

- 15.2. Because of the sensitivity of CVR recordings, it is possible that the return organization for the CVR unit (the recorder box) is not the same organization that shall receive the original CVR recording medium.
- 15.3. For tape-based CVRs, the CVR unit—minus the recording original tape—may be returned to the owner (or authorized recipient) as soon as the CVR specialist determines that there are no issues related to its operation. The original tape recording is returned to the authorized recipient only after the investigation is complete and the transcript has been released to the public.
- 15.4. Typically with a solid-state recorder and recording, the actual recorder and its memory cannot be easily separated. Therefore, the entire CVR is considered “The Original Recording” and appropriate security measures and protection must be observed.
- 15.5. For solid-state recorders, the CVR, with its solid-state memory, shall not be released until the investigation is completed or otherwise authorized by the Directors of the Offices of Research and Engineering and Aviation Safety on a case-by-case basis.
- 15.6. Prior to returning an original CVR recording medium, the CVR specialist must obtain specific permission from the Directors of the Offices of Research and Engineering and Aviation Safety. The CVR specialist shall notify the IIC of its return.
- 15.7. Copies of the CVR recording shall not be released to the owner, or any other party without the approval of the Directors of the Offices of Research and Engineering and Aviation Safety.

## **16 Military Investigations or Other Federal Agencies**

- 16.1. On occasion the Safety Board is asked to assist with the recovery and read-out of a CVR involved in a military/Federal accident investigation. The specific tasks requested by the DOD or Federal agency and the extent of participation by the Safety Board audio laboratory is determined by the Directors of the Offices of Research and Engineering and Aviation Safety. The requirements of the CVR specialist may include: downloading the CVR, producing audio copies of the recording, preparing a transcript, or running a CVR group.
- 16.2. Generally, a brief report of CVR-related procedures performed may be required by the investigating organization.
- 16.3. Normally, the original and copies of the recording and reports are returned to the investigating agency. The Safety Board shall not retain any copies.



## **17 NTSB Investigation with Foreign Representatives**

- 17.1. When the Safety Board conducts an investigation that involves a foreign operator/manufacturer, Safety Board CVR procedures and policies apply, in consultation with the foreign government's Accredited Representative. Coordination between the governments is managed by the IIC with the Directors of the Offices of Research and Engineering and Aviation Safety, and the foreign government's Accredited Representative.
- 17.2. If the recording contains useable audio, the initial audition is conducted by the Directors of the Offices of Research and Engineering and Aviation Safety (or their designees). The foreign government's Accredited Representative and their designees may be provided the opportunity to review the recording prior to the CVR group meeting.
- 17.3. Participants from the foreign government and their technical advisors shall be clearly identified to the CVR specialist to avoid unauthorized access to the recording or written transcript.
- 17.4. The Safety Board and the French Bureau Enquetes-Accidents have a Memorandum of Agreement that defines the cooperation between the two countries (see attached: *NTSB and BEA Memorandum of Agreement*).

## **18 Foreign Investigations with NTSB Participation or Assistance**

- 18.1. Under ICAO Annex 13, when the Safety Board is asked to participate or assist in an investigation that occurs outside of the United States, the Safety Board audio laboratory may be used for the CVR portion of the investigation.
- 18.2. If the Safety Board assists a foreign government in their accident investigation and the services of a CVR specialist are required, the Safety Board's Accredited Representative shall coordinate the requested services through the Directors of the Offices of Research and Engineering and Aviation Safety. Assistance in the CVR portion of a foreign investigation may include: downloading the CVR, producing audio copies of the recording, preparing a transcript, or running a CVR group.
- 18.3. Any subsequent sound spectrum analysis of the CVR recording shall be arranged through the Safety Board's Accredited Representative in consultation with the Director of Research and Engineering. Sound spectrum work may require additional Safety Board staff and resources, and it shall not be assumed that the work is automatically included as part of the CVR activities.
- 18.4. The point of contact for the foreign investigation (the IIC or the designee) is introduced to the CVR specialist. It shall be made clear to all participants involved with the CVR activities that the CVR specialist shall only be coordinating with the foreign government through the individual designated as the point of contact.

- 18.5. Participants from the foreign government and their technical advisors shall clearly be identified to the CVR specialist to avoid unauthorized access to the recording or written transcript.
- 18.6. The CVR specialist shall keep the Safety Board's Accredited Representative and the foreign government's IIC or designee apprised of any CVR activities or actions.
- 18.7. When assisting in a foreign government's investigation, the CVR specialist may suggest to the investigating government's IIC or designee the CVR policies and procedures that are used by the Safety Board. However, if the foreign government wishes to use its own policies or procedures, the CVR specialist shall try to comply. In the absence of specific guidance from the investigating government, pertinent Safety Board CVR standard practices and procedures apply.
- 18.8. Any issues or conflicts concerning procedures shall immediately be brought to the attention of the Directors of the Offices of Research and Engineering and Aviation Safety, in consultation with the Safety Board's Accredited Representative, for immediate resolution.
- 18.9. Generally, the investigating government may require a brief report of procedures performed, along with a written transcript of the CVR recording, if applicable.
- 18.10. At the request of the foreign government's IIC or designee, audio copies and written transcripts and reports shall be distributed, in consultation with the Safety Board's Accredited Representative and the Directors of the Offices of Research and Engineering and Aviation Safety.
- 18.11. The original recording and recorder shall be returned to the foreign government's IIC or designee. The Safety Board shall not retain copies of the CVR recording.
- 18.12. During a foreign investigation, the foreign officials are guests of the Safety Board and shall be welcomed accordingly. During the CVR activities, coordination of daily events, such as meeting time, lunch and other breaks, are the responsibility of the CVR specialist. To facilitate our accommodating their needs, other concerns regarding faxes, telephones, hotels, transportation, travel arrangements, and investigation activities not related to the CVR shall be coordinated through and brought to the attention of the Accredited Representative or the Office of Aviation Safety delegate. Additional Safety Board staff may be needed to assist with these other concerns. During the initial meeting after the arrival of the foreign officials, the role of the CVR specialist shall be relayed to the group participants in order to avoid unnecessary delays in completing the CVR activities.
- 18.13. The Safety Board and the French Bureau Enquetes-Accidents have a Memorandum of Agreement that defines the cooperation between the two countries (see attached: *NTSB and BEA Memorandum of Agreement*).
- 18.14. Investigations with Safety Board participation or assistance are protected from FOIA requests for 2 years.

**ATTACHMENT A: Statement of Party Representatives to  
NTSB Investigation**





## **ATTACHMENT B: CVR Non-Disclosure Agreement**



**831.11 Parties to the investigation.**

(a) All Investigations, regardless of mode.

(1) The investigator-in-charge designates parties to participate in the investigation. Parties shall be limited to those persons, government agencies, companies, and associations whose employees, functions, activities, or products were involved in the accident or incident and who can provide suitable qualified technical personnel actively to assist in the investigation. Other than the FAA in aviation cases, no other entity is afforded the right to participate in Board investigations.

