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NATIONAL TRANSPORTATION SAFETY BOARD

PUBLIC HEARING CONCERNING AVIATION IMAGE RECORDING

Board Room and Conference Center
National Transportation Safety Board
Washington, D.C.

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APPEARANCES:

Members of the Board of Inquiry:

CAROL CARMODY, Chairman
DR. VERNON ELLINGSTAD
RON BATTOCCHI
ROBERT MacINTOSH
JAMES CASH

National Transportation Safety Board
Technical Panel:

DOUG BRAZY
DR. DEBORAH BRUCE
DR. EVAN BYRNE
DENNIS GROSSI
CHRISTOPHER JULIUS
SARAH McCOMB

On behalf of the Federal Aviation
Administration:

STEVE WALLACE

On behalf of the Air Transport Association:

BASIL BARIMO

On behalf of the Regional Airline
Association:

DAVID LOTTERER

APPEARANCES: (Continued)

EXECUTIVE COURT REPORTERS, INC.
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On behalf of the Air Line Pilots Association:

CAPTAIN LINDSAY FENWICK

On behalf of the Allied Pilots Association:

JOHN DAVID

On behalf of the National Air Transport
Association:

JACQUELINE ROSSER

I N D E X

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1 11:15 a.m.
2 CHAIRMAN CARMODY: Good morning. I wonder if
3 we could take our seats, please.

4 (Pause)

5 CHAIRMAN CARMODY: Thank you, and welcome to
6 all the parties. I think most of you were here
7 yesterday. A few new additions.

8 Why don't I ask the party spokesmen to
9 introduce any new members who are sitting with you
10 today. Starting with the FAA, Mr. Wallace, please.

11 MR. WALLACE: With me today is Mr. James
12 Whitlow, who will be a witness on the Legal and Privacy
13 Issues Panel. He's the only new addition today.

14 CHAIRMAN CARMODY: ATA, any -- you have the
15 same, I see.

16 MR. BARIMO: Yes, no new members.

17 CHAIRMAN CARMODY: Same, same. All right.
18 Very good.

19 Mr. Cash, would you begin?

20 Let me just say that we're going to start
21 with the NTSB staff, Christopher Julius. After his
22 statement, I have agreed, because of the request of
23 some parties, to make him available for some questions
24 if they pertain to his statement and to his issues. So
25 if there are no questions of him, we'll just move on

1 after that.

2 I'm sorry? Oh, I'm sorry. You do indeed,
3 Mr. Fenwick -- Captain Fenwick.

4 CAPTAIN FENWICK: Yes, ma'am. We have across
5 from me at the table today Mr. Jay Wells, a staff
6 attorney with the Air Line Pilots Association.

7 CHAIRMAN CARMODY: Good. Welcome, Mr. Wells.
8 Please proceed, Mr. Cash.

9 MR. CASH: We'd like to call Christopher
10 Julius.

11 Mr. Julius, if you would give us a brief --
12 name for the record and title and place of employment
13 and a brief history of your education and professional
14 experience.

15 MR. JULIUS: My name is Chris Julius --

16 MR. CASH: Turn the mike on.

17 MR. JULIUS: My name is Chris Julius. I've
18 been with the Safety Board since 1995, and I'm an
19 attorney in the Office of General Counsel.

20 MR. CASH: Thank you.

21 And I believe he has a statement.

22 LEGAL AND PRIVACY ISSUES

23 Statement by Christopher Julius

24 MR. JULIUS: Good morning, Madam Chairman,
25 members of the Board of Inquiry, ladies and gentlemen.

1 My statement this morning is intended to provide an
2 overview of cockpit voice recorder and cockpit imaging
3 recorder legislation and a brief description of NTSB
4 policies and procedures regarding these recordings.

5 The witnesses who follow me will cover in
6 more detail the history of the legislation and its
7 application in judicial settings. Other witnesses on
8 this panel will address FAA enforcement issues and
9 international practices regarding CVRs and cockpit
10 image recorders.

11 An expanded written version of my statement
12 will be part of the public docket.

13 Regulations and legislation. CVRs were first
14 required in 1964 as a result of FAA rulemaking. At the
15 time, FAA explained, quote:

16 "CVRs would be a valuable tool in the
17 investigation of accidents by providing
18 firsthand information of the flight crew's
19 observations and analysis of conditions
20 aboard the airplane, and the procedures
21 employed by them to cope with an emergency,"
22 end quote.

23 During the rulemaking process, the FAA was
24 urged by some to implement a requirement that CVR
25 material not be utilized for any purpose other than

1 accident investigation. In its rulemaking, the FAA
2 stated that it could not bind the courts and, quote,
3 "could not, even if it found it desirable, specify by
4 rule those persons who would be authorized to read out
5 voice recorder tapes." The FAA, however, did announce
6 that CVR material would not be used by FAA in
7 enforcement proceedings.

8 It should be noted that, aside from the
9 obvious investigative value, the impetus for the CVR
10 mandate was simply the availability of appropriate
11 technology.

12 Since the initial FAA rulemaking in 1964,
13 three major pieces of legislation regarding CVRs and
14 cockpit image recorders have been enacted. First, in
15 1982, Congress passed legislation expressly codifying
16 NTSB's longstanding policy of releasing only
17 transcripts of the pertinent portions of CVR recordings
18 and not disclosing the actual audio recording. This
19 legislation was needed to ensure that the Board could
20 continue to protect against disclosure of CVR
21 recordings in light of the broad reach of the Freedom
22 of Information Act.

23 Next, in 1990, Congress passed legislation to
24 address in part the increasingly sensationalistic media
25 attention to aircraft accidents and other perceived

1 misuses of CVR material. The impetus for the new
2 legislation was in part -- in large part a Texas state
3 court order that required Delta Airlines to release an
4 accident CVR in Delta's possession, after NTSB had
5 completed its investigation, to a local television
6 station. Even worse, the Delta CVR recording was
7 broadcast on local and national television.

8 The 1990 legislation requires that discovery
9 of CVR material in judicial proceedings only be
10 permitted if a judge determines it necessary for a
11 party to receive a fair trial. If discovery is
12 permitted, strict procedures govern the scope of access
13 to CVR material, and a protective order to prevent
14 dissemination of non-public CVR material outside of the
15 judicial proceeding is required. Non-public CVR
16 material utilized at trial must be placed under seal by
17 the court.

18 Finally, in 2000, Congress expanded the
19 previous legislation to encompass cockpit image
20 recorders. This legislative change was sought by NTSB
21 to ensure that there was no, quote:

22 "Legislatively defined differences between
23 the treatment of new video technology and
24 existing voice recorders, as the lack of
25 statutory protection for video technology

1 would serve to limit its acceptance," end
2 quote.

3 Exhibits 10-A and 10-B provide more detailed
4 information on the current statutory language as well
5 as the legislative history of the 1982, 1990, and 2000
6 initiatives.

7 To summarize, under the current statutory
8 scheme, NTSB is bound by a general prescription, to
9 wit, quote:

10 "The Board may not disclose publicly any part
11 of a cockpit voice or video recorder
12 recording related to an accident or incident
13 investigated by the Board."

14 The only exceptions to this general
15 prescription are, 1) The NTSB's obligation to, quote,
16 "make part -- make public any part of a transcript or
17 written depiction of visual information the Board
18 decides is relevant to an accident or incident," end
19 quote; or 2) The NTSB's prerogative to make reference
20 at any time to recorded information in making safety
21 recommendations.

22 Moreover, although it is outside the ambit of
23 any statutory provision, CVR recordings have not, in my
24 experience, been used in the United States for
25 administrative enforcement or criminal proceedings

1 against flight crews.

2 NTSB policies and procedures. NTSB has never
3 authorized the release of a CVR recording, nor has NTSB
4 ever authorized anyone else to release a CVR recording.
5 Obviously, the content is very sensitive, and NTSB
6 treats the evidence recorded by CVRs and cockpit image
7 recorders with the utmost respect. In fact, NTSB
8 currently has procedures and policies in place to
9 ensure that the actual CVR recordings are never heard
10 or seen except by a very small number of qualified
11 participants in the official accident or incident
12 investigation.

13 For example, even among NTSB investigators
14 and officials actively involved in the investigation,
15 access to the recording or draft transcripts is
16 strictly controlled. Indeed, only four persons at --
17 four persons at NTSB are automatically authorized to
18 hear a CVR recording or review draft transcripts.
19 Those persons are the recorder specialist assigned to
20 the accident, the investigator in charge, the director
21 of the Office of Aviation Safety, and the director of
22 the Office of Research and Engineering.

23 All other NTSB personnel must consult with
24 the investigator in charge and then obtain permission
25 of both the director of the Office of Aviation Safety

1 and the director of the Office of Research and
2 Engineering before they are permitted to review a
3 recording or non-public transcript.

4 Furthermore, anyone who listens to a CVR
5 recording must sign a master log sheet every time they
6 listen to a CVR.

7 For party participants in a CVR group
8 convened by NTSB to transcribe a CVR recording, each
9 participant must be approved by the director of the
10 Office of Aviation Safety and the director of the
11 Office of Research and Engineering before they are
12 permitted to hear a CVR recording.

13 Party representatives participating in the
14 CVR group must also sign a CVR nondisclosure agreement,
15 and they are prohibited from discussing the recording
16 while outside the laboratory.

17 Finally, participants are prohibited from
18 bringing electronic devices into the CVR laboratory,
19 and any notes taken during the meeting are collected
20 and destroyed prior -- before the group is dismissed.

21 NTSB would follow similar procedures for
22 cockpit image recorders.

23 The CVR handbook for NTSB staff is reproduced
24 in Exhibit 10-F.

25 Finally, ICAO. Annex 13 to the Convention on

1 International Civil Aviation contains international
2 standards governing aircraft accident and incident
3 investigations. Many countries of the world, including
4 the United States, are signatories. The relevant
5 portions of Annex 13, including differences from
6 requirements of the United States, are set forth in
7 Exhibit 10-I.

8 Madam Chairman, that concludes my statement.

9 CHAIRMAN CARMODY: Thank you, Mr. Julius.

10 I assume there are no questions from the
11 Technical Panel of our witness.

12 Do any of the parties have questions for Mr.
13 Julius, starting with the FAA. Mr. Wallace?

14 MR. WALLACE: Well, Mr. Julius, you explained
15 the -- the powerful protections that the NTSB has in
16 place for cockpit voice recorders. Of course, that's a
17 matter of major concern as we contemplate image
18 recorders.

19 My first question, what -- how would those
20 protections that you -- you described the statutory
21 change -- apply where a -- a -- an image recorder is
22 the only recorder on the aircraft and essentially
23 becomes the flight data recorder as well?

24 MR. JULIUS: That's certainly a question that
25 I'm going to ask the FAA witness on my panel, but a --

1 a video recorder that serves in lieu of a flight data
2 recorder on the smaller turbine aircraft would, by its
3 nature, capture information analogous to a CVR. For
4 those reasons, I would propose that they be treated as
5 a cockpit image -- a cockpit image recorder would be
6 treated as a CVR.

7 There is an issue about parametric data
8 that's also captured and transcribed in written form.
9 That is a question that we'll be asking the FAA, how
10 they would treat that.

11 MR. WALLACE: Well, the FAA's treatment is
12 for enforcement purposes. I assume that would be the
13 focus.

14 MR. JULIUS: Well, we're -- the NTSB is
15 proscribed by statute from releasing any part of a
16 cockpit image recorder. We're only permitted to
17 release a written depiction of the relevant portions of
18 that cockpit image recorder.

19 MR. WALLACE: We're all familiar with the way
20 you -- NTSB transcribes a CVR in the course of an
21 accident investigation, but that normally comes down to
22 simply a -- for the most part, it is a description of
23 the words the pilots are saying to each other or ATC
24 transmission or something like sound of trim in motion,
25 things that are fairly specific.

1 How would that work -- how would you envision
2 that working with something as subjective, you know, as
3 -- as subjective as motions or actions or whatever you
4 could see on this image recorder?

5 MR. JULIUS: That would probably be a
6 question that I would defer to our technical staff. I
7 can say that I'm confident that our technical staff can
8 provide a written depiction of what they see on a
9 cockpit image recorder.

10 MR. WALLACE: And you heard yesterday Mr.
11 Smart's discussion of a possible three-key encryption
12 system. Obviously, a major concern is the -- is the
13 protection of image recorder images in accidents
14 outside the United States.

15 What -- what were your thoughts on that -- on
16 that proposal?

17 MR. JULIUS: I think -- I think all parties
18 involved need to approach the issue of balancing
19 privacy --

20 (Technical difficulties with sound system)

21 CHAIRMAN CARMODY: I see our vice chairman is
22 taking action.

23 (Pause)

24 CHAIRMAN CARMODY: Sorry.

25 MR. JULIUS: Mr. Wallace, could you repeat

1 your question?

2 CHAIRMAN CARMODY: First, let me thank Mr. --
3 Vice Chairman Rosenker for dealing with this issue very
4 promptly. We appreciate it.

5 Go ahead.

6 (Pause)

7 CHAIRMAN CARMODY: Steve, you're not --

8 (Pause)

9 CHAIRMAN CARMODY: We're not all on here.

10 MR. WALLACE: Am I back now?

11 I did -- I'm not sure if you completed the
12 answer to the question about where it is the only --
13 I'm moving on to the next question.

14 You said that the -- you're not aware of any
15 case where the CVR -- where a CVR has ever been used in
16 an enforcement or administrative action, but I assume
17 you are aware -- I just ask you what the NTSB's
18 position on this is with FD -- would be with image
19 recorders as well as CVRs.

20 I assume you are aware that there are cases
21 where companies have used CVRs for internal
22 disciplinary or some sort of corrective measures?

23 MR. JULIUS: I've heard of a few instances.
24 I'm not personally aware of the facts involved in those
25 cases.

1 MR. WALLACE: Does NTSB consider that further
2 protections are necessary in that area?

3 MR. JULIUS: I think that's a question I
4 would refer you to ALPA and the APA for.

5 CHAIRMAN CARMODY: I guess I would jump in
6 and say we've got the protections we've asked for from
7 the Congress. If there are any additional ones needed,
8 we've not -- we're not aware of them at this time.

9 MR. WALLACE: And do you see the need for any
10 further -- this is my last -- any further treaty
11 solutions to -- to these privacy issues, any necessity
12 for -- for further agreements at the ICAO level to
13 ensure there's an appropriate level of protection for
14 image recording?

15 MR. JULIUS: Well, ICAO, I think, still needs
16 to address Annex 6 video recorders. And I think -- and
17 you had asked before -- before the technical
18 difficulties about the international aspects, and I
19 think my answer to that would be, first, I would look
20 to what's happened with CVRs and how have CVRs been
21 handled both domestically in the United States and
22 internationally over -- over 40 years, and draw on
23 those and ask everyone involved to approach it in a
24 reasonable manner to see if we can balance the privacy
25 interests and the investigative value and come up with

1 a solution.