(2) Participants in the investigation (i.e., party representatives, party coordinators, and/or the larger party organization) shall be responsive to the direction of Board representatives and may lose party status if they do not comply with their assigned duties and activity proscriptions or instructions, or if they conduct themselves in a manner prejudicial to the investigation.

(3) No party to the investigation shall be represented in any aspect of the NTSB investigation by any person who also represents claimants or insurers. No party representative may occupy a legal position (see **845.13** of this chapter). Failure to comply with these provisions may result in sanctions, including loss of status as a party.

(4) Title 49, United States Code **1132** provides for the appropriate participation of the FAA in Board investigations, and **1131(a)(2)** provides for such participation by other departments, agencies, or instrumentalities. The FAA and those other entities that meet the requirements of paragraph (a)(1) of this section will be parties to the investigation with the same rights and privileges and subject to the same limitations as other parties, provided however that representatives of the FAA need not sign the "*Statement of Party Representatives to NTSB Investigation*" (see paragraph (b) of this section).

(b) Aviation investigations. In addition to compliance with the provision of paragraph (a) of this section, and to assist in ensuring complete understanding of the requirements and limitations of party status, all party representatives in aviation investigations shall sign "*Statement of Party Representatives to NTSB Investigation*" immediately upon attaining party representative status. Failure timely to sign the statement may result in sanctions, including loss of status as a party.

**831.13 Flow and dissemination of accident or incident information.**

(a) Release of information during the field investigation, particularly at the accident scene, shall be limited to factual developments, and shall be made only through the Board Member present at the accident scene, the representative of the Board's Office of Public Affairs, or the investigator-in-charge.

(b) All information concerning the accident or incident obtained by any person or organization participating in the investigation shall be passed to the IIC through appropriate channels before being provided to any individual outside the investigation. Parties to the investigation may relay to their respective organizations information necessary for purposes of prevention or remedial action. However, no information concerning the accident or incident may be released to any person not a party representative to the investigation (including non-party representative employees of the party organization) before initial release by the Safety Board without prior consultation and approval of the IIC.



**ATTACHMENT C:      Coversheet for CVR Factual  
Report/Transcript and Review Log**





**ATTACHMENT D: Release of CVR Factual Report with  
Transcript to Regional Director**



**National Transportation  
Safety Board**

**Memorandum**

---

Date: \_\_\_\_\_

To: \_\_\_\_\_  
Regional Director

From: \_\_\_\_\_  
CVR Group Chairman

Subject: Regional Investigation-CVR Factual Report/Transcript Release

NTSB Number: \_\_\_\_\_

IIC: \_\_\_\_\_

Prior to public release of this CVR report/transcript, the following procedures are applicable:

**THIS DOCUMENT IS FOR OFFICIAL USE ONLY. DUPLICATION IS PROHIBITED.**

ACCESS TO THIS TRANSCRIPT SHALL BE AUTHORIZED ONLY BY AS-1 AND RE-1 (OR AS-2M OR RE-2, IF NECESSARY).

THIS DOCUMENT IS NOT TO BE LEFT UNSECURED AND UNATTENDED.

THE REGIONAL DIRECTOR IS RESPONSIBLE FOR KEEPING THIS TRANSCRIPT SECURE. THE INVESTIGATOR-IN-CHARGE OR OTHER NTSB PERSONELL AUTHORIZED BY AS-1 AND RE-1 MAY TEMPORARILY "CHECK OUT" THIS DOCUMENT FROM THE REGIONAL DIRECTOR.

A LOG SHALL BE MAINTAINED TO DEFINE WHO HAS HAD ACCESS TO THIS TRANSCRIPT.

THIS DOCUMENT IS PROVIDED TO THE REGION OUTSIDE NORMAL CVR SECURITY CONTROL.

THIS DOCUMENT IS NOT TO BE SHARED OUTSIDE SAFETY BOARD STAFF.

Print Name	Signature	Date/Time OUT	Date/Time IN
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



## **ATTACHMENT E: Federal CVR Legislation and Regulations**

# Federal CVR Legislation and Regulations

The following codes are referenced in this section: 49 U.S.C. §1114, 49 CFR 831.11, 49 CFR 831.13, 14 CFR 23.1457, 14 CFR 25.1457, 14 CFR 27.1457, 14 CFR 29.1457, 14 CFR 121.359, 14 CFR 135.151, 14 CFR 91.609, and 49 U.S.C. § 1154. **Please check the appropriate sections and codes to obtain current regulations\***.

## **From 49 U.S.C. §1114—Disclosure, availability, and use of information**

(c) COCKPIT RECORDINGS AND TRANSCRIPTS.--(1) The Board may not disclose publicly any part of a cockpit voice or video recorder recording or transcript of oral communications by and between flight crew members and ground stations related to an accident or incident investigated by the Board. However, the Board shall make public any part of a transcript or any written depiction of visual information the Board decides is relevant to the accident or incident--

(A) if the Board holds a public hearing on the accident or incident, at the time of the hearing; or

(B) if the Board does not hold a public hearing, at the time a majority of the other factual reports on the accident or incident are placed in the public docket.

(2) This subsection does not prevent the Board from referring at any time to cockpit voice or video recorder information in making safety recommendations.

(d) SURFACE VEHICLE RECORDINGS AND TRANSCRIPTS.-

(1) CONFIDENTIALITY OF RECORDINGS.-The Board may not disclose publicly any part of a surface vehicle voice or video recorder recording or transcript of oral communications by or among drivers, train employees, or other operating employees responsible for the movement and direction of the vehicle or vessel, or between such operating employees and company communication centers, related to an accident investigated by the Board. However, the Board shall make public any part of a transcript or any written depiction of visual information that the Board decides is relevant to the accident-

(A) if the Board holds a public hearing on the accident, at the time of the hearing; or

(B) if the Board does not hold a public hearing, at the time a majority of the other factual reports on the accident are placed in the public docket.

(2) REFERENCES TO INFORMATION IN MAKING SAFETY RECOMMENDATIONS.- This subsection does not prevent the Board from referring at any time to voice or video recorder information in making safety recommendations.

## **From 49 CFR 831.11—Parties to the investigation**

(a) All Investigations, regardless of mode. (1) The investigator-in-charge designates parties to participate in the investigation. Parties shall be limited to those persons, government agencies, companies, and associations whose employees, functions, activities, or products were involved in the accident or incident and who can provide suitable qualified technical personnel actively to assist in the investigation. Other than the FAA in aviation cases, no other entity is afforded the right to participate in Board investigations.

(2) Participants in the investigation (i.e., party representatives, party coordinators, and/or the larger party organization) shall be responsive to the direction of Board representatives and may lose

---

\* Section is current, as of November 2001. Internet website addresses of complete and current regulations: *Code of Federal Regulations:* <http://www.access.gpo.gov/nara/cfr/index.html>  
*United States Code:* <http://uscode.house.gov/uscode.htm>



party status if they do not comply with their assigned duties and activity proscriptions or instructions, or if they conduct themselves in a manner prejudicial to the investigation.

- (b) Aviation investigations. In addition to compliance with the provisions of paragraph (a) of this section, and to assist in ensuring complete understanding of the requirements and limitations of party status, all party representatives in aviation investigations shall sign "Statement of Party Representatives to NTSB Investigation" immediately upon attaining party representative status. Failure timely to sign that statement may result in sanctions, including loss of status as a party.

### **From 49 CFR 831.13—Flow and dissemination of accident or incident information**

- (b) All information concerning the accident or incident obtained by any person or organization participating in the investigation shall be passed to the IIC through appropriate channels before being provided to any individual outside the investigation. Parties to the investigation may relay to their respective organizations information necessary for purposes of prevention or remedial action. However, no information concerning the accident or incident may be released to any person not a party representative to the investigation (including non-party representative employees of the party organization) before initial release by the Safety Board without prior consultation and approval of the IIC.

### **From 14 CFR 23.1457—Airworthiness Standards: Normal, Utility, Acrobatic, and Commuter Category Airplanes – Cockpit Voice Recorders**

(a) Each cockpit voice recorder required by the operating rules of this chapter must be approved and must be installed so that it will record the following:

- (1) Voice communications transmitted from or received in the airplane by radio.
- (2) Voice communications of flight crewmembers on the flight deck.
- (3) Voice communications of flight crewmembers on the flight deck, using the airplane's interphone system.
- (4) Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker.
- (5) Voice communications of flight crewmembers using the passenger loudspeaker system, if there is such a system and if the fourth channel is available in accordance with the requirements of paragraph (c)(4)(ii) of this section.

(b) The recording requirements of paragraph (a)(2) of this section must be met by installing a cockpit-mounted area microphone, located in the best position for recording voice communications originating at the first and second pilot stations and voice communications of other crewmembers on the flight deck when directed to those stations. The microphone must be so located and, if necessary, the preamplifiers and filters of the recorder must be so adjusted or supplemented, so that the intelligibility of the recorded communications is as high as practicable when recorded under flight cockpit noise conditions and played back. Repeated aural or visual playback of the record may be used in evaluating intelligibility.

(c) Each cockpit voice recorder must be installed so that the part of the communication or audio signals specified in paragraph (a) of this section obtained from each of the following sources is recorded on a separate channel:

- (1) For the first channel, from each boom, mask, or handheld microphone, headset, or speaker used at the first pilot station.

(2) For the second channel from each boom, mask, or handheld microphone, headset, or speaker used at the second pilot station.

(3) For the third channel--from the cockpit-mounted area microphone.

(4) For the fourth channel from:

(i) Each boom, mask, or handheld microphone, headset, or speaker used at the station for the third and fourth crewmembers.

(ii) If the stations specified in paragraph (c)(4)(i) of this section are not required or if the signal at such a station is picked up by another channel, each microphone on the flight deck that is used with the passenger loudspeaker system, if its signals are not picked up by another channel.

(5) And that as far as is practicable all sounds received by the microphone listed in paragraphs (c)(1), (2), and (4) of this section must be recorded without interruption irrespective of the position of the interphone-transmitter key switch. The design shall ensure that sidetone for the flight crew is produced only when the interphone, public address system, or radio transmitters are in use.

(d) Each cockpit voice recorder must be installed so that:

(1) It receives its electric power from the bus that provides the maximum reliability for operation of the cockpit voice recorder without jeopardizing service to essential or emergency loads.

(2) There is an automatic means to simultaneously stop the recorder and prevent each erasure feature from functioning, within 10 minutes after crash impact; and

(3) There is an aural or visual means for preflight checking of the recorder for proper operation.

(e) The record container must be located and mounted to minimize the probability of rupture of the container as a result of crash impact and consequent heat damage to the record from fire. In meeting this requirement, the record container must be as far aft as practicable, but may not be where aft mounted engines may crush the container during impact. However, it need not be outside of the pressurized compartment.

(f) If the cockpit voice recorder has a bulk erasure device, the installation must be designed to minimize the probability of inadvertent operation and actuation of the device during crash impact.

(g) Each recorder container must:

(1) Be either bright orange or bright yellow;

(2) Have reflective tape affixed to its external surface to facilitate its location under water; and

(3) Have an underwater locating device, when required by the operating rules of this chapter, on or adjacent to the container which is secured in such manner that they are not likely to be separated during crash impact.

[Amdt. 23-35, 53 FR 26142, July 11, 1988]

## **From 14 CFR 25.1457--Airworthiness Standards: Transport Category Airplanes--Cockpit Voice Recorders**

(a) Each cockpit voice recorder required by the operating rules of this chapter must be approved and must be installed so that it will record the following:

(1) Voice communications transmitted from or received in the airplane by radio.

(2) Voice communications of flight crewmembers on the flight deck.

(3) Voice communications of flight crewmembers on the flight deck, using the airplane's interphone system.

(4) Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker.

(5) Voice communications of flight crewmembers using the passenger loudspeaker system, if there is such a system and if the fourth channel is available in accordance with the requirements of paragraph (c)(4)(ii) of this section.

(b) The recording requirements of paragraph (a)(2) of this section must be met by installing a cockpit-mounted area microphone, located in the best position for recording voice communications

originating at the first and second pilot stations and voice communications of other crewmembers on the flight deck when directed to those stations. The microphone must be so located and, if necessary, the preamplifiers and filters of the recorder must be so adjusted or supplemented, that the intelligibility of the recorded communications is as high as practicable when recorded under flight cockpit noise conditions and played back. Repeated aural or visual playback of the record may be used in evaluating intelligibility.

(c) Each cockpit voice recorder must be installed so that the part of the communication or audio signals specified in paragraph (a) of this section obtained from each of the following sources is recorded on a separate channel:

(1) For the first channel, from each boom, mask, or hand-held microphone, headset, or speaker used at the first pilot station.

(2) For the second channel from each boom, mask, or hand-held microphone, headset, or speaker used at the second pilot station.

(3) For the third channel--from the cockpit-mounted area microphone.

(4) For the fourth channel, from--

(i) Each boom, mask, or hand-held microphone, headset, or speaker used at the station for the third and fourth crew members; or

(ii) If the stations specified in paragraph (c)(4)(i) of this section are not required or if the signal at such a station is picked up by another channel, each microphone on the flight deck that is used with the passenger loudspeaker system, if its signals are not picked up by another channel.

(5) As far as is practicable all sounds received by the microphone listed in paragraphs (c)(1), (2), and (4) of this section must be recorded without interruption irrespective of the position of the interphone-transmitter key switch. The design shall ensure that sidetone for the flight crew is produced only when the interphone, public address system, or radio transmitters are in use.