2 MR. WALLACE: Thank you. I think the
3 question that didn't get answered was, I had asked
4 about Mr. Smart's proposed three-key encryption, which
5 I couldn't quite in my own mind reconcile that with the
6 ICAO requirement that the country of occurrence
7 basically run the investigation. I was wondering if
8 you could give me your thoughts on that, and that's my
9 last question.

10 MR. JULIUS: I don't have any -- any formal
11 thoughts, other than, you know, having thought through
12 some of these issues on my own and -- and I know other
13 people at the Board have. I don't think there's any
14 easy solution for encryption or any other type of
15 protection on a technical level. I don't think there's
16 an easy answer to that question.

17 MR. WALLACE: All right. Nothing further.
18 Thank you.

19 CHAIRMAN CARMODY: Yes, Air Transport
20 Association, any questions?

21 MR. DAVID: No, no questions, thank you.

22 CHAIRMAN CARMODY: Regional Airline
23 Association?

24 MR. LOTTERER: Just a clarification question.
25 The NTSB is bound by the general proscription the

1 Board will not disclose publicly any part of a cockpit
2 voice recorder, and so forth, of an accident or
3 incident investigated by the Board.

4 Is the Board statutorily required to
5 investigate every accident?

6 MR. JULIUS: Yes.

7 MR. LOTTERER: Every aircraft accident?

8 MR. JULIUS: Every civil aircraft accident in
9 the United States, and most public aircraft accidents.

10 MR. LOTTERER: Okay. So that this -- this
11 broad policy will affect those operators in GA that may
12 be required to have this unit in the future?

13 MR. JULIUS: Those proscriptions would
14 protect them, yes.

15 MR. LOTTERER: Okay. Thank you.

16 CHAIRMAN CARMODY: Allied Pilots Association,
17 Mr. David, please.

18 MR. DAVID: Good morning, sir. You said that
19 the U.S. limitations on CVR differ from Annex 13.
20 However, the supplement to Annex 13, Chapter 5, says
21 that public access to CVR is significantly different in
22 the U.S. than other countries. Just what power does
23 ICAO have to enforce Annex 13 in other countries?

24 MR. JULIUS: I don't -- I don't know if I can
25 speak -- speak for ICAO.

1 CHAIRMAN CARMODY: Why don't I do it? I'll
2 just jump in here. I spent five years at ICAO as the
3 U.S. representative. ICAO does not have any
4 enforcement authority. They have authority of moral
5 suasion. It's -- it's -- the companies -- the
6 countries join ICAO by agreement, and they agree to
7 uphold certain standards.

8 Enforcement is not an ICAO prerogative. But
9 again, if you can get the community of the world to
10 agree on certain things, that's generally fairly
11 powerful.

12 I was going to jump in earlier, and I'll just
13 take another minute with the mike, after Mr. Wallace's
14 comments. And it occurs to me, the question has come
15 up in several contexts, we know what the U.S. requires,
16 we know what the NTSB does, how can we advance this in
17 the international arena.

18 The way to do that is through ICAO, but for
19 us to do that -- "us" being the U.S. -- we would need
20 an FAA regulation first. If there were an FAA rule on
21 this, believe me, I would make an effort to go up to
22 ICAO and make a pitch to the assembly and to the
23 council that this is something the world should take
24 on. But we need that initial step first. That's my
25 answer on ICAO.

1 MR. DAVID: Thank you. Let me go one step
2 further. You probably know where I'm heading with
3 this. In fact, we've all heard the Cali tape that was
4 played in an investigation that people did participate
5 in. In fact, the Board supplied the tape to the
6 Colombian authorities.

7 How can we ensure that the probability that
8 the CVR and the CIR now and in the future won't be
9 disclosed or improperly used under Annex 13?

10 MR. JULIUS: The Board certainly supports
11 following the rules of ICAO and the provisions of ICAO,
12 as well as the NTSB's rules and statutes in its own
13 investigations. And the NTSB was obviously opposed to
14 the release of the CVR on "Dateline" from the Cali
15 accident.

16 The only answer I can give is, in -- in the
17 40 years we've had CVRs, it appears to be more the
18 anomaly than -- than the norm.

19 MR. DAVID: I agree. One anomaly is enough.
20 We're obviously very sensitive to the release of CVR
21 and CIR, and we applaud what the Board does and its
22 procedures, and we know that they're effective.

23 However, you know, when -- you touched on
24 when the CVR is released domestically, as in the case
25 of the Little Rock accident, it was released to

1 unspecified experts, consultants, and attorneys. Do
2 you still feel that when it's released in that manner
3 that the CVR is still closely held and -- held, and
4 more importantly, private?

5 MR. JULIUS: The only answer I can give you
6 is, I'm aware that they're used in litigation if they
7 follow the -- if they follow the procedures that I
8 discussed in Section 1154. And the only other answer I
9 can give to that is, I've never heard a CVR. So I
10 assume that the procedures in 1154 are working.

11 MR. DAVID: Thank you, sir.

12 CHAIRMAN CARMODY: Captain Fenwick, any
13 questions from ALPA for the witness?

14 CAPTAIN FENWICK: Yes.

15 Mr. Julius, which U.S. agency is responsible
16 for representing the positions and the -- the interests
17 of the United States at ICAO?

18 MR. JULIUS: Excuse me. I believe the -- the
19 NTSB, through an intergovernmental organization.

20 CAPTAIN FENWICK: Thank you.

21 And just a clarification on the strength and
22 effectiveness of existing United States CVR protections
23 and regulations. Referring again to the Cali accident,
24 the release and the playing of the Cali tape in the
25 U.S. media, were any United States laws or rules

1 broken?

2 MR. JULIUS: Not that I'm aware of. It was
3 -- it doesn't fall within the ambit of NTSB statutes.

4 CAPTAIN FENWICK: Were any international
5 standards or protocols violated?

6 MR. JULIUS: The short answer is, I don't
7 know, and -- and the slightly longer answer is, I don't
8 think so.

9 CHAIRMAN CARMODY: Captain Fenwick, he's not
10 an expert on international law, so.

11 CAPTAIN FENWICK: Thank you.

12 CHAIRMAN CARMODY: National Air
13 Transportation Association, Ms. Rosser.

14 MS. ROSSER: Thank you. No questions.

15 CHAIRMAN CARMODY: All right. We will move,
16 then. Any questions or comments from the Board of
17 Inquiry?

18 Dr. Ellingstad.

19 DR. ELLINGSTAD: Just one very quick
20 question, Chris, in relation to the -- the question
21 that Mr. Wallace had raised about parametric data.
22 Relative to -- to our statute and -- and our
23 procedures, would the production of a data table
24 derived from observations of instruments fall under the
25 category of a written description or a transcript that

1 -- that would be able to be released?

2 MR. JULIUS: Yes.

3 DR. ELLINGSTAD: Thank you.

4 CHAIRMAN CARMODY: I believe that's all for
5 Mr. Julius, then. Thank you very much for your
6 testimony and your responses.

7 And, Mr. Cash?

8 MR. CASH: We'd like to call James Johnson
9 from the Air Line Pilots Association.

10 Whereupon,

11 JAMES JOHNSON

12 having been first duly sworn, was called as a witness
13 herein and was examined and testified as follows:

14 Testimony of James Johnson

15 MR. CASH: Mr. Johnson, if you would, state
16 for the record your name and place of employment and
17 any relevant educational description?

18 Push the button.

19 MR. JOHNSON: My name is James Johnson,
20 commonly referred to as Jim Johnson. I'm employed as
21 an attorney with the Air Line Pilots Association. I've
22 been there 24 years, at the moment.

23 Prior to that, I was in the United States Air
24 Force in the Judge Advocate General's Department, and I
25 served a tour in the Litigation Division, where I

1 represented the Government or the Air Force in crash
2 litigation cases.

3 MR. CASH: Thank you.

4 And I -- Mr. Julius is the questioner.

5 MR. JULIUS: Good morning, Mr. Johnson.
6 Thank you for being here.

7 MR. WALLACE: Madam Chairman, may I ask just
8 a clarification, Madam Chairman, on the procedure? Are
9 we doing all these witnesses individually? I had -- I
10 understood we were doing them together.

11 CHAIRMAN CARMODY: Would you respond?

12 MR. CASH: Mr. Johnson's going to be up there
13 first, and then we're going to add two more attorneys,
14 the next two people. Then there'll be a panel after
15 that.

16 MR. WALLACE: So, will Mr. Whitlow be
17 testifying as part of a panel or --

18 CHAIRMAN CARMODY: No.

19 MR. CASH: He'll be separate.

20 MR. WALLACE: All right. Thank you.

21 CHAIRMAN CARMODY: But let's be clear that
22 the questions for Mr. Johnson will be completed before
23 the next two witnesses come up, is that correct?

24 MR. CASH: Yes.

25 CHAIRMAN CARMODY: All right. Thank you.

1 Please go ahead.

2 MR. JULIUS: Good morning, Mr. Johnson.

3 MR. JOHNSON: Good morning.

4 MR. JULIUS: Could you describe for us what
5 your involvement personally, and ALPA's in general, was
6 in the 1982, 1990, and 2000 legislation that I
7 discussed in my statement?

8 MR. JOHNSON: Well, ALPA was heavily involved
9 with our legislative folks, and I was involved in the
10 drafting of the various statutes and various forms of
11 them for the congressional committees to consider. So
12 I came in 1980, and one of my first tasks was to be
13 involved in the 1982 legislation process. And I
14 drafted some of the language in that statute.

15 MR. JULIUS: And were you involved in the '90
16 and the 2000 legislation as well?

17 MR. JOHNSON: I was indeed. The 2000
18 legislation, not in a drafting role, but in more of --
19 where we acquiesced.

20 MR. JULIUS: And sitting here today, would
21 you -- would you agree or disagree that the -- that the
22 goals or the intention, at least as stated in the --
23 the language of the statute and the statutory
24 amendments as enacted, have they been -- has -- have
25 those goals been successful?

1 MR. JOHNSON: Well, the statutes -- they've
2 been successful to some extent, but from our
3 perspective, they are a waypoint to our destination,
4 and the destination, of course, is the complete
5 protection of the cockpit voice recorder, and we are
6 not there yet. So those were all steps towards that
7 goal.

8 MR. JULIUS: When you speak of complete
9 protection, is that -- is there a refined definition of
10 what that means?

11 MR. JOHNSON: When I speak of complete
12 protection, at least from ALPA's perspective, it means
13 that the cockpit voice recorder would be used solely
14 for air safety investigations. It would not go to
15 litigants. It would not be used in disciplinary
16 proceedings against pilots or criminal proceedings or
17 anything other than for the Safety Board's analysis and
18 accident prevention.

19 MR. JULIUS: And is ALPA currently planning
20 on proposing any legislative changes to the current CVR
21 provisions in the statute?

22 MR. JOHNSON: We do -- not at this moment
23 have a legislative initiative to change the statute.
24 It is, of course, in our mind that we want to march
25 towards our goal, and of course, in any legislation, as

1 those who have been around Washington know, it is a
2 political climate and timing, and hopefully, someday we
3 will be able to achieve some greater legislative
4 protections. But that is our ultimate goal.

5 MR. JULIUS: Thank you.

6 During the 1990 legislative effort, was that
7 a proposed -- a proposal by ALPA to Congress that --
8 that it be proscribed from use outside of accident
9 investigations?

10 MR. JOHNSON: It was indeed. Our initial
11 approach at that time, and we drafted language, was to
12 totally resolve the problem. In other words, it will
13 not be used for evidence in litigation cases. It will
14 not be discoverable. It would be held at the Board and
15 used only for accident investigation purposes.

16 That was too big of a bite, and we ended up
17 going to a waypoint again in our legislation by setting
18 up a couple things. One, the protective order to
19 preclude the -- the public news media disclosure of the
20 CVR, and in the domestic United States accidents, I
21 believe that's been successful.

22 We also then went to -- if we can't have the
23 total protection, what do we do to limit the discovery.

24 And our intent there was to make the hurdle so high
25 that judges would not get over those hurdles and would

1 not allow discovery. We were wrong and were perhaps
2 too optimistic, because I tried to design that statute
3 to protect the CVR much like we used to protect
4 classified information, by making, you know, no other
5 source available for, you know, the hurdles in 1154 and
6 in camera review before it's released.

7 And that was our intent, that that might help
8 us keep it from being discovered. I was wrong.

9 MR. JULIUS: How often does the CVR get
10 discovered in litigation, if you know?

11 MR. JOHNSON: In my experience, in all the
12 major accidents the CVR has been discovered, and if
13 it's not completely discovered, it is virtually
14 completely discovered with some deletions. And I think
15 that has been true of every major accident case.

16 I've been involved in trying to prevent that,
17 again, unsuccessfully with some of my colleagues that
18 will appear here after me.

19 MR. JULIUS: Do you or does ALPA or do ALPA
20 counsel routinely get involved in CVR-related issues in
21 accident litigation?

22 MR. JOHNSON: We do. Every time there is a
23 motion to discover the CVR, and we're usually aware of
24 it in the major cases, we seek to intervene for the
25 limited purpose of opposing the discovery of the CVR,

1 the tape. And of course, following that, we also, if
2 it is discovered, want to ensure that an adequate
3 protective order is issued.

4 MR. JULIUS: I have a question here that I
5 noted in 1990, when -- when Captain Duffy testified
6 before Congress in the process of proposing the
7 legislation that was ultimately enacted in 1990, he
8 said, quote:

9 "The crew privacy concerns were recognized to
10 be, quote, outweighed by the need for
11 information from the flight crew in order to
12 determine the cause of the accident so future
13 occurrences are prevented."

14 I guess I would ask, has ALPA changed that
15 position, and I would also ask you that same question
16 with regard to cockpit image recorders.

17 MR. JOHNSON: ALPA has not changed its basic
18 policy since 1964-65. We don't object to the CVR being
19 used for safety investigation purposes. What we object
20 to is the other uses of the CVR, which at least in the
21 past have been news media, have been litigants, have
22 been used in disciplinary proceedings against the crews
23 by employers.

24 We have an additional concern nowadays in
25 that there is criminalization going on throughout the

1 world, particularly in civil law countries. I mean, at
2 the moment there's -- Japanese pilots are being
3 prosecuted. We've had pilots in Taiwan and various
4 other pilots prosecuted throughout the world criminally
5 for operational errors or accidents.