(d) Each cockpit voice recorder must be installed so that--

(1) It receives its electric power from the bus that provides the maximum reliability for operation of the cockpit voice recorder without jeopardizing service to essential or emergency loads;

(2) There is an automatic means to simultaneously stop the recorder and prevent each erasure feature from functioning, within 10 minutes after crash impact; and

(3) There is an aural or visual means for preflight checking of the recorder for proper operation.

(e) The record container must be located and mounted to minimize the probability of rupture of the container as a result of crash impact and consequent heat damage to the record from fire. In meeting this requirement, the record container must be as far aft as practicable, but may not be where aft mounted engines may crush the container during impact. However, it need not be outside of the pressurized compartment.

(f) If the cockpit voice recorder has a bulk erasure device, the installation must be designed to minimize the probability of inadvertent operation and actuation of the device during crash impact.

(g) Each recorder container must--

(1) Be either bright orange or bright yellow;

(2) Have reflective tape affixed to its external surface to facilitate its location under water; and

(3) Have an underwater locating device, when required by the operating rules of this chapter, on or adjacent to the container which is secured in such manner that they are not likely to be separated during crash impact.

[Doc. No. 5066, 29 FR 18291, Dec. 24, 1964, as amended by Amdt. 25-2, 30 FR 3932, Mar. 26, 1965; Amdt. 25-16, 32 FR 13914, Oct. 6, 1967; Amdt. 25-41, 42 FR 36971, July 18, 1977; Amdt. 25-65, 53 FR 26143, July 11, 1988]

## From 14 CFR 27.1457–Airworthiness Standards: Normal Category Rotorcraft–Cockpit Voice Recorders

(a) Each cockpit voice recorder required by the operating rules of this chapter must be approved, and must be installed so that it will record the following:

- (1) Voice communications transmitted from or received in the rotorcraft by radio.
- (2) Voice communications of flight crewmembers on the flight deck.
- (3) Voice communications of flight crewmembers on the flight deck, using the rotorcraft's interphone system.
- (4) Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker.

(5) Voice communications of flight crewmembers using the passenger loudspeaker system, if there is such a system, and if the fourth channel is available in accordance with the requirements of paragraph (c)(4)(ii) of this section.

(b) The recording requirements of paragraph (a)(2) of this section may be met:

(1) By installing a cockpit-mounted area microphone located in the best position for recording voice communications originating at the first and second pilot stations and voice communications of other crewmembers on the flight deck when directed to those stations; or

(2) By installing a continually energized or voice-actuated lip microphone at the first and second pilot stations. The microphone specified in this paragraph must be so located and, if necessary, the preamplifiers and filters of the recorder must be adjusted or supplemented so that the recorded communications are intelligible when recorded under flight cockpit noise conditions and played back. The level of intelligibility must be approved by the Administrator. Repeated aural or visual playback of the record may be used in evaluating intelligibility.

(c) Each cockpit voice recorder must be installed so that the part of the communication or audio signals specified in paragraph (a) of this section obtained from each of the following sources is recorded on a separate channel:

(1) For the first channel, from each microphone, headset, or speaker used at the first pilot station.

(2) For the second channel, from each microphone, headset, or speaker used at the second pilot station.

(3) For the third channel, from the cockpit-mounted area microphone, or the continually energized or voice-actuated lip microphone at the first and second pilot stations.

(4) For the fourth channel, from:

(i) Each microphone, headset, or speaker used at the stations for the third and fourth crewmembers; or

(ii) If the stations specified in paragraph (c)(4)(i) of this section are not required or if the signal at such a station is picked up by another channel, each microphone on the flight deck that is used with the passenger loudspeaker system if its signals are not picked up by another channel.

(iii) Each microphone on the flight deck that is used with the rotorcraft's loudspeaker system if its signals are not picked up by another channel.

(d) Each cockpit voice recorder must be installed so that:

(1) It receives its electric power from the bus that provides the maximum reliability for operation of the cockpit voice recorder without jeopardizing service to essential or emergency loads;

(2) There is an automatic means to simultaneously stop the recorder and prevent each erasure feature from functioning, within 10 minutes after crash impact; and

(3) There is an aural or visual means for preflight checking of the recorder for proper operation.

(e) The record container must be located and mounted to minimize the probability of rupture of the container as a result of crash impact and consequent heat damage to the record from fire.

(f) If the cockpit voice recorder has a bulk erasure device, the installation must be designed to minimize the probability of inadvertent operation and actuation of the device during crash impact.

(g) Each recorder container must be either bright orange or bright yellow.  
[Amdt. 27-22, 53 FR 26144, July 11, 1988]

## **From 14 CFR 29.1457–Airworthiness Standards: Transport Category Rotorcraft–Cockpit Voice Recorders**

(a) Each cockpit voice recorder required by the operating rules of this chapter must be approved, and must be installed so that it will record the following:

- (1) Voice communications transmitted from or received in the rotorcraft by radio.
- (2) Voice communications of flight crewmembers on the flight deck.
- (3) Voice communications of flight crewmembers on the flight deck, using the rotorcraft's interphone system.
- (4) Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker.
- (5) Voice communications of flight crewmembers using the passenger loudspeaker system, if there is such a system, and if the fourth channel is available in accordance with the requirements of paragraph (c)(4)(ii) of this section.

(b) The recording requirements of paragraph (a)(2) of this section may be met--

(1) By installing a cockpit-mounted area microphone, located in the best position for recording voice communications originating at the first and second pilot stations and voice communications of other crewmembers on the flight deck when directed to those stations; or

(2) By installing a continually energized or voice-actuated lip microphone at the first and second pilot stations. The microphone specified in this paragraph must be so located and, if necessary, the preamplifiers and filters of the recorder must be so adjusted or supplemented, that the recorded communications are intelligible when recorded under flight cockpit noise conditions and played back. The level of intelligibility must be approved by the Administrator. Repeated aural or visual playback of the record may be used in evaluating intelligibility.

(c) Each cockpit voice recorder must be installed so that the part of the communication or audio signals specified in paragraph (a) of this section obtained from each of the following sources is recorded on a separate channel:

(1) For the first channel, from each microphone, headset, or speaker used at the first pilot station.

(2) For the second channel, from each microphone, headset, or speaker used at the second pilot station.

(3) For the third channel, from the cockpit-mounted area microphone, or the continually energized or voice-actuated lip microphones at the first and second pilot stations.

(4) For the fourth channel, from--

(i) Each microphone, headset, or speaker used at the stations for the third and fourth crewmembers; or

(ii) If the stations specified in paragraph (c)(4)(i) of this section are not required or if the signal at such a station is picked up by another channel, each microphone on the flight deck that is used with the passenger loudspeaker system if its signals are not picked up by another channel.

(iii) Each microphone on the flight deck that is used with the rotorcraft's loudspeaker system if its signals are not picked up by another channel.

(d) Each cockpit voice recorder must be installed so that--

(1) It receives its electric power from the bus that provides the maximum reliability for operation of the cockpit voice recorder without jeopardizing service to essential or emergency loads;

(2) There is an automatic means to simultaneously stop the recorder and prevent each erasure feature from functioning, within 10 minutes after crash impact; and

(3) There is an aural or visual means for preflight checking of the recorder for proper operation.

(e) The record container must be located and mounted to minimize the probability of rupture of the container as a result of crash impact and consequent heat damage to the record from fire.

(f) If the cockpit voice recorder has a bulk erasure device, the installation must be designed to minimize the probability of inadvertent operation and actuation of the device during crash impact.

(g) Each recorder container must be either bright orange or bright yellow.

[Amdt. 29-6, 35 FR 7293, May 9, 1970]

## **From 14 CFR 121.359—Operating Requirements: Domestic, Flag, and Supplemental Operations—Cockpit Voice Recorders**

(a) No certificate holder may operate a large turbine engine powered airplane or a large pressurized airplane with four reciprocating engines unless an approved cockpit voice recorder is installed in that airplane and is operated continuously from the start of the use of the checklist (before starting engines for the purpose of flight), to completion of the final checklist at the termination of the flight.

(b) [Reserved]

(c) The cockpit voice recorder required by paragraph (a) of this section must meet the following application standards:

(1) The requirements of part 25 of this chapter in effect on August 31, 1977.

(2) After September 1, 1980, each recorder container must--

(i) Be either bright orange or bright yellow;

(ii) Have reflective tape affixed to the external surface to facilitate its location under water; and

(iii) Have an approved underwater locating device on or adjacent to the container which is secured in such a manner that they are not likely to be separated during crash impact, unless the cockpit voice recorder, and the flight recorder required by Sec. 121.343, are installed adjacent to each other in such a manner that they are not likely to be separated during crash impact.

(d) No person may operate a multiengine, turbine-powered airplane having a passenger seat configuration of 10-19 seats unless it is equipped with an approved cockpit voice recorder that:

(1) Is installed in compliance with Sec. 23.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); Sec. 25.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g) of this chapter, as applicable; and

(2) Is operated continuously from the use of the checklist before the flight to completion of the final checklist at the end of the flight.

(e) No person may operate a multiengine, turbine-powered airplane having a passenger seat configuration of 20 to 30 seats unless it is equipped with an approved cockpit voice recorder that--

(1) Is installed in compliance with Sec. 23.1457 or Sec. 25.1457 of this chapter, as applicable; and

(2) Is operated continuously from the use of the checklist before the flight to completion of the final checklist at the end of the flight.

(f) 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.

(g) For those aircraft equipped to record the uninterrupted audio signals received by a boom or a mask microphone, the flight crewmembers are required to use the boom microphone below 18,000 feet mean sea level. No person may operate a large turbine engine powered airplane or a large pressurized airplane with four reciprocating engines manufactured after October 11, 1991, or on which a cockpit voice recorder has been installed after October 11, 1991, unless it is equipped to

record the uninterrupted audio signal received by a boom or mask microphone in accordance with Sec. 25.1457(c)(5) of this chapter.

(h) In the event of an accident or occurrence requiring immediate notification of the National Transportation Safety Board under part 830 of its regulations, which results in the termination of the flight, the certificate holder shall keep the recorded information for at least 60 days or, if requested by the Administrator or the Board, for a longer period. Information obtained from the record is used to assist in determining the cause of accidents or occurrences in connection with investigations under part 830. The Administrator does not use the record in any civil penalty or certificate action.

[Doc. No. 6258, 29 FR 19205, Dec. 31, 1964, as amended by Amdt. 121-20, 31 FR 8912, June 28, 1966; Amdt. 121-23, 31 FR 15192, Dec. 3, 1966; Amdt. 121-32, 32 FR 13914, Oct. 6, 1967; Amdt. 121-130, 41 FR 47229, Oct. 28, 1976; Amdt. 121-135, 42 FR 36973, July 18, 1977; Amdt. 121-143, 43 FR 22642, May 25, 1978; Amdt. 121-197, 53 FR 26147, July 11, 1988; Amdt. 121-251, 60 FR 65933, Dec. 20, 1995]

### **From 14 CFR 135.151—Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft—Cockpit Voice Recorder**

(a) No person may operate a multiengine, turbine-powered airplane or rotorcraft having a passenger seating configuration of six or more and for which two pilots are required by certification or operating rules unless it is equipped with an approved cockpit voice recorder that:

(1) Is installed in compliance with Sec. 23.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); Sec. 25.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); Sec. 27.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); or Sec. 29.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g) of this chapter, as applicable; and

(2) Is operated continuously from the use of the check list before the flight to completion of the final check list at the end of the flight.

(b) No person may operate a multiengine, turbine-powered airplane or rotorcraft having a passenger seating configuration of 20 or more seats unless it is equipped with an approved cockpit voice recorder that--

(1) Is installed in compliance with Sec. 23.1457, Sec. 25.1457, Sec. 27.1457 or Sec. 29.1457 of this chapter, as applicable; and

(2) Is operated continuously from the use of the check list before the flight to completion of the final check list at the end of the flight.

(c) In the event of an accident, or occurrence requiring immediate notification of the National Transportation Safety Board which results in termination of the flight, the certificate holder shall keep the recorded information for at least 60 days or, if requested by the Administrator or the Board, for a longer period. Information obtained from the record may be used to assist in determining the cause of accidents or occurrences in connection with investigations. The Administrator does not use the record in any civil penalty or certificate action.

(d) For those aircraft equipped to record the uninterrupted audio signals received by a boom or a mask microphone the flight crewmembers are required to use the boom microphone below 18,000 feet mean sea level. No person may operate a large turbine engine powered airplane manufactured after October 11, 1991, or on which a cockpit voice recorder has been installed after October 11, 1991, unless it is equipped to record the uninterrupted audio signal received by a boom or mask microphone in accordance with Sec. 25.1457(c)(5) of this chapter.

(e) In complying with this section, an approved cockpit voice recorder having an erasure feature may be used, so that during the operation of the recorder, information:

(1) Recorded in accordance with paragraph (a) of this section and recorded more than 15 minutes earlier; or

(2) Recorded in accordance with paragraph (b) of this section and recorded more than 30 minutes earlier; may be erased or otherwise obliterated.

[Doc. No. 16097, 43 FR 46783, Oct. 10, 1978, as amended by Amdt. 135-23, 52 FR 9637, Mar. 25, 1987; Amdt. 135-26, 53 FR 26151, July 11, 1988; Amdt. 135-60, 61 FR 2616, Jan. 26, 1996]

## **From 14 CFR 91.609—General Operating and Flight Rules—Flight Recorders and Cockpit Voice Recorders**

(a) No holder of an air carrier operating certificate or an operating certificate may conduct any operation under this part with an aircraft listed in the holder's operations specifications or current list of aircraft used in air transportation unless that aircraft complies with any applicable flight recorder and cockpit voice recorder requirements of the part under which its certificate is issued except that the operator may--

(1) Ferry an aircraft with an inoperative flight recorder or cockpit voice recorder from a place where repair or replacement cannot be made to a place where they can be made;

(2) Continue a flight as originally planned, if the flight recorder or cockpit voice recorder becomes inoperative after the aircraft has taken off;

(3) Conduct an airworthiness flight test during which the flight recorder or cockpit voice recorder is turned off to test it or to test any communications or electrical equipment installed in the aircraft; or

(4) Ferry a newly acquired aircraft from the place where possession of it is taken to a place where the flight recorder or cockpit voice recorder is to be installed.