6 So we have that concern, also, that the
7 cockpit voice recorder could be used for that purpose,
8 or a cockpit image recorder. So while we have not
9 changed our policy for the safety, we are very
10 concerned with our experience with the cockpit voice
11 recorder of going to a cockpit image recorder without
12 these protections.

13 MR. JULIUS: Does ALPA approach -- both in
14 terms of CVRs and cockpit image recorders, do you
15 approach those issues proactively or on a case-by-case
16 basis?

17 MR. JOHNSON: Are you talking about the
18 litigation?

19 MR. JULIUS: No, I'm thinking more in terms
20 of legislative changes, organizational changes.

21 MR. JOHNSON: Well, legislatively, we've
22 approached it only on the cockpit voice recorder,
23 because usually, when we go to Congress and ask for a
24 fix, we've got to have something that is broken.
25 They're not too inclined to give us a fix in the

1 future.

2 Now, we did get some fixes, at least with the
3 FOQA program, in my opinion, which government and ALPA
4 and others went forward on. The program was ready to
5 go, but we wanted these protections so it wouldn't be
6 released under FOIA and released against various
7 airlines and so forth. So we are proactive in those
8 things, but so far we've only been proactive in the
9 cockpit voice recorder.

10 MR. JULIUS: There were some questions
11 earlier about ICAO. Is ICAO the vehicle for
12 international, for lack of a better word, problems
13 regarding access to CVRs and cockpit image recorders?

14 MR. JOHNSON: ICAO is one avenue. ICAO is --
15 and with all due respect, Madam Chairman -- a very
16 slow-moving organization. And so we attempted to get a
17 change to Annex 13 to -- it was a baby step, a baby
18 step to split out the cockpit voice recorder and other
19 recorders of that type information into a separate
20 paragraph in Annex 13, which then the next step would
21 be to get them additional protections.

22 I think we worked with the Board, or tried to
23 work with the Board to get their systems in that, but
24 we weren't very successful in that and we weren't
25 successful in the end in getting that change to Annex

1 13. So we do work in that arena.

2 MR. JULIUS: What about the European Union?

3 MR. JOHNSON: For individual states. ALPA is
4 not alone in its concern about cockpit voice recorders
5 and cockpit image recorders. Pilots the world over are
6 also concerned and have the same position, for the most
7 part.

8 We do work through the International
9 Federation of Airline Pilots, and through that we are
10 trying to get individual countries legislation to
11 protect the cockpit voice recorder. The most
12 significant success we've had is New Zealand, who
13 adopted legislation, but it was only after they used
14 the cockpit voice recorder in a criminal proceeding
15 against a pilot that we were able to accomplish that.
16 So we do try to do that country by country.

17 MR. JULIUS: I guess I want to ask you a
18 question that was asked about me. Are you aware --
19 have -- are you aware of a CVR that's been released in
20 the United States since the 1990 provisions?

21 MR. JOHNSON: Well, Cali was one.

22 MR. JULIUS: Outside the United States.

23 MR. JOHNSON: Yeah, outside. But within the
24 United States, I'm not.

25 MR. JULIUS: Do you think that the provisions

1 in -- as far as non-disclosure in terms of the
2 practices of the United States are sufficient as they
3 are for video recorders?

4 MR. JOHNSON: No. The reason is, to me, a
5 video recorder is much more invasive of one's privacy
6 than the written words, if I see the photographs. And
7 so if we don't have the protections we have now for
8 the voice recorder-- which are released to courts and
9 others, and hopefully they would not be released to the
10 news media. With the streaming videos you get over the
11 Internet which we have seen in Iraq and other places,
12 the potential for misuse of that without stringent
13 protections, in my opinion, is great and would be a
14 risk that we would not want to accept without
15 protections.

16 MR. JULIUS: I guess, drawing on that, what
17 -- what was ALPA's proposal or how did ALPA approach
18 the 2000 amendments? We've seen that the amendments in
19 2000 basically took the CVR provisions and applied
20 those to recorders. Did you seek and were unsuccessful
21 for more stringent -- more stringent provisions for
22 cockpit imaging recorders?

23 MR. JOHNSON: We did not seek more stringent
24 provisions at that particular time. You were bringing
25 in surface transportation areas into that statute and

1 protection, and we felt -- and at least I certainly
2 strongly advised -- that that's one step there, that we
3 should take that now and build on it so we would have
4 something that we could build on to get the total
5 protection. Otherwise, we would start from ground
6 zero, and at least this gave us a start.

7 MR. JULIUS: Thank you. I just -- I just
8 have a few more questions, I think.

9 I wanted to have you describe a little bit,
10 if you would, how -- I'm going to start with the
11 premise that there's some value and that ALPA agrees
12 that there's some value in a cockpit -- cockpit imaging
13 recorder.

14 And my question is, how does ALPA balance the
15 concerns over disclosure and privacy concerns with the
16 potential benefit of a cockpit image recorder? Is
17 there -- can you shed some light on that a little bit?

18 MR. JOHNSON: Let's see if I can answer that
19 question, Chris. When we balance the cockpit image
20 recorder, if it's your privacy involved, you put much
21 greater weight on your privacy. I would not want, as a
22 lawyer, a recorder in my office for all day that I work
23 there. So I understand --

24 CHAIRMAN CARMODY: Mr. Johnson, I can't hear
25 you. I'm sorry.

1 MR. JOHNSON: Oh, I'm sorry.

2 CHAIRMAN CARMODY: Could you speak -- thank
3 you.

4 MR. JOHNSON: I'm sorry. Let me get this
5 closer. I'm balancing here.

6 As a lawyer, I would not want my office being
7 recorded with what I did all day long, all right. I
8 don't think any of us would. So I put the privacy on
9 there. It is a heavy balance.

10 Now, when I go to balance it on the other
11 side to counterweigh it and I put the cockpit image
12 recorder on there, does that balance out. In our view,
13 it doesn't, because we think there are other things
14 there, as Captain Cox testified to, that are -- will
15 give us better information and help us find the causes
16 of accidents.

17 And I think he talked about enhanced
18 flightdata recorders and the proactive programs which
19 have been very effective: the ASAPs, the FOQA
20 programs, and the data recording program. And when you
21 put those in there, it just doesn't balance. The
22 privacy to us overrules.

23 MR. JULIUS: Okay. Thank you.

24 I guess a follow-up question to that would
25 be, has ALPA formally polled its membership -- or, in

1 other words, how does ALPA know what line pilots' view
2 is regarding those balancing issues?

3 MR. JOHNSON: We have not polled our members
4 on this issue. We do get the information -- we have
5 local councils and local levels filter up to the policy
6 levels of ALPA, and it's a resounding no, we do not
7 want those because of our experience with cockpit voice
8 recorders.

9 And I can tell you that whenever the topic
10 comes up or whenever there's a case and a discovery, or
11 I'm around and they associate me with that, I get an
12 earful, and it is more than just "no." It is -- they
13 just are opposed to it.

14 MR. JULIUS: Has ALPA met with the FAA or
15 airlines in general to discuss proscriptions on use by
16 airlines or the FAA of cockpit image recorders?

17 MR. JOHNSON: I have not been involved in it,
18 and to my knowledge, I don't -- I mean, there's always
19 some discussions on these things, but I'm -- I'm not
20 aware of any real discussions on protecting it with
21 airlines.

22 We do some protection for the cockpit voice
23 recorder in our collective bargaining agreements that
24 limit the use, but we have not had discussions on a
25 broad basis.

1 MR. JULIUS: Do you think -- do you think,
2 going back to Cali for a second, do you think Cali is
3 -- do you think it's an anomaly or do you think
4 that's something that we should focus on when we're
5 dealing with how to protect cockpit image recorders and
6 CVRs?

7 MR. JOHNSON: I would like to say it's an
8 anomaly. To me, I think it's a warning that we don't
9 have protections outside the United States and we need
10 to look at that. And -- or we will be having -- as we
11 travel more and more, fly more and more
12 intercontinentally or internationally, we have a
13 greater risk there that needs to be addressed.

14 MR. JULIUS: In your experience, in ALPA's
15 experience, is industry around the world and people
16 that are affiliated with aviation, are they generally
17 conscientious of those issues and tying that in with --
18 have there been very many instances of CVRs being
19 disclosed?

20 MR. JOHNSON: Whether they're conscientious
21 of it, I know the pilots are in most countries that
22 have international airlines. Whether the governments
23 there or the airlines are, I don't know. And it's --
24 it is an issue, but I just don't know the answer if
25 they have - how they have addressed it in their

1 airlines.

2 MR. JULIUS: And I just have one more
3 question, and -- and that is, if -- I guess I need you
4 to confirm this premise, is the first part of the
5 question. But if -- if ALPA crews are generally
6 protected through employment agreements, surviving
7 crews and what not, as long as CVRs aren't disclosed to
8 the public, why does ALPA care about if they're used in
9 litigation, given that it seems to be the norm?

10 MR. JOHNSON: Well, ALPA crews are
11 indemnified under the master-servant rule, and so
12 indemnification is not the issue. But they sort of
13 feel betrayed, I guess, because, in 1964, when this
14 first came into effect, it was their belief -- and
15 probably in 1964 it was a reasonable belief -- that
16 cockpit voice recorders are going to be used only for
17 safety purposes.

18 And that -- they now found that it wasn't,
19 and with the use of the demonstrative evidence that was
20 -- came into effect largely after the '82 legislation
21 that used the cockpit voice recorder, they saw that and
22 the litigation and felt betrayed, so to speak, by the
23 fact that it was now being used for liability and other
24 issues when, from the pilot's perspective, this was for
25 safety only.

1 MR. JULIUS: Thank you, Mr. Johnson.

2 Madam Chairman, that's all the questions I
3 have.

4 I was going to propose that we allow Mr.
5 Johnson to answer questions from the parties before we
6 bring up the other two folks on the panel.

7 CHAIRMAN CARMODY: I think that's reasonable.

8 I'm going to reverse the order today just
9 because I think sometimes being last is difficult. So
10 let's start with Ms. Rosser from NATA.

11 Any questions for the witness, Ms. Rosser?

12 MS. ROSSER: No, actually, I don't have any
13 questions for him at this time.

14 CHAIRMAN CARMODY: All right. Air Line
15 Pilots Association, Captain Fenwick?

16 CAPTAIN FENWICK: Thank you, ma'am.

17 Mr. Johnson, just an initial clarification.
18 You just referenced, and I think you may have
19 misspoken, that Captain Cox yesterday was advocating
20 enhanced video recorders. Would that possibly be --

21 MR. JOHNSON: That was clearly a misspeak, if
22 I said that. Enhance the flight data recorders.

23 CAPTAIN FENWICK: Thank you.

24 Also, it was noted yesterday, and you just
25 referenced the fact, that pilots have generally been

1 satisfied with the data protections that we've been
2 able to obtain through the FOQA programs. But could
3 you differentiate for us the difference between the
4 data protection associated with FOQA and the sorts of
5 protections and rules that are contemplated for image
6 recorders?

7 MR. JOHNSON: Well, the FOQA program, as most
8 folks know here, is really recording what the airplane
9 is doing, the mechanical things. And once that's
10 recorded, it is then downloaded from the airplane and
11 deidentified both as to the flight and the crew members
12 and so forth, and put into a large database that is
13 then used for trend information and trend analysis.

14 So you could never pick out of that data that
15 an individual crew had done something one way or
16 another. So it's a totally different program, and
17 different need for protection than such as a cockpit
18 image recorder or cockpit voice recorder.

19 CAPTAIN FENWICK: Thank you, Mr. Johnson.

20 In terms of the international rulemaking
21 again, specifically the ICAO venue, you mentioned that
22 in AIG-99 it did propose some enhancements to the data
23 protection. And again, was that a radical change?

24 MR. JOHNSON: It was -- I called it a baby
25 step. It was a very small step, and that was just to

1 kind of divide out these recorders into a separate
2 provision that would give them some protection. But
3 then we could go, hopefully, to the next step and get
4 greater protections.

5 And unfortunately, I don't think we got
6 support even from our own government on that issue, so
7 we did not succeed.

8 CAPTAIN FENWICK: In your opinion, why,
9 perhaps, did the U.S. not support that initiative?

10 MR. JOHNSON: I really don't know why they
11 didn't support that initiative. I would have hoped
12 they would have.

13 But I know that we have a -- we've taken an
14 exception because, I think, of our law to the current
15 ICAO rule as I understand it. So I'm not sure what the
16 policy reasons were for that.

17 CAPTAIN FENWICK: Could you give us a sense
18 of where the image recorder information would be sought
19 more aggressively by your colleagues, the plaintiffs'
20 attorneys, than CVR information is today?

21 MR. JOHNSON: Certainly, no disrespect to
22 Mike Demetrio here, but they would be after that as a
23 feeding frenzy, because a picture is worth 1000 words.
24 In damages, if I can have some photos of dying
25 moments, pain and suffering, I'm going to go after it

1 if I'm a plaintiff's attorney.

2 CAPTAIN FENWICK: Thank you.

3 And we've heard the Board say in other venues
4 that the legal and the privacy issues surrounding image
5 recorders, and that would extend to disclosure and use
6 by plaintiffs' attorneys, is not really their problem.

7 Just, in your opinion, whose problem is it, and in
8 what venues could we expect these concerns to be
9 resolved?

10 MR. JOHNSON: Well, I think that -- that the
11 Board has a role in this. I think it is our problem
12 because we want to get safety information and we want
13 to prevent future accidents. And to get that safety
14 information, you sometimes have to provide certain
15 protections, balancing the public policy or the need
16 for that, for safety information. And in my days in
17 the Air Force, I spent much time protecting safety
18 information a little more successfully.

19 We were able to, in our safety
20 investigation, to promise confidentiality and maintain
21 things in confidence, such as manufacturers' tear down
22 reports and witness statements. And we got a lot more,
23 in my opinion, spontaneous information, less guarded
24 information, that was very useful to safety.

25 So, to me, it is a joint effort: the pilots,

1 the NTSB, the FAA, and the industry, to get these
2 protections to get the information.

3 CAPTAIN FENWICK: Thank you.

4 CHAIRMAN CARMODY: Regional Airline
5 Association, any questions for the witness?

6 MR. LOTTERER: No questions, thank you.

7 CHAIRMAN CARMODY: Thank you.

8 Mr. Barimo, Air Transport?

9 MR. BARIMO: No, no questions, thank you.

10 CHAIRMAN CARMODY: FAA, Mr. Wallace?

11 MR. WALLACE: Mr. Johnson, could you just
12 sort of -- it's clear from your response to Mr. Julius'
13 question you felt that the current protections in place
14 for CVRs were inadequate in anticipation of a possible
15 mandatory installation of image recorders. Could you
16 describe what you might consider to be adequate
17 protections for image recorders, both sort of
18 domestically and internationally?