(b) Notwithstanding paragraphs (c) and (e) of this section, an operator other than the holder of an air carrier or a commercial operator certificate may--

(1) Ferry an aircraft with an inoperative flight recorder or cockpit voice recorder from a place where repair or replacement cannot be made to a place where they can be made;

(2) Continue a flight as originally planned if the flight recorder or cockpit voice recorder becomes inoperative after the aircraft has taken off;

(3) Conduct an airworthiness flight test during which the flight recorder or cockpit voice recorder is turned off to test it or to test any communications or electrical equipment installed in the aircraft;

(4) Ferry a newly acquired aircraft from a place where possession of it was taken to a place where the flight recorder or cockpit voice recorder is to be installed; or

(5) Operate an aircraft:

(i) For not more than 15 days while the flight recorder and/or cockpit voice recorder is inoperative and/or removed for repair provided that the aircraft maintenance records contain an entry that indicates the date of failure, and a placard is located in view of the pilot to show that the flight recorder or cockpit voice recorder is inoperative.

(ii) For not more than an additional 15 days, provided that the requirements in paragraph (b)(5)(i) are met and that a certificated pilot, or a certificated person authorized to return an aircraft to service under Sec. 43.7 of this chapter, certifies in the aircraft maintenance records that additional time is required to complete repairs or obtain a replacement unit.

(c) No person may operate a U.S. civil registered, multiengine, turbine-powered airplane or rotorcraft having a passenger seating configuration, excluding any pilot seats of 10 or more that has been manufactured after October 11, 1991, unless it is equipped with one or more approved flight recorders that utilize a digital method of recording and storing data and a method of readily retrieving that data from the storage medium, that are capable of recording the data specified in appendix E to this part, for an airplane, or appendix F to this part, for a rotorcraft, of this part within



the range, accuracy, and recording interval specified, and that are capable of retaining no less than 8 hours of aircraft operation.

(d) Whenever a flight recorder, required by this section, is installed, it must be operated continuously from the instant the airplane begins the takeoff roll or the rotorcraft begins lift-off until the airplane has completed the landing roll or the rotorcraft has landed at its destination.

(e) Unless otherwise authorized by the Administrator, after October 11, 1991, no person may operate a U.S. civil registered multiengine, turbine-powered airplane or rotorcraft having a passenger seating configuration of six passengers or more and for which two pilots are required by type certification or operating rule unless it is equipped with an approved cockpit voice recorder that:

(1) Is installed in compliance with Sec. 23.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); Sec. 25.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); Sec. 27.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g); or Sec. 29.1457(a) (1) and (2), (b), (c), (d), (e), (f), and (g) of this chapter, as applicable; and

(2) Is operated continuously from the use of the checklist before the flight to completion of the final checklist at the end of the flight.

(f) 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 15 minutes earlier may be erased or otherwise obliterated.

(g) In the event of an accident or occurrence requiring immediate notification to the National Transportation Safety Board under part 830 of its regulations that results in the termination of the flight, any operator who has installed approved flight recorders and approved cockpit voice recorders shall keep the recorded information for at least 60 days or, if requested by the Administrator or the Board, for a longer period. Information obtained from the record is used to assist in determining the cause of accidents or occurrences in connection with the investigation under part 830. The Administrator does not use the cockpit voice recorder record in any civil penalty or certificate action.

[Doc. No. 18334, 54 FR 34318, Aug. 18, 1989, as amended by Amdt. 91-226, 56 FR 51621, Oct. 11, 1991; Amdt. 91-228, 57 FR 19353, May 5, 1992]

## **From 49 U.S.C. §1154–Discovery and use of cockpit and surface vehicle recordings and transcripts**

(a) TRANSCRIPTS AND RECORDINGS.--(1) Except as provided by this subsection, a party in a judicial proceeding may not use discovery to obtain--

(A) any part of a cockpit or surface vehicle recorder transcript that the National Transportation Safety Board has not made available to the public under section 1114(c) or 1114(d) of this title; and

(B) a cockpit or surface vehicle recorder recording.

(2)(A) Except as provided in paragraph (4)(A) of this subsection, a court may allow discovery by a party of a cockpit or surface vehicle recorder transcript if, after an in camera review of the transcript, the court decides that--

(i) the part of the transcript made available to the public under section 1114(c) or 1114(d) of this title does not provide the party with sufficient information for the party to receive a fair trial; and

(ii) discovery of additional parts of the transcript is necessary to provide the party with sufficient information for the party to receive a fair trial.

(B) A court may allow discovery, or require production for an in camera review, of a cockpit or surface vehicle recorder transcript that the Board has not made available under section 1114(c) or 1114(d) of this title only if the cockpit or surface vehicle recorder recording is not available.

(3) Except as provided in paragraph (4)(A) of this subsection, a court may allow discovery by a party of a cockpit or surface vehicle recorder recording if, after an in camera review of the recording, the court decides that--

(A) the parts of the transcript made available to the public under section 1114(c) or 1114(d) of this title and to the party through discovery under paragraph (2) of this subsection do not provide the party with sufficient information for the party to receive a fair trial; and

(B) discovery of the cockpit or surface vehicle recorder recording is necessary to provide the party with sufficient information for the party to receive a fair trial.

(4)(A) When a court allows discovery in a judicial proceeding of a part of a cockpit or surface vehicle recorder transcript not made available to the public under section 1114(c) or 1114(d) of this title or a cockpit or surface vehicle recorder recording, the court shall issue a protective order--

(i) to limit the use of the part of the transcript or the recording to the judicial proceeding; and

(ii) to prohibit dissemination of the part of the transcript or the recording to any person that does not need access to the part of the transcript or the recording for the proceeding.

(B) A court may allow a part of a cockpit or surface vehicle recorder transcript not made available to the public under section 1114(c) or 1114(d) of this title or a cockpit or surface vehicle recorder recording to be admitted into evidence in a judicial proceeding, only if the court places the part of the transcript or the recording under seal to prevent the use of the part of the transcript or the recording for purposes other than for the proceeding.

(5) This subsection does not prevent the Board from referring at any time to cockpit or surface vehicle recorder information in making safety recommendations.

(6) In this subsection:

(A) RECORDER.-The term "recorder" means a voice or video recorder.

(B) TRANSCRIPT.-The term "transcript" includes any written depiction of visual information obtained from a video recorder.