19 MR. JOHNSON: I suppose there's a lot of -- a
20 lot of ways to do this. I'm going to throw out an
21 idea. One idea that at least was in the back of my
22 mind in 1990 was to keep -- have the cockpit voice
23 recorder, which is what we were addressing then, and
24 this could apply to the image recorder, be encrypted,
25 and the NTSB would have the key, the magic key.

1 So that if it happened outside the United
2 States, they would have to transcribe it. They would
3 transcribe it and make it available under Annex 13, the
4 transcription, or the people could come in and listen
5 to it from the other country that was investigating it.

6 And it would be retained by the NTSB. They would not
7 turn it over to the airlines, they would not turn it
8 over to the country. It would be in their custody and
9 they would be prohibited from releasing it by statute.

10 That might work.

11 And I haven't coordinated that with my
12 client, so that's just an idea, something along that
13 idea.

14 MR. WALLACE: And so, play out that idea for
15 me with a U.S. carrier with a U.S.-registered airplane
16 involved in an accident at Charles de Gaulle Airport.

17 MR. JOHNSON: Charles de Gaulle Airport, the
18 French authorities -- and hopefully the technology
19 would be such that they could not decode this -- would
20 -- let's assume they got the cockpit voice recorder,
21 the cockpit image recorder, however we want to do it,
22 and they could not read it out.

23 So they would have to come -- since it was an
24 N-registered aircraft, the NTSB would have a
25 representative there in any event. They could not read

1 it out. They'd have to go to the NTSB representative.
2 He'd come back and it would be read out. And they
3 would have access to come over here and see it, or get
4 a transcript of it. And then they could use it in
5 their accident investigation.

6 I think that would comply with Annex 13. I'm
7 sure I could find some people that may say it wouldn't.

8 And it would also then make sure that it's
9 not going to see the light of day because it's in the
10 NTSB. The NTSB, as Chris said, and correctly, has
11 never released it. What happens, though, is they give
12 it back to the airline, and then we have our discovery
13 problem.

14 MR. WALLACE: I don't -- I assume that the
15 BEA and the AAIB have similar excellent track records
16 on protecting this. So, would you envision, then, that
17 this would work in the reverse? That if there were a
18 French aircraft involved in an accident here, the NTSB
19 would be, then -- under this scheme you've outlined,
20 would be -- wait for the receipt of a transcript from
21 the French folks?

22 MR. JOHNSON: I guess, if you played that
23 out, that could be possible.

24 MR. WALLACE: Chairman Carmody said earlier
25 that the procedure to develop ICAO level protections

1 would require that the FAA develop a regulation
2 presumably mandating these recorders first.

3 I see that as presenting somewhat of a
4 chicken-and-egg dilemma. The -- the -- in that -- in
5 that you -- would you agree that you would want
6 protections in place before we had a rule mandating
7 recorders?

8 MR. JOHNSON: I would say we would want
9 protections in place before, and I defer to Madam
10 Chairman there, although I respectfully disagree with
11 you that probably we could go to ICAO and you could get
12 some protections there, albeit it's going to be a slow
13 process, before you actually get an FAA regulation.

14 CHAIRMAN CARMODY: May I invade this space
15 just for one more minute? You could try. Frankly, if
16 you don't have the support of the United States
17 delegation, you would probably not get very far with
18 it.

19 MR. JOHNSON: I would agree with you on that.

20 CHAIRMAN CARMODY: That was my issue. I
21 mean, it would be very hard for any individuals to go
22 up to ICAO and try and persuade other states to sign
23 onto some kind of protections. If the United States
24 ambassador up there says this is important, we have an
25 FAA regulation, you're in much better shape. That was

1 my point.

2 You could certainly try without that, but it
3 would be easier to --

4 MR. JOHNSON: You could try. I guess what I
5 was thinking was that the -- if the United States
6 supported this, the ambassador could go and get that,
7 saying we're thinking of doing this, we want these
8 protections. That was the only point I had.

9 CHAIRMAN CARMODY: If there's an indication
10 the FAA's going to act on it and he -- he's acting in
11 accordance with FAA statutes, yeah.

12 Sorry.

13 MR. WALLACE: I have no further questions,
14 although, Madam Chairman, if you might clarify a
15 question which came up earlier from the ALPA gentleman
16 regarding who represents the United States at ICAO. I
17 mean, it's sort of officially a State Department
18 position, is that correct?

19 CHAIRMAN CARMODY: Yes, it is. The
20 ambassador is -- reports to the Department of State,
21 but really gets most of the technical guidance from the
22 FAA. So it's an interesting sort of split
23 responsibility.

24 I know on issues of budget and things like
25 that, I would go to the State Department. On issues

1 like this, it would be the FAA.

2 MR. WALLACE: No further questions.

3 CHAIRMAN CARMODY: And Mr. David, I do
4 apologize. The trouble with reversing order is I lose
5 track, and I went by Allied Pilots. Do you have any
6 questions?

7 MR. DAVID: Yes, ma'am, I do. I knew you
8 wouldn't forget me.

9 Mr. Johnson, you mentioned protective orders
10 and litigation. Do you feel that the protective orders
11 for CVR are adequate, when the judges allow release to
12 unauthorized parties versus specific and known
13 individuals in their order?

14 MR. JOHNSON: I guess, in my experience, I've
15 never known a judge to release it to unspecified
16 parties. The protective orders I've been involved in
17 have all been released to the lawyers who have a
18 responsibility to release it to their experts, and
19 there's all kinds of controls on that. They have to
20 log in when they get it and when they don't, and
21 they're responsible.

22 So I have not seen one released to
23 unspecified parties. Now, maybe my colleagues who are
24 going to be here shortly can tell you differently, but
25 I've never seen that happen.

1 MR. DAVID: This was in an APA case and it
2 was Judge Howie's release in the Little Rock case. You
3 probably didn't see that, since you weren't --

4 MR. JOHNSON: I did not see that one, I'm
5 sorry. Maybe they were involved in it. I don't know
6 the facts of it.

7 MR. DAVID: Thank you, sir.

8 You mentioned CVR use in litigation in New
9 Zealand and how the law was specifically changed in
10 that country. That law was changed in New Zealand to
11 protect the CVR there. Could it happen again in
12 another country, where a CVR could be used in
13 litigation today?

14 MR. JOHNSON: Yes. It can and has been.

15 MR. DAVID: Thank you, sir.

16 As you know, we like to speak of safety
17 proactively versus reactively. We like to prevent
18 occurrences. We don't want to see it happen.

19 With a reference to Cali again, is there a
20 possibility that a similar disclosure could occur to
21 the media again from another country today?

22 MR. JOHNSON: Clearly, yes.

23 MR. DAVID: Thank you, sir.

24 CHAIRMAN CARMODY: All right. Thank you, Mr.
25 David.

1 Now we'll move to the Board of Inquiry, and
2 I'll start with our chief counsel, Mr. Battocchi.

3 Do you have any questions of the witness?

4 MR. BATTOCCHI: Thank you.

5 Mr. Johnson, I want to go back to 1990 and
6 before the legislative change. What was the practice
7 with the airlines in providing access to the CVR to
8 litigants?

9 MR. JOHNSON: The practice was that they were
10 just providing that access. It was discoverable.

11 MR. BATTOCCHI: And it was pretty automatic,
12 wasn't it?

13 MR. JOHNSON: It was almost automatic.

14 MR. BATTOCCHI: Okay. So we have legislation
15 in 1990 that imposes certain hurdles, as well as
16 specific provisions for protective orders for CVRs that
17 didn't exist before 1990, is that correct?

18 MR. JOHNSON: Correct.

19 MR. BATTOCCHI: Okay. And that's -- you
20 would certainly view that as an improvement?

21 MR. JOHNSON: I would.

22 MR. BATTOCCHI: Okay. And in terms of the
23 legislation in 1990, my recollection is the biggest
24 impetus for that was the broadcast of a cockpit voice
25 recorder by I don't know if it was a radio station in

1 Texas, or --

2 MR. JOHNSON: It was on the nightly news. It
3 was --

4 MR. BATTOCCHI: It was on the nightly news,
5 okay.

6 MR. JOHNSON: -- 6:00 news.

7 MR. BATTOCCHI: And -- and, the legislation
8 has been successful to date in preventing that from
9 happening, is that not correct?

10 MR. JOHNSON: In domestic cases, yes.

11 MR. BATTOCCHI: Okay. Thank you very much.
12 That's all I have.

13 CHAIRMAN CARMODY: Dr. Ellingstad?

14 DR. ELLINGSTAD: Thank you. Just a couple of
15 questions.

16 In your response to Mr. Wallace, you
17 indicated that -- something to the effect that the
18 problem of discovery basically is occasioned when the
19 Safety Board returns recorders to the carrier. Is
20 there some alternate disposition of recorders that ALPA
21 advocates?

22 MR. JOHNSON: Well, we would advocate that
23 you retain possession of it. Once you get it, you keep
24 it, and if you had a property issue, you could give a
25 blank tape back, or a new one.

1 But that if you retained it, then -- we had
2 some glimmers of hope in '82, frankly, that maybe that
3 would work out with the way that statute was worded.
4 Again, I was wrong.

5 DR. ELLINGSTAD: Has ALPA ever represented
6 that position in any of these -- these legislative
7 opportunities?

8 MR. JOHNSON: I have discussed it with
9 committee folks up there on the Hill, but I -- I don't
10 know that ALPA, other than little discussions I may
11 have had with ideas or brainstorming, has done that. I
12 just don't know. My guess is it has been done with our
13 safety folks, but I really can't answer that question.

14 DR. ELLINGSTAD: Were there any formal
15 comments that ALPA made in relation to the 2000
16 revision of the NTSB statute?

17 MR. JOHNSON: Not that I know of. Not that I
18 know of or that I can recall.

19 DR. ELLINGSTAD: Okay. In your response to
20 Mr. Julius, you'd indicated that the CVRs are
21 discovered in all major accidents. Just to put a
22 number on that, within the last five years, how many
23 occasions has that been?

24 MR. JOHNSON: I don't know. I would say six
25 or seven. I would have to stop and count --

1 DR. ELLINGSTAD: In five years or so?

2 MR. JOHNSON: I would say -- it might be more
3 or less there. I'm just trying to run through my mind
4 those accidents.

5 DR. ELLINGSTAD: Okay. Finally, is there
6 some legal basis for ALPA's expectation of privacy with
7 respect to CVRs and CIRs compared, for example, to
8 people who work in a bank or a convenience store?

9 MR. JOHNSON: Well, I think that there is a
10 difference in that expectation. I mean, there's some
11 cases out there that give the right of privacy in the
12 work place. In the banks and in the 7-11 stores I'm
13 thinking of where they may have video cameras to detect
14 dishonesty and various things like that for the
15 criminal thing, I think that's totally different than a
16 constant recording of your work place, where, you know,
17 there's no criminal --

18 DR. ELLINGSTAD: Isn't it true that that is
19 in fact the work place of the bank employees and the
20 convenience store employees?

21 MR. JOHNSON: It is -- yes, sir, it is. It
22 is.

23 DR. ELLINGSTAD: Okay. And are -- are you
24 aware of any kind of protections that are provided to
25 people in those kinds of circumstances?

1 MR. JOHNSON: I am not, no.

2 DR. ELLINGSTAD: Thank you.

3 CHAIRMAN CARMODY: Mr. MacIntosh.

4 MR. MacINTOSH: (Off mike). Still not on?
5 One, two, three.

6 MR. JOHNSON: I hear you.

7 MR. MacINTOSH: Oh, okay.

8 Regarding the participation in the ICAO
9 activities, we've talked about it a little bit. I
10 think Mr. Wallace mentioned it. Madam Chairman
11 mentioned it. We have this international group on --
12 excuse me, intergovernmental group on international
13 aviation. And how does ALPA and the -- and the
14 professional associations interact with that group?

15 MR. JOHNSON: My understanding of how we
16 interact is, we send letters to whoever the U.S.
17 government representative is, present our views, and --
18 and try to persuade you to our viewpoints. And in
19 fact, I think in Annex 13 we actually worked with you
20 and Mr. Battocchi, as I recall.

21 So we do our input, at least from the United
22 States' viewpoint, in that way. It's the only way --

23 MR. MacINTOSH: Okay. There is -- there is
24 indeed, though, a voice for the -- for the industry
25 even though this is an intergovernmental activity.

1 MR. JOHNSON: Well, there's an opportunity
2 for us to provide input, yes.

3 MR. MacINTOSH: Okay. Thank you.

4 And I think -- I think it's chaired by DOT,
5 actually, and -- and the secretariat belongs to FAA.
6 We certainly are members in that group.

7 The other point I wanted to perhaps
8 emphasize, I think all of us sympathize with the --
9 with the Cali event. You characterized it as a
10 warning. I think it could actually be characterized as
11 a betrayal of the ICAO convention and the convention
12 that was agreed upon, the provisions therein.

13 If I look at the air claims hull loss
14 instances per year, I see about 25. If we take a 10-
15 year period, we're talking 250 airplanes that have been
16 destroyed, according to insurance records, in the last
17 10 years.

18 How many other events other than Cali have we
19 had over this -- this period? Do you know of any?

20 MR. JOHNSON: Of a U.S. airplane.

21 MR. MacINTOSH: I'm talking about worldwide.

22 MR. JOHNSON: Worldwide.

23 MR. MacINTOSH: Two hundred fifty hull losses
24 in the last 10 years.

25 MR. JOHNSON: Of where the cockpit voice

1 recorder has been released publicly?

2 MR. MacINTOSH: Yes, sir.

3 MR. JOHNSON: There have been other
4 instances, Mr. MacIntosh, and they're in foreign
5 countries where there's no protection for these things.
6 And I can't tell you the number. I'm not sure if
7 SilkAir was one of them or not, but there were some
8 others out there.

9 MR. MacINTOSH: Okay. I would -- I would be
10 somewhat careful about saying there's no protection.
11 When a nation state signs a convention, which is a
12 treaty, there's something there. But we all agree
13 there is no ICAO police. That's very unfortunate, and
14 we don't want it to happen again, we certainly don't,
15 and the emphasis is on it.

16 But I just -- I recognize the betrayal that
17 occurred in that instance, but to -- to have the whole
18 future depend on that instance is fatal.

19 Thank you for your answer, though.

20 CHAIRMAN CARMODY: Before I go to Mr. Cash,
21 Mr. Battocchi had an observation he wanted to share,
22 and then we'll move to Mr. Cash.

23 MR. BATTOCCHI: Yeah. I just wanted to ask
24 Mr. Johnson, in terms of a cockpit environment, secure
25 cockpit, you do see that differently, don't you, than

1 public thoroughfares such as a 7-11?

2 MR. JOHNSON: Well, it obviously is different
3 than a 7-11, yes.

4 MR. BATTOCCHI: Okay.

5 MR. JOHNSON: Particularly nowadays.

6 CHAIRMAN CARMODY: Mr. Cash.

7 MR. CASH: I just had one question. In
8 response to Mr. Julius' question, you said that you
9 would propose more stringent protection on video
10 recorders. Could you just kind of elaborate what --
11 what you envision as -- as being required to get the
12 ball rolling?

13 MR. JOHNSON: Well, what I would say to get
14 the ball going is, the only idea I've come up with, Mr.
15 Cash, is the one that I proposed throughout here, which
16 was an off-the-top-of-the-head idea. The current -- I
17 think that was in relation to the current cockpit voice
18 recorder legislation. To me, the image recorder has
19 much greater appeal for people to get at for uses other
20 than safety, and if we're going to have that, we need
21 to fix the CVR and the CIR at the same time.

22 But with some type of legislation like I
23 mentioned, with the keys to the encryption and you keep
24 the tapes.

25 MR. CASH: Is there a difference between the

1 domestic and international? If -- if the CIR was just
2 a domestic tool, would that be any different?

3 MR. JOHNSON: It may, but we would still want
4 those same -- we'd want -- first of all, we're not
5 happy with the current state of the CVRs. We want to
6 upgrade that. So we would want the increased
7 protection even if it was domestic only. And I'm not
8 sure we could ever restrict it, because these airplanes
9 cross borders pretty frequently now, even the ones that
10 used to fly domestic, the 737s.

11 CHAIRMAN CARMODY: Yes, Mr. Johnson, I have
12 one -- one question, or observation, really. It may be
13 a question, depending.

14 Just today I got a copy of a report put out
15 by the French National Assembly, so it's just been
16 released in July. And it's a series of recommendations
17 which came as a result of the Flash 737 accident.

18 One of the recommendations is to install a
19 video recorder in the cockpit of large transport
20 category aircraft to film the instrument panel, and
21 they express -- they say it should be used for accident
22 investigation only.

23 My question was, first, were you aware of
24 this? And if you're not, I'll understand, because this
25 report is very new.

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MARK DOMBROFF

having been first duly sworn, was called as a witness herein and was examined and testified as follows:

Testimony of Michael Demetrio and Mark Dombroff

MR. CASH: Mr. Demetrio, we'll start with you, I guess. Would you please give your name for the record and title and affiliation and any academic and work experience?

MR. DEMETRIO: Certainly. My name is Mike Demetrio. I'm a partner at the law firm of Corboy & Demetrio, based in Chicago. I'm a practicing attorney for 25 years, initially as a prosecutor in Cook County.

And since that time, I have focused my practice on representing victims, both different, unfortunate events, a great deal of them air crash disasters.

I've also been just end of the term as president of the Chicago Tribal Bar Association, where I represented over 22,000 lawyers and judges in the civil justice system and criminal justice system.

MR. CASH: Thank you.

Mr. Dombroff?

MR. DOMBROFF: Thank you, Mr. Cash. Good morning. My name is Mark Dombroff.

MR. CASH: Push the button. The button's got to be up.

1 MR. DOMBROFF: My name is -- is that better?
2 Not working.

3 Good morning. My name is Mark Dombroff. I'm
4 an attorney with Dombroff and Gilmore here in
5 Washington, D.C. I started my career 34 years ago with
6 the Office of General Counsel at that time in the
7 Federal Aviation Administration, the Litigation
8 Division.

9 I moved to the Department of Justice and was
10 successively a trial attorney in the Aviation Unit, the
11 assistant director for aviation litigation, and for the
12 last five years there, I was the director of aviation
13 litigation for the Department of Justice, defending all
14 elements of U.S. government aviation activities.

15 In 1985, I went into private practice and
16 have defended various airlines and other aviation
17 industry activities since that date.

18 MR. CASH: Thank you.

19 No presentations, and Mr. Julius will be the
20 questioner.

21 MR. JULIUS: Good morning, Mr. Demetrio and
22 Mr. Dombroff.

23 MR. DOMBROFF: Good morning.

24 MR. JULIUS: For the audience and for members
25 of the Board of Inquiry, the witnesses seated on this

1 panel were all involved in the CVR-related litigation
2 in the U.S. Air 427 crash litigation, and the testimony
3 today will be from that perspective, as well as having
4 involvement in CVR-related litigation generally.

5 As a basic overview, the U.S. Air 427
6 litigation took place in both state and federal court,
7 with two judges overseeing most of the pretrial issues.

8 In motions for access to the CVR filed by plaintiffs,
9 which Mr. Demetrio was one of the lead counsel, both
10 U.S. Air, represented by Mr. Dombroff, and ALPA, among
11 others, opposed plaintiffs' access to the CVR. All
12 parties filed legal briefs, and the procedures set
13 forth in Section 1154 were followed.

14 Ultimately, the two judges permitted
15 discovery of the CVR, but the federal judge ordered
16 portions of the CVR redacted, while the state court
17 judge ordered discovery of the entire unredacted CVR.

18 In both instances, the judges permitted the
19 ordered discovery only after protective orders were
20 filed to protect against unwarranted access or
21 disclosure of the CVR recording or non-public material.

22 Portions of the legal documents that these
23 gentlemen were involved with are part of this -- this
24 hearing record, and I believe they're Exhibits 10-C
25 through 10-E.

1 I guess this is a question for everybody
2 here, but you all are familiar, obviously, with the
3 provisions that I've discussed in my opening statement.

4 MR. DEMETRIO: Yes.

5 MR. JULIUS: And you all are familiar with
6 the documents that I just mentioned. I think those
7 documents speak for themselves, but since each of you
8 filed briefs in that action and were intimately
9 involved in the court's orders and the drafting and
10 protective orders, I guess I would ask each of you if
11 there's anything in particular you'd like to draw the
12 audience's attention to with regard to those briefs.

13 MR. DEMETRIO: Well, since I filed the first
14 brief, I probably should go first. In that particular
15 case, on behalf of the members of the families who lost
16 their loved ones, including crew members, we thought it
17 was critical that we obtain a copy of the tape so that
18 we could analyze it with respect to the case itself and
19 the legal issues that arose.

20 At that time, liability in that case was
21 being hotly contested. There were no answers at that
22 time. The NTSB had not yet come out with its
23 conclusions. It was one of the most thorough
24 examinations of an air disaster that I've ever been
25 involved in, including two major public hearings,

1 which, as you know, Mr. Julius, is rare for the Board.

2 The reason that we thought it was so critical
3 was, if you examine the documents filed before the
4 board of U.S. Air and Boeing, they were intently
5 reliant on analysis of the voice recorder, and not only
6 the voices themselves but many important -- what turned
7 out to be important sounds and interpretations.

8 In addition to that, it came to light when in
9 the course of that case we talked to Captain Cobey
10 Johnson, who was from U.S. Air and on the CVR committee
11 of this board, it became clear that the transcript
12 itself, there was -- while we all know there was a,
13 quote, "consensus," there was not an agreement. First
14 Officer Johnson made that clear in his testimony by way
15 of deposition.

16 That made it all the more critical, we felt,
17 representing the families, that we have the opportunity
18 to also analyze that tape in order to evaluate and
19 respond to the positions taken by the defendants.

20 I thought the procedure of the dual hearing
21 and dual analysis by two different judges, one in
22 Pittsburgh, Judge Standish, who was in charge of the
23 MDL, and Judge Judith Cohen from the Circuit Court of
24 Cook County, went extremely efficiently.

25 As you noted, there was a slight difference

1 in the orders issued. I did not -- it was slight as
2 far as the amount of material. But the thing I will
3 emphasize, and I think Jim knows this and this
4 organization, they were allowed to participate in both
5 courts, and the provisions of 1154.4(a) were strictly
6 adhered to -- applied and adhered to. And has been
7 stated here today, I have never known of an instance
8 domestically where that has not been the case on behalf
9 of the attorneys who represent victims.

10 MR. JULIUS: Thank you.

11 Your motion, obviously, prevailed --

12 MR. DEMETRIO: It did.

13 MR. JULIUS: -- to a greater or lesser degree
14 in, you know, the federal or the state court, for the
15 most part, to a greater degree.

16 Mr. Johnson and Mr. Dombroff, as far as
17 pointing out anything you'd like to discuss, would you
18 -- what were the positions that you advocated that were
19 not successful, and if you could shed any light on
20 that?

21 MR. DOMBROFF: I think, Mr. Julius, that for
22 the most part the positions that we advocated on behalf
23 of the airline -- and I should note as a footnote to
24 this that I am not speaking on behalf of any of my
25 clients, past, present, and future today.

1 But the position that we advanced on behalf
2 of the airline were consistent with and almost
3 identical to the positions that we heard today having
4 to do with non-disclosure of the cockpit video
5 recorder.

6 We -- as those who review the exhibits will
7 be able to determine, we advanced the statutory
8 arguments regarding nondisclosure. We advanced the
9 fact that the transcript was available. We advanced
10 the fact that the witnesses were available to testify
11 with respect to the investigation.

12 The arguments with which we met were ones
13 having to do with the fact that the tone and the
14 inflection and the manner of speaking of the pilots
15 would be relevant. The arguments we met also included
16 the fact that the transcript was not complete. And I
17 would note that in fact, if one reads the legend that
18 is on the front page of all NTSB transcripts, it's
19 something of a disclaimer regarding the nature of that
20 transcript, which, in the context of litigation, does
21 not serve the arguments that we advanced well, or the
22 interests of the airline pilots who joined with us with
23 respect to the arguments we advanced.

24 In each instance, the court overruled the
25 objections, and indeed, I should as a footnote point

1 out that I'm not aware of a case where, as Jim earlier
2 indicated, a cockpit voice recorder tape has been other
3 than ordered to be turned over in some form or fashion.

4 There may have been certain redactions, but the tape
5 has almost always been ordered to be turned over.

6 There was not duplication with the different
7 orders. The fact that we even had to go through the
8 proceedings in two different courts made no sense. The
9 fact that we had two different orders, however slight,
10 made even less sense, since the interests would appear
11 to have been the same.

12 Mike is absolutely correct that each judge
13 instituted comprehensive protective orders, and I don't
14 believe that anybody violated those protective orders.

15 And I should also point out that these
16 protective orders are almost always reached by
17 agreement among the parties with respect to the terms.

18 They are virtually never imposed by the court. The
19 court simply says they will be subject to a protective
20 order to be agreed to or worked out by the parties, and
21 these protective orders are almost always quite
22 comprehensive in terms of who gets access, the terms,
23 conditions, and so forth.

24 And it's certainly been my experience that
25 the courts are extremely sensitive to enforcing those

1 protective orders, and the parties are aware of the
2 sensitivity of the courts to that fact.

3 MR. JULIUS: Thank you.

4 Jim, did you want to add anything to those
5 two?

6 MR. JOHNSON: I have very little to add to
7 that. I think Mark set it out.

8 One of the issues that -- what we've always
9 argued and which has been a disappointment to you, if
10 you need to hear the sounds, such as the sounds of
11 flaps or whatever, there are sounds that are just
12 referred to as a grinding sound or a rubbing sound.
13 You can separate out those sounds without hearing the
14 voices, and we've been pretty well unsuccessful in
15 arguments trying to segregate out the sounds and
16 segregate out the voices, and largely plaintiffs'
17 lawyers very well -- and Mike does a great job of this,
18 I must say -- argues that they need to know the
19 inflection and the amount of stress to the extent that
20 can happen and then you can analyze it.

21 MR. DOMBROFF: I'd like to add something,
22 too, as somebody who represents airlines in the
23 aviation industry. We have argued vigorously and will
24 continue to argue to protect these tapes, and we'll
25 continue to recognize that perhaps, given history, it's

1 an uphill battle and we'll seek to get the most
2 comprehensive protective orders that we can.

3 We do that despite the fact that in most, I
4 won't say every case, but in almost every case that I
5 have been involved in, the disclosure of the tape
6 itself in fact benefits the defense of the airline in
7 the actions, or the pilot. It demonstrates the
8 professionalism, the skill, the dedication of these
9 pilots, and in fact runs counter to the allegations
10 being hurled at the pilots and at the airline.

11 Notwithstanding the fact, because of the
12 privacy concerns and the concerns of ALPA and the
13 airline and the relationships and so forth, we argue
14 against disclosure, and I have to say that, from a
15 personal perspective, I frequently deal with misgivings
16 because frequently those tapes are the strongest ally
17 of the pilots in terms of their performance. When
18 they're not, these cases tend to get resolved very
19 quickly and these issues never come to the forefront.

20 MR. JULIUS: Thank you, Mark. I'd like to
21 ask you a follow-up question as counsel for -- for
22 airlines.

23 How do you treat the fact that once the NTSB
24 has returned a CVR recording to the airline? As
25 counsel for the airline, do you have access to that CVR

1 before the courts that want to do the machinations of
2 1154?

3 MR. DOMBROFF: No, the answer is we don't.
4 It's kind of interesting because we have complete
5 access, obviously, to our client and all the records
6 and documents. We never get access to the tape. When
7 the accident occurs, the -- the airline never gets
8 custody of the cockpit voice recording until it's
9 returned to them at some point pretty far down the road
10 by the NTSB.

11 And frankly, I'm never one to encourage the
12 NTSB to return it, because the longer that my clients
13 don't have custody of it, the longer we don't have to
14 deal with this issue, because it's an issue, frankly,
15 I'd prefer not to have to deal with, because it cuts
16 both ways, as I said.

17 When in fact it's finally returned, it does
18 not come to us. It goes back to the airline, and we do
19 not listen to it. Now, I can't speak for every defense
20 counsel representing every airline, but we do not
21 listen to it, and we do not listen to it until after
22 the issue regarding the availability of it in the
23 litigation is resolved.

24 The reason that we don't as a matter of
25 practice is, we do not want to be accused of having the

1 advantage of having listened to the cockpit voice
2 recorder in the context of the arguments being
3 presented to the court with respect to whether or not
4 it should be produced. We -- we think we should be on
5 the same footing as everybody else.

6 Now, you know, maybe that's a pipe dream that
7 we tend to pursue on our own behalf and for our
8 clients, but we think it improves the position that we
9 can take in front of the court that it should not be
10 turned over to anybody, and we don't have the advantage
11 of having listened to it, either. And that has been
12 our general practice.

13 Unfortunately, as in several instances where
14 Jim has indicated, it's not worked. And indeed, when
15 the court listens to it for the first time in camera,
16 which is inevitable -- the judge listens to it
17 privately in his chambers or her chambers to decide
18 whether it should be produced -- we don't attend that
19 and we don't listen to it at that time, either.