**ATTACHMENT F: NTSB and BEA Memorandum of Agreement**

# **Guidelines for the Conduct of International Aviation Accident Investigations Between the National Transportation Safety Board and the Bureau Enquetes-Accidents**

## **1. Purpose**

On March 20, 1985, the Bureau Enquetes-Accident (BEA) and the National Transportation Safety Board (NTSB) signed a Memorandum of Agreement (MOA) to ensure that the investigating agencies coordinate their efforts closely during aircraft accident investigations that involve aircraft equipped with CFM 56 engines, which are jointly manufactured by SNECMA in France and General Electric Aircraft Engines in the United States.

France and the United States are today the major States of design and manufacture for the world's aircraft. As such, they are obligated to either conduct or participate in numerous investigations throughout the world in accordance with Annex 13 to the Convention on International Civil Aviation. In addition, France and the United States are often asked to provide technical assistance, particularly in the readout and analysis of flight recorders, even for investigations that do not meet the specific conditions of Annex 13. Further, in accordance with their international responsibilities, France and the United States must oversee operations and continuing airworthiness of aircraft, as stated in Annexes 6 and 8. This situation has led the NTSB and BEA to recognize the necessity of replacing the previous MOA with these broader guidelines that would extend to accidents and incidents involving aircraft of a maximum mass of more than 2250kg.

Article 26 of the Convention on International Civil Aviation, and Annex 13 to the latter, contain language pointing out the importance for the safety of world air transport that investigations be carried out with the greatest diligence and with the full cooperation of the concerned States.

The purpose of these guidelines is to reinforce the cooperation between the BEA and the NTSB to ensure maximum efficiency for the safety of world civil aviation. The guidelines are also intended to improve communication and exchanges of information between the two agencies.

## **2. Application of Annex 13**

The text of Annex 13 referred to in this document is that of the eighth edition dated July 1994. France and the United States apply the standards and recommended practices contained in Annex 13 within the limits of the specific differences noted.

Insofar as the guidelines serve to reinforce joint work between the two investigating agencies, it is the spirit of Annex 13 that is to be applied. In particular, each agency intends to make its best efforts to overcome potential difficulties arising due to differences in languages, national cultures or geographic locations.

### **3. Definitions**

For application of these guidelines, the definitions of the following words and phrases are to be those specified in or understood from Annex 13:

Accident  
Incident  
Serious incident  
State of Occurrence  
State of Design  
State of Manufacture  
State of Registration  
State of the Operator  
Investigator-in-charge  
Accredited Representative  
Adviser  
Draft final report  
Differences

For the purpose of these guidelines, “agencies” are defined as the BEA and the NTSB.

Along with the accredited representative, there may be a deputy accredited representative, who should be accorded the same rights, in accordance with Annex 13.

### **4. Purpose of Technical Investigations**

The purpose of accident and incident investigations is to determine the facts, conditions and circumstances, to analyze and determine the probable causes of such accidents or incidents, to make recommendations to avoid their recurrence, and to safeguard human lives. It is not to impute fault or establish responsibility in terms of any person or agency or to exonerate any person or agency. Any safety recommendations produced by BEA/NTSB as a result of accident and incident investigations are intended as a means to improve safety and preclude recurrence.

### **5. Notification of Accidents and Incidents**

When an agency becomes aware of an accident or incident that involves the direct interests of the other State, it is to inform the other agency by the most rapid means possible and provide the other agency with all available information consistent with Annex 13 and the laws of the notifying State. Both sides intend to follow the guidance contained in Annex 13 regarding serious incidents.

## **6. Procedures Relating to Investigations of Occurrences Wherein One State is the State of Manufacture, Design, Registration, or of the Operator, and the Other is the State of Occurrence**

### **6.1 Participation in the Investigation**

During investigations conducted by agencies of either State, domestic participants are to participate in the investigation in accordance with the organizational structure prescribed by the investigating agency.

During investigations conducted by agencies of either State, international participants are to participate in the investigation as advisers to the accredited representative of their State in accordance with the organizational structure prescribed in Annex 13.

Normal communication is to be conducted through accredited representative channels. The two agencies are to inform each other of any possible direct communications with a participant or an organization of the other State.

For public hearings and submissions, the organizational structure may be altered to provide participants with the ability to best represent themselves.

### **6.2 Access to Data From an Investigation**

The States affected by the investigation, such as the State of Manufacture or the State of the Operator, have international duties, in accordance primarily with Annexes 6, 8, and 13. In order to fulfill these duties, they need to have access to the information. Therefore, the State responsible for conducting the investigation is to provide the accredited representative from the other State access to all available material, as cited in paragraph 5.25 of Annex 13. The accredited representative is to receive the material as soon as practicable. See paragraph 6.6 hereafter regarding proprietary or commercially sensitive information.

Such data is to include, but is not to be limited to:

- An electronic copy of the raw, unmanipulated data obtained from the flight data recorder(s)(FDR), including data from all previous flights.
- Computer printouts, data files and plots of the data, once the accuracy of the data files has been established and agreed to by all participants.
- Data obtained from Quick Access Recorders should be handled in the same manner as FDR data, if it is determined that these data are relevant to the investigation. (For example, if they provide more data than the FDR recording).

- A copy of the air traffic control voice recording and transcript of radio communications, and any other available recordings.
- Radar data obtained from civilian sources in prescribed format and authorized, available military sources.
- Plots of the time correlation between radar, FDR, air traffic control recordings, cockpit voice recorder (CVR) data, and other relevant information. These plots are to be produced in a way that does not disclose protected data from the CVR or image recorders.

To ensure confidentiality of the sensitive information contained in CVRs and image recorders, initial readout, examination and analysis of the data derived from these recorders are to be performed only in the laboratory selected by the State conducting the investigation, participants should be limited strictly to:

- the investigator in charge and/or personnel from his agency that he will designate, as well as technically qualified advisers that he will designate, based on the procedures of his agency,
- the accredited representative or his designee,
- technically qualified advisers designated by the accredited representative.

The distribution of transcripts or reports derived from analyses of CVRs and image recorders is to be prohibited until they have been released by the agency conducting the investigation. However, both agencies will proceed in a fully coordinated manner to provide timely and full access to the CVR recording and transcripts to the accredited representative or his designee and to selected advisers in the laboratory of the agency conducting the investigation. Notes are not to be removed from the laboratory.

### **6.3. Analysis, Conclusions, and Development of Safety Recommendations**

#### **6.3.1 Participation in the Analysis, Conclusions, and Development of Safety Recommendations**

The two agencies intend to apply the provisions of paragraph 5.25 of Annex 13, particularly paragraphs g) and i), which state that participation shall confer entitlement to:

- (g) participation in off-scene investigation activities such as component examinations, technical briefings, tests, and simulation;
- (i) make submissions in respect of the various elements of the investigation.