20 MR. JULIUS: I guess this would be a question
21 for all three of you. How does that -- how does that
22 work? There's a motion on the table either in the
23 context of U.S. Air 427, or in general from your
24 experience. There's a motion on the table for access
25 by the litigants to the CVR. The judge is aware of the

1 proscriptions and the procedures in 1154.

2 And so there comes a point under the statute
3 where he has to listen to this and decide if the
4 plaintiffs or the moving party have made a case that
5 they deserve or need access for a fair trial to the CVR
6 recording. So he has to listen to it.

7 How does that work? Who assists the judge?
8 Who's present? Is it on the record? If you could just
9 kind of explain for us how that works.

10 MR. DEMETRIO: Well, in 427 -- well, number
11 one, as you know, the in camera hearing of the tape is
12 required by 1154. I think most judges undertake it
13 solely because of that. I don't know of many judges
14 who look forward to listening to the tapes, nor do I.
15 It's a very hard, hard thing to do in a major aircraft
16 disaster case.

17 In 427, a technical expert that Mark's client
18 provided went to the judge's chambers. I certainly
19 took Mark's word that it was an expert. Didn't ask
20 anything more than that because of my trust for him.
21 And they bring sophisticated listening equipment to the
22 judge's chambers and sit there and answer any technical
23 questions -- wait a minute. I'm presupposing this, by
24 the way. Mark says he's not there. He can't be there,
25 nor can I or anybody else.

1 To my knowledge, court reporters are not
2 present. It is just the technical expert and the judge
3 and the equipment.

4 MR. DOMBROFF: I think that's essentially
5 accurate, Chris, in 427 and in the other cases I've
6 been involved in most recently, Alaska Airlines.
7 Somebody from the airline who is familiar with the --
8 not only the tape and the ability to play it for the
9 court and play it back and forth, but also could answer
10 technical questions with respect to what the judge
11 heard, would be available. Normally, it's somebody
12 from the Safety Department.

13 And they go in, and it's just the judge and
14 that individual. The judge typically is wearing
15 earphones so that the judge can hear it more clearly,
16 but in none of those instances has the individual who's
17 been there reported back to me with respect to what
18 transpired, other than the fact that it took place.

19 MR. JULIUS: This is probably a question
20 predominantly for Mike, as someone more likely to be
21 seeking a CVR than others, but given the -- given the
22 restrictions -- and I may be incorrect in that,
23 actually.

24 Given the restrictions that are in place in
25 1154 and, for lack of a better word, the procedures

1 that people go through in the gates, people go through
2 before they can get access to it -- first, I believe
3 the judge has to determine whether a transcript is -- a
4 more full transcript than the one released by the NTSB
5 is sufficient. If that's demonstrated that it'd be
6 insufficient for a fair trial, then access to the
7 recording itself, either in whole or in part.

8 Do you feel that that procedure has worked?
9 Can you -- can you work with those procedures and
10 obtain a fair trial?

11 MR. DEMETRIO: Absolutely. When you're
12 referring to the protective procedures that are
13 something that are of the utmost importance, I go to
14 the extent that when -- given possession of a tape,
15 then whenever I leave the office, if I'm not using
16 that, or if I'm in the office and not using that tape,
17 it's in a safe. I don't keep it in my personal office.
18 I keep it in a safe, out of respect for that order.

19 The logging procedures, the affidavits from
20 individuals who need -- experts who need to testify are
21 also studiously kept. I do think that's a workable
22 system.

23 I think it'll work, with all due respect to
24 Jim, work equally for CIRs. I see no distinction. As
25 long as the protection of privacy is taken into

1 consideration and we do not see it on the nightly news.

2 But yet, it is a valuable tool for the truth-seeking
3 process in the civil justice system.

4 And respectfully to Mark, one of the reasons
5 that his argument with the "I haven't heard it, Judge"
6 doesn't prevail, I think, is if you look at the 427
7 experience, both judges relied heavily on looking at
8 what the, quote, "parties" -- in this case, Boeing and
9 the U.S. Air -- had submitted to the NTSB. And if you
10 look through those documents, which are part of the
11 docket in that case, they are heavily reliant on
12 analysis of sounds and voices on that tape.

13 Because of their heavy reliance on it, in
14 fairness and for a fair trial, given the even playing
15 field doctrine, that's why the victim's representatives
16 should have an equal opportunity to listen to them.
17 And I think that's the genesis of the rulings that come
18 out of most courts.

19 MR. JULIUS: This is for -- Jim, you've had
20 an opportunity to answer this, but for Mark and Mike,
21 do you propose any changes of the current provisions
22 for cockpit voice recorders or, for that matter, the
23 provisions which are identical for cockpit imaging
24 recorders?

25 MR. DOMBROFF: Let me make an observation.

1 That is that I think Jim is right about the feeding
2 frenzy with respect to video imaging. I think that the
3 law, whether one likes it or not, is relatively well
4 established, or at least the path that the law is on is
5 relatively well established in terms of how courts are
6 going to deal with cockpit voice recorders. Unless
7 there's some significant statutory road block thrown in
8 their way, I think it's unlikely that we're going to
9 see dramatic changes in terms of the outcomes of these
10 controversies.

11 I think that to a greater or lesser degree,
12 litigants will be able to get the cockpit video
13 recorders. There may be restrictions, they may be
14 redacted, they'll all be subject to protective orders.

15 I think that video image recording, cockpit
16 image recording, clearly incites people to a greater
17 extent. I think the reference that was made by Jim to
18 demonstrative evidence, I think the Board is probably
19 one of the greatest innovators in this area in terms of
20 matching up computer simulations, computer animations,
21 along with transcripts or just silently.

22 But I still remember the animations that the
23 Board created for the 427 Sunshine hearing where the
24 Board created one for the 427 accident, one for the
25 Colorado Springs accident, and one for the Metro Jet

1 accident, if I'm not mistaken, or the Metro Jet upset,
2 or the East Winds upset, I guess it was.

3 And they were dramatic. The extent to which
4 litigants have taken these animations is even further
5 beyond what the Board has ever contemplated, and
6 they've matched up the cockpit voice recorder
7 transcript to the -- as well as the tape itself, to the
8 animations. And that has been done both -- by both the
9 defendants and the plaintiffs.

10 Once we have real-time video or real recorded
11 video, the extent to which these demonstrative exhibits
12 take on life is going to be even greater. I think the
13 dangers associated with prejudice and -- and the
14 emotional impact and unfairness are going to see limits
15 that we haven't really addressed yet.

16 Will the courts adapt. The courts will
17 always decide. Whether we like how the courts decide
18 or not is a different issue.

19 I'm not satisfied that the protections are
20 there yet, because I'm not sure anybody's fully
21 appreciated the full scope of the impact that this is
22 going to have outside the air safety area.

23 I'm a great believer -- and I know I'm going
24 on -- if it can provide any information at all, it
25 ought to be made available in the context of air

1 safety. But I think once you start to look at these
2 other areas and recognize and take it as a given that
3 it's going to be used in litigation, one has to start
4 think about -- thinking about the kinds of protection
5 to afford it.

6 I think Jim's suggestion, albeit off the
7 cuff, about the keys and access and so forth, is one
8 worth considering.

9 MR. JULIUS: Mike, I'm sure you'll have a
10 comment on this as well, so I'll ask both -- all three
11 of you, actually.

12 It's been proposed informally and somewhat
13 formally at the NTSB in the past that why doesn't NTSB
14 just delete cockpit voice recorders or delete cockpit
15 imaging recorders before we return them. Do you have
16 any comments about those proposals?

17 I guess we'll start with Mike.

18 MR. DEMETRIO: Well, obviously, I don't think
19 that's a good idea because that information provides a
20 route to the ultimate goal of fact-finding and truth
21 finding. Fully recognizing the importance of the Board
22 and its purposes, as long as we're going to have a
23 guaranteed constitutional right through the Seventh
24 Amendment to trials and/or trial by jury.

25 The parties to those trials are entitled to

1 the facts and the data. I again go back to Cobey
2 Johnson's testimony that this is not pure science, and
3 when the Board puts together a transcript to the CVR
4 Committee, it -- it is and can be and should be open to
5 analysis and double checking.

6 Facts beget resolutions of disputes. Mark is
7 right about a point, and 427 is the poster child. In
8 that case, one of the other parties -- or defendants I
9 should say. I get caught up in the NTSB terminology in
10 this room -- put forth a theory via an expert that the
11 captain of that plane was reading a newspaper at the
12 time the plane was going on for approach. And he even
13 went to the point of claiming he could tell it was the
14 "Chicago Sun Times" that he was reading.

15 A CIR would dismiss silly claims like that
16 immediately. In that case, it would have helped Mark's
17 claim. If he was in fact reading the "Sun Times," you
18 know, it would have established that fact.

19 It's not a feeding frenzy. It's -- it's
20 providing of facts and data. What happens to them in a
21 courtroom, that's another issue. There's all sorts of
22 protections that could be put in place by a trial judge
23 under the rules of evidence. But the initial
24 collection of the data for analysis purposes in the
25 lawsuit setting is something that should be kept open.

1 MR. DOMBROFF: I -- I can only imagine the
2 amount of legal proceedings that would take place if
3 the Board proposed a procedure by which it was going to
4 erase tapes before they return them. I think it would
5 make the discovery process look like a minor league
6 episode compared to what would transpire with respect
7 to litigants and the bar generally going after the
8 Board.

9 Frankly, I don't think that's a very
10 realistic approach. I do think that if in fact this
11 comes to pass, one is going to have to examine pretty
12 carefully the manner in which cockpit voice recorders
13 have been used, and I think they've been used
14 responsibly in litigation, Cali aside, or not
15 withstanding Cali.

16 And I think that litigants on all sides have
17 acted responsibly, but I think one should go back and
18 reexamine cockpit voice recorder protections and orders
19 and procedures and do it specifically keeping in mind
20 video and the impact it has on the world today. I
21 think we're probably one step away, if not there
22 already, with respect to being able to real-time
23 downstream the video and the cockpit voice recorders
24 and all the flight data recorder without even having
25 the recorders on board, no longer having

1 crashworthiness issues necessary, and the weight and
2 the cost associated with it.

3 And I think if this Board were to come out
4 with recommendations, I think one of the
5 recommendations ought to be that -- that the use of
6 these outside safety be studied quite carefully so that
7 everybody knows what they're getting into and we're not
8 fighting these battles constantly along the way.

9 MR. JULIUS: Jim, did you want to add
10 anything to that?

11 MR. JOHNSON: I guess, as Mike said, on the
12 fair trial issue, which is one of the issues, Mike, we
13 ran into with that statute. To me, you can have
14 evidence excluded, like we don't allow the use of the
15 Board's report in evidence, although it's out there and
16 available to the litigants.

17 But like in the Air Force where we restricted
18 certain things which did not go into evidence and did
19 not go to litigants. I think the trials that we had
20 there were still fair because there's other information
21 out there. So I suppose that's going to be a debate
22 for another day, but I'm not sure I agree with Mike
23 that you can't get a fair trial without access to a CIR
24 or a CVR.

25 MR. JULIUS: I just have one more question.

1 And that is, in all three of your experiences, when the
2 court addresses the provisions of 1154 and tries to
3 balance necessity for a fair trial and privacy
4 interests of the crew, does it do that on a -- is that
5 a binary decision? Does it -- does it -- is it all the
6 tape or none of the tape, or does it do it with respect
7 to portions of the tape, or is it in your experience
8 always the whole tape or nothing? Or -- the whole
9 tape.

10 MR. DEMETRIO: Briefly, my experience is,
11 it's a case-by-case determination, as well it should
12 be, based upon the specifics of the particular matter
13 before the court.

14 MR. JOHNSON: I would agree with that. I
15 think that judges in general are in favor of liberal
16 discovery. So we walk in the door where this is new to
17 them that someone's -- opposing discovery of something
18 like of this nature.

19 So what they do once they become aware of the
20 statute, they do it, I think, on a case-by-case basis.

21 And for the most part, I think the great bulk of the
22 tape is released, Mike, with some deletions, if it's
23 not all released. But they do exclude some things, and
24 like Judge Standish, he excluded some of the personal
25 last comments of the flight crew, along with some other

1 comments of the flight crew.

2 So it's an ad hoc, case-by-case --

3 MR. DOMBROFF: Again, at the risk of
4 repeating him, I think that not only is it ad hoc, but
5 if you look at one of the orders, for example, the
6 court noted several sounds were heard by the judge
7 listening in camera that are neither noted nor
8 identified in the transcript.

9 In addition, the judge also in that case
10 found that the tone of voice, pitch, and inflection of
11 statements made by crew members, all of which may be
12 relevant to their state of mind, emotional condition,
13 and situational awareness, are completely absent on the
14 printed page.

15 So I think the judges have pretty well
16 demonstrated through their orders, and I don't think
17 this order is unique. By the way, this is a Little
18 Rock -- the Little Rock accident and the judge there
19 ordering the disclosure of the tape.

20 I think the judges have been very, very
21 careful and -- and looked at them very carefully for
22 the purpose of determining what should or what
23 shouldn't be turned over. And as has been pointed out,
24 Judge Standish ordered that certain portions of the
25 tape be redacted.

1 Our experience is that certainly most judges
2 will redact the last few seconds of the tape when in
3 fact it might be the most emotional.

4 MR. JULIUS: Thank you. Actually, I have one
5 further question. False advertising. I apologize.

6 I'd like all of you to address -- you've
7 talked in some detail, so you could just elaborate a
8 little bit. We've discussed the fact that -- that
9 litigants in general have respected the privacy of the
10 crew and -- and they respect the treatment of the CVR.

11 Given that, could you elaborate a little bit
12 on -- on what transpired in the 427 litigation, given
13 that a federal judge ordered a redacted version of the
14 CVR with certain exclamations and other portions
15 removed from the CVR.

16 And then, some or all of you were involved in
17 the state court litigation wherein the parties had
18 access to all of that. So if there's, for instance,
19 experts or lawyers who were involved in the federal
20 case but not the state case, how did that play out, and
21 how did the -- how did the litigants generally treat
22 those -- treat access to CVR issues?

23 MR. DOMBROFF: I was going to say that I'd
24 like to hear that explanation from Mike first, because
25 I'm not sure to this day I understand why the judges

1 came out differently.

2 I think neither one of the cases in which the
3 two judges issued their order went to trial, as a
4 result of which we were never confronted with the use
5 of two different versions of the tape at trial.

6 In terms of the -- the manner in which they
7 were used in discovery, I don't think that any of the
8 discovery issues that -- the discovery proceedings that
9 we had in the cases -- because the discovery was
10 consolidated, taking place at the same time, with the
11 witness only appearing once -- I don't think it really
12 created a problem because, one, the differences were
13 slight, and two, the differences were never focused on
14 in the context of the discovery, since the differences
15 tended to have to do with Judge Standish redacting
16 perhaps more emotional parts of the tape that weren't
17 relevant to what the flight crew was or wasn't doing.

18 MR. JULIUS: Mike, if you could just
19 elaborate on that by explaining, if you could, given
20 that there are protected -- protection orders in place,
21 people that were involved in the state court proceeding
22 that were not -- people that were involved in the
23 federal but not the state, were attorneys respectful of
24 the fact, and experts working for those attorneys,
25 respectful of the fact that actually if the state court

1 CVR, which was unredacted, was discussed and they
2 weren't part of that proceeding, that they would have
3 to respect the nondisclosure provisions and exit the
4 room, or how did that work?

5 MR. DEMETRIO: That's -- that's exactly how
6 it worked. While not being presumptuous with respect
7 to why any judge ruled in a given way, the explanation
8 certainly could be that Mark argued in Pittsburgh and I
9 argued in Chicago when -- maybe that's the reason that
10 the positions came out the way they did.

11 But two different tapes were kept. There was
12 a lead counsel for the MDL in Pittsburgh, whereas we
13 were lead counsel in Chicago.

14 If someone was not authorized to hear that
15 tape that was kept in Chicago, they weren't allowed to
16 hear it. It was that simple. And it never became an
17 issue. As Mark pointed out, the cases on behalf of the
18 victims' families all resolved themselves in that
19 manner, and we never had a trial.

20 But as far as the discovery went, there was
21 never a violation, there was never a problem.

22 MR. JULIUS: Thank you for your answers.
23 That's all the questions I have.

24 I should point out, though, that all three of
25 you have submitted written statements, and those are

1 part of the record.

2 CHAIRMAN CARMODY: Thank you.

3 Moving now to the parties, Mr. Wallace with
4 the FAA?

5 MR. WALLACE: No questions.

6 CHAIRMAN CARMODY: Mr. Barimo?

7 MR. BARIMO: No, no questions. Thank you.

8 CHAIRMAN CARMODY: Mr. Lotterer?

9 MR. LOTTERER: No questions. Thank you.

10 CHAIRMAN CARMODY: All right. Mr. David, Air
11 Line -- Allied Pilots?

12 MR. LOTTERER: I have no questions.

13 CHAIRMAN CARMODY: And Captain Fenwick?

14 CAPTAIN FENWICK: No questions, ma'am.

15 CHAIRMAN CARMODY: My goodness.

16 Ms. Rosser?

17 MS. ROSSER: I'm going to break the trend. I
18 do have one question.

19 CHAIRMAN CARMODY: All right.

20 MS. ROSSER: And I believe this is more
21 directed at Mr. Dombroff than the other panelists. But
22 we heard testimony yesterday about concerns,
23 particularly when an image recorder is the only
24 recording device on an aircraft, that there could be
25 misleading or incorrect interpretations of actions or

1 inactions on the part of the crew.

2 And one of the examples that was given was,
3 flight crew members often will point to or touch a
4 switch on a check -- when they're going through a
5 checklist, but may not actually press that switch or
6 activate that item, and that in a video, that might not
7 be clear whether that switch was actually pushed.

8 And while you can say a picture may be worth
9 or an image may be worth 1000 words, would you also
10 agree that it could be worth 1000 interpretations? And
11 from the perspective of the operator and the crew
12 members, how will that be -- can you elaborate on the
13 impact that would have in court proceedings?

14 MR. DOMBROFF: Yes, I -- I think so. I think
15 in fact those sorts of things now occur with the
16 cockpit voice recorders, where we see statements on
17 cockpit voice recorders of pilots or copilots saying,
18 "What is that?" or "That's not right" or "What does
19 that mean?" And not only does the Board find itself
20 enmeshed in experts examining not -- what's taking
21 place at that time in the flight data recorder in terms
22 of various parameters and whether they can match up a
23 change with respect to that particular statement.

24 In the context of litigation, we frequently
25 see that -- the 427 case actually did go to trial.

1 After all of the families' and the passengers' cases
2 were resolved, a case did go to trial in Pittsburgh for
3 five weeks in which U.S. Airways brought an action
4 against Parker Hannifin to recover certain monies it
5 paid.

6 And at issue during that trial were these
7 very things: what did a particular thing mean; what
8 were the interpretations. And each side put on expert
9 witnesses, and the expert witnesses, just as the Board
10 does, came up with their best interpretations. And at
11 the end of the day -- and I'm not saying this is a
12 perfect answer -- but at the end of the day, it was up
13 to the jury to decide who they believed.

14 Now, ordinarily, the judge is not going to
15 step in and preempt that, so long as it's a proper area
16 of expert testimony.

17 Using the hypothesis or the hypothetical that
18 you've given me in terms of a cockpit image recorder,
19 if that is the only thing that's available and assuming
20 it gets discovered, the argument is going to be that it
21 should be permitted to be played for the jury because,
22 one, it's the only thing available, and two, the
23 experts can testify as to what they believe it to be.

24 And I would think, whether I agree with it or
25 not, that that is going to be a relatively appealing

1 argument to most judges. So I think we're going to
2 find ourselves back to pretty much where we are as it
3 relates to cockpit voice recorders and various types of
4 statements.

5 MS. ROSSER: Thank you. I have no other
6 questions.

7 CHAIRMAN CARMODY: Thank you, Ms. Rosser.

8 Mr. Battocchi said he had no questions, is
9 that correct? All right.

10 Mr. MacIntosh, any questions?

11 MR. MacINTOSH: We heard from Mr. Demetrio
12 and Mr. Dombroff regarding that either permanent
13 custody by the government of the tape or the
14 destruction of the tape.

15 Mr. Johnson, did you opine on that subject at
16 all for your organization?

17 MR. JOHNSON: I -- I was -- can you hear me?

18 What I opined was that the tape would be
19 retained in the custody of the NTSB. I did not suggest
20 that it should be erased or eliminated, but it would be
21 in your custody and it would not be discoverable and
22 not admitted into evidence. I think that's a possible
23 solution here, not one that all people would like and,
24 certainly, my organization would like.

25 And like I said, I was talking off the top of

1 my head. I have not run this by the people that I
2 work for here. But it is one thought.

3 MR. MacINTOSH: Thank you.

4 CHAIRMAN CARMODY: Dr. Ellingstad.

5 DR. ELLINGSTAD: If I could just quickly
6 follow up on -- on Mr. Johnson's suggestion with Mr.
7 Demetrio and Mr. Dombroff, what I thought that I heard
8 Mr. Dombroff say was that basically there would be a
9 great deal of difficulty if the tapes were destroyed.
10 But would either of you comment on the -- on the
11 proposition that Mr. Johnson made about essentially
12 permanent retention by the Board?

13 MR. DEMETRIO: Well, if the idea and the --
14 when I listened to that, I thought it was in the
15 international arena, where there are not protections.
16 That's the context I took that in. If the suggestion
17 is that it be retained by the Board and never available
18 to anybody within a case in which you're seeking to
19 determine individuals' rights, then I think that's a
20 very bad idea. I think it goes against the entire
21 fabric and context of our civil justice system.

22 MR. DOMBROFF: Well, Dr. Ellingstad, as I
23 said, I think -- I've always viewed cockpit voice
24 recorder tapes and transcripts as a two-edged sword. I
25 think more often than not they benefit the flight crew

1 in accidents than they hurt the flight crew. There are
2 some exceptions, but certainly in virtually all the
3 cases I've been involved in, they benefit the flight
4 crew.

5 We never encourage the Board to give them
6 back to our clients. We never encourage our clients to
7 push the Board to get it. We've had court orders
8 requiring us to ask our client to ask the Board to
9 return it to us. We've had the Board refuse and say we
10 could get a copy of it, which has even disappointed me
11 that we got a copy.

12 In the context of air safety, there's no
13 reason for us to have it. It's simply a function of
14 the litigation process. The litigation process is
15 essentially dealing with money. I would be perfectly
16 happy if the Board would hold onto it and not disclose
17 it to anybody and used it simply for air safety
18 purposes. I think the purposes would be served. If we
19 had to go forward and litigate, we could all litigate
20 using the transcript, however imperfect that may be.

21 DR. ELLINGSTAD: Thank you.

22 CHAIRMAN CARMODY: Thank you.

23 Mr. Cash, any questions? No questions.

24 Well, let me thank the panel for your
25 excellent testimony. It was very informative and very

1 interesting, and you're excused.

2 (Whereupon, the witnesses were excused.)

3 CHAIRMAN CARMODY: I suggest we take a quick
4 10-minute break and stretch our legs before Mr. Whitlow
5 takes the stand.

6 We'll be back about -- well, 1:15.

7 (Brief recess)

8 CHAIRMAN CARMODY: I believe the next witness
9 is Mr. Whitlow from the Federal Aviation
10 Administration. Mr. Whitlow is the deputy chief
11 counsel.

12 Mr. Cash?

13 Whereupon,

14 JAMES WHITLOW

15 having been first duly sworn, was called as a witness
16 herein and was examined and testified as follows:

17 Testimony of James Whitlow

18 MR. CASH: Mr. Whitlow, if you would state
19 for the record your name, title, affiliation, and
20 employer, and any academic or work experiences?

21 MR. WHITLOW: Yes, James Whitlow. I'm
22 currently the deputy chief counsel of the Federal
23 Aviation Administration. I started with the FAA back
24 in 1976 as a staff attorney. Worked various positions
25 as the branch manager, assistant chief counsel, and

1 became the deputy in 1998.

2 A graduate of Columbia College and Columbia
3 University School of Law.

4 MR. CASH: Thank you.

5 And Mr. Julius is the questioner.

6 MR. JULIUS: Good afternoon, Mr. Whitlow.
7 Thank you for being here.

8 I have just a few questions for you today
9 with regard to how FAA treats for enforcement purposes
10 CVRs and perhaps would treat cockpit image recorders
11 for enforcement purposes.

12 With that kind of scope in mind, the first
13 question for you is, what is the FAA's enforcement
14 policy with regard to CVR recordings?

15 MR. WHITLOW: Well, our policy's actually in
16 regulation. For 121 operations, it's 121.359(h), and
17 for Part 135, it's 135.151(c). And there's the same
18 language in both. The administrator does not use the
19 record in any civil penalty or certificate action. So
20 as I said, it's regulatory, not just a statement of
21 policy.

22 MR. JULIUS: And that's -- does not use it
23 for any purpose?

24 MR. WHITLOW: Does not use it for any
25 purpose.

1 MR. JULIUS: Either evidentiary or as a lead,
2 perhaps, for enforcement cases?

3 MR. WHITLOW: Right.

4 MR. JULIUS: How about FDR recordings?

5 MR. WHITLOW: Well, the -- the problem that I
6 had in answering that is that it really involves the
7 FOQA program as well. Traditionally, there wasn't any
8 question about our use of -- of flight data recorders
9 for enforcement purposes, really, from my experience,
10 until FOQA came up. And I think it is kind of an
11 analogy to what we've been talking about with the video
12 recorders, because the FAA really wanted to encourage
13 participation in the FOQA programs. It's a voluntary
14 program. But we did have to address the issue of how
15 that information would be used in enforcement.

16 So if you're talking about flight -- flight
17 data recorders in general, there's no provision, but
18 flight data recorders that are covered by an FAA-
19 approved FOQA program, by statute, we don't use that
20 information unless it relates to a criminal or
21 intentional conduct. And there's a long history on how
22 that was developed. I'm not sure if you have time and
23 you want me to go into that today.

24 But it was the result of statutes that that
25 limitation was established that we don't use it for

1 enforcement purposes if you are in an approved FOQA
2 program, unless it relates to criminal conduct or
3 intentional conduct.

4 MR. JULIUS: Okay. I think that's
5 sufficient. I mean, sufficient in the sense that I
6 don't need you to go into the record on FOQA.

7 Let's turn to cockpit image recorders. Does
8 the FAA currently have a policy with regard to image
9 recorders?

10 MR. WHITLOW: Not currently.

11 MR. JULIUS: Can you speak as deputy general
12 counsel or deputy chief counsel to what that policy
13 might be?

14 MR. WHITLOW: What I was hoping I could do
15 was use my testimony to highlight the issues that I
16 think are going to have to be considered and what I
17 believe the process would be. I think we've all agreed
18 that however this turns out, FAA regulations will be
19 involved. And I believe that as part of those
20 regulations, that's where the issue of enforcement will
21 be addressed.

22 But the problem for me is that I, number one,
23 see the enforcement program as part of assuring
24 aviation safety and that because of my involvement in
25 the FOQA program, I do believe that the balancing is

1 going to require some issues and discussions that,
2 really, we haven't had today.

3 When you look at the public record for FOQA
4 and you look at what FAA had to do to address the
5 enforcement issue back then, I think it gives an
6 indication to what we would have to do to address the
7 enforcement issue for -- for recorders, for visual
8 recorders.

9 So I think the -- when you look at the
10 benefit of being able to get, for example, an
11 unqualified pilot out of the sky or to deal with
12 intentional conduct, to deal with criminal conduct,
13 when you look at the kind of conduct that even Congress
14 acknowledged should be the subject of enforcement using
15 FOQA data, you get an idea of the kind of balancing the
16 FAA will have to do.

17 I think this has to be done and will have to
18 be done as part of regulations, and whether there is
19 legislation or not and whether Congress wants to weigh
20 in or not, this is going to have to be a government
21 decision, and that's the other point I wanted to make.

22 This is not going to be just an FAA decision. It will
23 be a government decision.

24 But I do believe the FOQA situation does give
25 an indication of the kind of balancing FAA will have to

1 do. And while I could give you hypotheticals, I could
2 give you an idea as how I think it's going to work out,
3 I just don't right now -- right now know how that
4 ultimately will -- will work out.

5 MR. JULIUS: If you do have a hypothetical in
6 mind, that might be a useful illustration.

7 MR. WHITLOW: Well, again, if you look at
8 what Congress concluded and the predicate that we all
9 wanted to encourage, participation in a voluntary
10 program, and everyone recognized the benefits of
11 voluntary participation in FOQA in addressing future
12 accidents by preventing them through the use of
13 information that otherwise wouldn't be available, even
14 with that predicate, Congress still felt that it was
15 necessary that FAA be able to take enforcement action
16 if you were talking criminal activity or intentional
17 conduct.

18 If you also look at what FAA publicly said in
19 our notice of proposed rulemaking for the FOQA program
20 and the legitimate concern we all would have about
21 unqualified pilots being up in the air, pilots who lack
22 qualifications being up in the air, I think there has
23 to be consideration given to whether that recorder
24 would be used if it's the evidence that you need to get
25 an unqualified pilot out of the sky or to deal with

1 intentional or criminal conduct.