Analysis, and determination of probable causes are the full responsibility of the investigating agency. However, it is strongly recommended that the other participants in the investigation provide their contribution on the study of the factual data and be

associated with the deliberations related to the analysis, findings, causes and safety recommendations. This can best be achieved by regular contacts and discussions between the investigator in charge and accredited representatives and by written submissions during the investigation process.

### **6.3.2 Drafting and Distribution of Safety Recommendations**

Safety recommendations should be discussed throughout the investigation. Advisers should be part of this process. When the agency conducting the investigation plans to issue safety recommendations before the completion of the draft Final Report, that agency is to make every effort to share the content of the safety recommendations with the accredited representative of the other agency (and other agencies, if appropriate) as soon as practical. The accredited representative is to have the opportunity to comment on those recommendations and provide those comments to the investigating agency within a reasonable period of time based on the degree of urgency of the proposed recommendations. The length of the comment period is to be determined by the investigating agency. If the accredited representative or his designee is present, he will be associated with the drafting process.

### **6.3.3 Distribution of Safety Recommendations**

Safety Recommendations are to be sent to the other agency, along with copies to both aviation authorities, the U. S. Federal Aviation Administration and France's Direction Generale de l'Aviation Civile (FAA and DGAC).

### **6.4. Exchanges of Correspondence**

In the event that formal correspondence is necessary, each agency may choose the most appropriate method to transmit correspondence and documents consistent with prompt receipt. In order to facilitate record keeping and to avoid the loss of correspondence, the recipient will acknowledge receipt of the correspondence.

### **6.5 Consultation**

Regarding consultations on the draft Final Report outlined in Annex 13, each agency should seek State comments from the other agency. In addition, the agency conducting the investigation may give participants an opportunity to review the draft Final Report and to provide observations through the accredited representative of their State.

### **6.6 Confidentiality**

The agency that receives materials from the other agency should handle the materials according to their confidentiality or proprietary status, within the bounds of the respective laws of the two States. Drafts, internal, or working documents that have been transmitted,



except when explicitly indicated to the contrary, are to be considered as proprietary/confidential documents and treated as such.

## **6.7 Informing the News Media**

The agency conducting the investigation is to be the sole organization that releases information about the investigation to the news media. After an accident or incident, the news media and relatives of the victims will be contacting their respective agencies. Therefore, the press officers of both agencies are to establish working procedures to ensure that information can be mutually developed and coordinated as much as possible. Also, whenever possible, such information is to be transmitted by the investigating agency to the other agency before it is made public. If there are differences of opinion, efforts are to be made to resolve them before the information is released.

## **7. Procedures Relating to Investigations of Occurrences Involving Aircraft Equipped with CFM56 Engines**

The following provisions are to be applied to the investigations of occurrences involving CFM56 engines, which are jointly manufactured by France and the United States.

1. In the case of an investigation directed by either agency, the other agency is to be notified of the event that prompted the investigation, and may elect to designate an accredited representative and advisers to participate in the investigation in accordance with the provisions of Annex 13. If the other agency elects not to appoint an accredited representative, the other agency is to be provided timely updates on the progress of the investigation, safety issues developed, and conclusions that arise.
2. In the event that an accident or incident occurs in the territory of a third State and the United States or France is the State of Design or Manufacture of the aircraft, the other agency, which is not the State of Manufacture, the State of Registration or State of the Operator, is to provide notification of its plans for participation in the investigation. The other agency may then elect to designate an accredited representative and appoint advisers to the concerned agency. If the other agency elects not to take such action, it should be provided timely updates on the progress of the investigation, safety issues that are developed, and conclusions that arise.
3. In the event that there is an occurrence in the territory of a third State, for which neither of the two agencies is the State of Design or Manufacture of the aircraft, the two agencies together are to approach the State of occurrence to determine the most appropriate procedures for representation and participation in the investigation.

## **8. Cooperation Between the Two Agencies**

### **8.1 Assistance in the Supervision of Examination of a Component Part**

The agency that conducts the investigation may request that the other agency assist in supervising the examination, testing, or disassembling component parts that have been removed to the location of a manufacturer or other facility of the other State. The other agency is to provide such assistance to the extent possible. In all cases, the agency that conducts the investigation is to provide updates as soon as practicable to the other agency of all investigation activities being carried out in the territory of that State and is to invite the other agency to participate.

### **8.2 Training of Personnel**

To the extent possible, the two agencies are to facilitate exchanges of personnel for training and development, including observer status at major investigation accident sites and subsequent off-scene investigative activities.

### **8.3 Exchange of Information**

Either agency may request information on the progress of investigations by the other agency. The other agency is to do everything possible to provide the information. This information is then to be treated with the same rules of confidentiality as those to which the providing agency is itself bound, in accordance with the laws of the respective States.

### **8.4 Conduct of the Agency Invited to Assist a State of Occurrence**

When one of the two agencies is requested by the State of occurrence to provide technical assistance for an investigation in which the other agency is participating, or should be participating, under the provisions of Annex 13, the response to the request should be coordinated with the other agency. The two agencies should work together to ensure that the investigation is conducted in accordance with the spirit and procedures of Annex 13. Specifically, all the data necessary to fulfill the responsibilities prescribed by Annexes 6 and 8, including FDR and CVR information and copies of the recordings, should be made available to the involved State as soon as practicable. Both agencies are to update and refine data as it becomes available and are to coordinate to ensure that the best data set is available as the investigation progresses.

### **8.5 Future Coordination and Planning**

The agencies' representatives should meet at least annually and alternately at the facilities of the respective agencies to discuss current investigations and any other relevant issues.

## 9. Victims and Relatives

Both agencies are to work in a fully coordinated manner to better meet the expectations of the victims and their families to the extent provided for under the laws of each State.

## 10. Duration

To the extent consistent with their international obligations, participating agencies may cease following the procedures set forth in this document at any time, except that they should continue to follow such procedures for purposes of any investigations in progress at that time. Regarding investigations in progress, confidentiality of information previously provided under these guidelines should continue consistent with domestic law.

To take into account any changes to international or national rules or policies, these guidelines are to be reviewed periodically by both agencies.

Signed at \_Washington D.C. \_on November 16, 2000 \_in duplicate in the English and French languages.

\_\_\_\_\_/s/ Paul Arslanian\_\_\_\_\_  
 Director  
 Bureau Enquetes-Accidents

\_\_\_\_\_/s/ Jim Hall\_\_\_\_\_  
 Chairman  
 National Transportation Safety Board

**ATTACHMENT G: Docket Management System  
CVR Report Placeholder**



# National Transportation Safety Board

## Cockpit Voice Recorder Factual Report and Transcript

### Note:

This page has been inserted into the docket as a placeholder for the actual CVR Factual Report and Transcript.

Immediately prior to the docket's release to the public, the CVR Factual Report and Transcript shall replace this page.

Please contact the Chief of the Vehicle Recorder Division to release the CVR Factual Report and Transcript into the public docket system.