2 So I think those two public processes give a
3 good indication of how I think the hypothetical would
4 work out.

5 MR. JULIUS: Does the FAA have any intention
6 of modifying its policy for CVRs with regard to
7 enforcement for intentional conduct or criminal
8 conduct?

9 MR. WHITLOW: To my knowledge at this point,
10 no.

11 MR. JULIUS: The only other question I have
12 for you today, Mr. Whitlow, is actually going to be the
13 same question that Mr. Wallace asked of me. And that
14 is, does the FAA have any thoughts or do you have any
15 thoughts on how the FAA would treat parametric data
16 obtained from cockpit image recorders that capture
17 such, especially in smaller turbine aircraft that might
18 not have cockpit imaging recorders -- excuse me,
19 cockpit voice recorders?

20 MR. WHITLOW: Yes. To my knowledge, the FAA
21 hasn't reached a conclusion on that yet. And for me
22 personally, it's in a difficult balancing again. And I
23 think when you talk about a specific hypothetical --
24 and this is a hypothetical. Again, it relates to some
25 things that happened maybe 25 years ago, with a

1 hypothetical involved, a situation where the flight
2 data recorder could not identify who the individual was
3 on board that aircraft who engaged in certain maneuvers
4 that would have to be considered intentional
5 misconduct.

6 If the only evidence that I have to prove who
7 that individual was that will allow me to remove that
8 kind of a pilot from the sky, should I be allowed to
9 use it if it's the digital video recorder, or should I
10 consider other consequences of doing that being more
11 important than getting that individual pilot out of the
12 sky.

13 Well, I sat over there for a while trying to
14 figure out how I would answer your question, and to be
15 honest with you, I don't know how it would come out.
16 But I think that's the kind of analysis that's going to
17 have to be addressed.

18 And it will be addressed in the rulemaking.
19 Again, I'm confident that those issues will be worked
20 out in the rulemaking and it'll provide the advantage
21 of notice, comment, and a full discussion.

22 MR. JULIUS: Have there been internal
23 discussions at FAA about these types of issues yet?

24 MR. WHITLOW: Not to my knowledge.

25 MR. JULIUS: No further questions, Madam

1 Chairman.

2 CHAIRMAN CARMODY: Thank you, Mr. Julius.

3 I'm going to start again at the end and move
4 across, making FAA the last questioner.

5 So, Ms. Rosser, any questions for Mr.
6 Whitlow?

7 MS. ROSSER: Thank you. No questions.

8 CHAIRMAN CARMODY: All right. Air Line
9 Pilots Association, Captain Fenwick?

10 CAPTAIN FENWICK: Yes, ma'am. Just one
11 question for Mr. Whitlow.

12 Your hypothetical, sir, where you suggested
13 that a creative or prospective use of the image
14 recorder might be to get an unqualified pilot out of
15 the sky, were you implying that that would be post
16 accident or post event, or are you thinking
17 proactively?

18 MR. WHITLOW: What I was thinking about was a
19 situation where there was no accident, but the
20 hypothetical is based on the fact that the mechanic
21 observed cracks and other damage in an aircraft that,
22 to that mechanic, indicated it had been barrel rolled.

23 There was no accident involved, but because it was an
24 FAA aircraft, FAA was made aware and the inspector was
25 also made aware. So there was the consideration of

1 enforcement action against a pilot that would
2 intentionally barrel roll an aircraft for absolutely no
3 operational reason.

4 Now, if you take the hypothetical where you
5 may know the aircraft was barrel rolled from the flight
6 data recorder, that's not going to tell you who
7 actually did it. And if you have a video recording
8 that would absolutely establish who barrel rolled that
9 aircraft, should you be allowed to use that information
10 to address an intentionally reckless conduct by a
11 pilot.

12 So for the enforcement side, this is
13 something -- and this is what happened with the FOQA
14 analysis, also. This is something we would have to
15 address absent and independent of an accident. And the
16 immunity that we were asked to give didn't presume an
17 accident, just the reverse. The immunity we were asked
18 to give presumed that extraordinary circumstance where
19 there was no other evidence and no other indication
20 that something had occurred.

21 CHAIRMAN CARMODY: Mr. David?

22 MR. DAVID: Yes, ma'am.

23 Mr. Whitlow, FOQA data is parametric,
24 objective data. There is no subjectivity involved. We
25 know what happened. Doesn't subjective CIR data equate

1 more to the CVR and not to the DFDR data? Shouldn't
2 the cockpit image recorder be afforded the same
3 enforcement protections as the CVR because of its
4 subjectivity?

5 MR. WHITLOW: At this point, I don't really
6 know how I would answer that, but I do think that, as
7 part of the rulemaking and the balancing, we will have
8 to address it. I just don't know how I would answer
9 that right now.

10 MR. DAVID: Thank you, sir.

11 CHAIRMAN CARMODY: Regional Airlines, Mr.
12 Lotterer?

13 MR. LOTTERER: Thank you.

14 Mr. Whitlow, one of the issues when the FAA
15 decides on rulemaking, of course, is the adequacy of
16 the cost benefit analysis, a reasoned determination
17 that there is benefit to the rule.

18 How active is the FAA legal with respect to
19 reviewing this type activity, and what are the
20 difficulties that you would see with this particular
21 subject should it go forward as rulemaking?

22 MR. WHITLOW: Well, I think I could answer
23 the first part of your question that we are active, but
24 at this point, there's no way I could answer the second
25 part. That in part is also going to depend upon how

1 broad the requirement is. I just don't think I can
2 answer the second part now.

3 MR. LOTTERER: Thank you. No more questions.

4 CHAIRMAN CARMODY: Mr. Barimo with the Air
5 Transport Association?

6 MR. BARIMO: No, we have no questions. Thank
7 you.

8 CHAIRMAN CARMODY: Thank you.

9 Mr. Wallace?

10 MR. WALLACE: No questions.

11 CHAIRMAN CARMODY: All right. Moving then to
12 the Board of Inquiry, I'll start with our general
13 counsel, Mr. Battocchi.

14 MR. BATTOCCHI: No questions, thank you.

15 CHAIRMAN CARMODY: Mr. MacIntosh?

16 MR. MacINTOSH: No questions.

17 CHAIRMAN CARMODY: Dr. Ellingstad?

18 DR. ELLINGSTAD: No questions.

19 CHAIRMAN CARMODY: Mr. Cash?

20 MR. CASH: I just have one.

21 You made reference to the 121/135 protection
22 against the CVR use. Does that extend to 91, too?
23 Because we do have CVRs installed in 91 aircraft.

24 MR. WHITLOW: Yes. I'm sorry. I didn't
25 bring that regulation with me. The answer is yes.

1 MR. CASH: All right.

2 CHAIRMAN CARMODY: Is that it? All right.

3 And I have no questions, but I do want to
4 thank you, Mr. Whitlow, for coming to testify and to
5 answer our questions. You're excused.

6 (Whereupon, the witness was excused.)

7 CHAIRMAN CARMODY: Mr. Cash, would you call
8 the next witness, please?

9 MR. CASH: We would like to recall Mr.
10 Kenneth Smart from the Air -- Air Accidents
11 Investigation Branch of the U.K.

12 Whereupon,

13 KEN SMART

14 having previously been duly sworn, was recalled as a
15 witness herein and was examined and testified as
16 follows:

17 MR. CASH: Mr. Smart was previously
18 identified yesterday and is still under oath, so we
19 don't need to do that.

20 Testimony of Ken Smart

21 MR. JULIUS: Good afternoon, Mr. Smart.

22 MR. SMART: Good afternoon.

23 MR. JULIUS: I was wondering if you could --
24 I was hoping that you could discuss for us briefly the
25 -- how cockpit voice recorders, for starters, and

1 cockpit image recorders are treated in the United
2 Kingdom.

3 MR. SMART: Yes. Good afternoon. I'll do my
4 best as the nominal non-lawyer in this particular part
5 of the hearing.

6 U.K. practice embeds ICAO's international
7 standards and recommends practices into our legal
8 system as a matter of course. And so for an indication
9 of how we -- our law reads, if you like, you only have
10 to look at the -- the requirements of Annex 13 of the
11 Chicago Convention.

12 Our legislation which comes from the Civil
13 Aviation Act provides us with the powers to have
14 immediate access to all the evidence associated with an
15 aircraft accident, and that includes the flight
16 recorders.

17 We have the power to hold back evidence for
18 the period of the investigation, and in some cases, in
19 the terms of the recorder's recorded data, beyond the
20 end of the investigation.

21 It is an offense to -- for anyone to disclose
22 cockpit voice recorder information without the, in our
23 terms, high court balancing procedure, which is our
24 interpretation of the provisions of Annex 13, i.e. the
25 -- the balance of public interest for disclosure

1 against the case for non-disclosure based on the impact
2 -- the adverse impact that would have on international
3 and domestic -- what it would cost to future
4 investigations.

5 So our legal processes have been in place
6 since the early '80s. They were amended the last time
7 the annex was amended, in 1996. And although we -- we
8 did have calls for disclosure in the early years, I
9 have to say that we have not had any significant
10 challenge to disclosure for about eight or nine years
11 now.

12 There is no distinction in our law between
13 disclosure for criminal regulatory or civil litigation.
14 It's the same. The law provides for protection for
15 the recordings in all cases.

16 We have, on the 5th of January next year, a
17 new piece of legislation for us. I know it's not new
18 for you, but we have a Freedom of Information Act
19 coming. And the subject recorders and other
20 documentation that we -- we have custody of during
21 investigation is an absolute exemption from the Freedom
22 of Information Act.

23 Our practice -- we've heard this morning
24 about the practices here in the United States. Our
25 practice of recordings is somewhat different than the

1 one you have here in that cockpit voice recordings are
2 retained and archived by the AAIB. They are not
3 returned to the operator.

4 The operator -- if the recorder is in
5 reasonable shape, then the operator will get the
6 recorder back and -- and a tape. But he -- they will
7 not get the -- the record itself. It's erased.

8 MR. JULIUS: You said erased?

9 MR. SMART: Erased, yes. We keep --
10 depending on the situation, all significant accidents,
11 we retain the -- the original recording. They will
12 often get -- if it's a tape-based recording or -- they
13 will get a tape with their recorder. If it's in
14 reasonable shape, they'll get it back. Any accident
15 recorder that is not in -- not capable of returning to
16 service, then that -- the recorder itself is retained
17 by the AAIB.

18 Were there other aspects of our legal system
19 that you wanted to explore?

20 MR. JULIUS: Are there any provisions
21 pertaining to, or analogous provisions pertaining to,
22 cockpit imaging recorders?

23 MR. SMART: Not at this time, but the -- our
24 legislation -- the accident investigation legislation
25 is relatively easily amended. And I -- I'm able to

1 amend that at any time. As soon as image recordings
2 look to be introduced into aircraft either coming into
3 the U.K. or already in the U.K., then we will amend the
4 legislation. And I would anticipate that our
5 protection will be exactly the same as that afforded
6 for cockpit voice recorders.

7 MR. JULIUS: That provides an opportunity for
8 me to ask you, I think, about -- and I believe you
9 mentioned it yesterday, during your testimony
10 yesterday.

11 But the Kegworth recommendations, what --
12 what has -- what has occurred since those
13 recommendations either with you or the CAA or the pilot
14 community?

15 MR. SMART: Well, we explored that pretty
16 thoroughly yesterday insofar as the research program
17 that flowed from the Kegworth recommendations comes to
18 fruition later this year, in September, the report, and
19 the report will be published at that stage.

20 It's -- it will be the basis of the
21 legislative amendments, if any, that will take place in
22 the U.K.. If we're going to recorders to be -- image
23 recorders to be fitted, it'll be based on that
24 research.

25 MR. JULIUS: Thanks. I actually meant to

1 focus your answer, if you could, on any discussions you
2 have had with IFALPA or other -- other folks that are -
3 - have concerns about privacy and disclosure. If you
4 could kind of compare those disclosures, if any, for
5 the positions taken in Europe with -- or elsewhere that
6 you're aware of, with, you know, discussions and the
7 testimony you've heard today about U.S. ALPA's concerns
8 and other folks' concerns about disclosure and use of
9 CVR material.

10 MR. SMART: Okay. From a domestic point of
11 view, one of the things that I'm responsible for is to
12 ensure that we're prepared for any approach to disclose
13 cockpit voice recordings, and in that respect, I have
14 established a position in the U.K. where -- whereby the
15 Department for Transportation -- of Transports, as it
16 is, the Civil Aviation Authority, the operators in the
17 U.K. as a group -- and there is an Operators Group in
18 the U.K. -- and the British Air Line Pilots Association
19 automatically provide evidence of the adverse impact of
20 disclosure at any time that we are subjected to a
21 disclosure order.

22 So we have done our best, if you like, or
23 done -- I think we have done as much as we can to
24 ensure that the case against disclosure is fully heard
25 by the judge when -- in those circumstances, when he

1 has to make that -- he/she makes that balancing
2 judgment against public interest.

3 MR. JULIUS: How often does that happen?

4 MR. SMART: I said -- I said earlier it's
5 only occurred three times since we've had this
6 legislation, and it has not occurred for many years
7 now.

8 It appears that -- that the early judgments
9 were non-disclosure, and it seems that that set a
10 precedent which is -- is almost accepted now, that
11 lawyers have not come looking for cockpit voice
12 recorders.

13 MR. JULIUS: In your experience with other
14 countries around the world, to the extent you know, is
15 that -- is that fairly similar to what happens in other
16 parts of the world, or is the -- in other words, is the
17 U.S. the exception?

18 MR. SMART: No, it's not. You certainly have
19 a more litigious society here than we have in the U.K.,
20 and as far as I'm aware, in the rest of Europe and many
21 other parts of the world. I think what you do here
22 today is probably what we're looking at in 10, 15
23 years' time. So this is a good indication of our need
24 to be prepared, if you like. I know here in the United
25 States you say the same about the West Coast, things

1 happening there earlier than they do here on the East
2 Coast.

3 (Laughter)

4 MR. SMART: But, yes, we're probably heading
5 in the same direction as you are heading. You are
6 experiencing it earlier than we would do, but that's no
7 excuse for us not being well prepared.

8 The situation in Europe, if I widen it, is --
9 is slightly different. We have now, within the
10 European Union, we have, since -- since the first of
11 May, we have 25 countries. We have 25 legal systems.
12 They very broadly break down into two distinct types of
13 legal process. There are those which can be
14 characterized by the states in northern Europe, which
15 have the common law processes, and those in southern
16 Europe, which includes France in the context there,
17 which have a legal system based on the Napoleonic Code.

18 In general terms -- and I qualify my answers
19 here -- in general terms, the states which have legal
20 systems based on the common law system apply -- the
21 processes that I've -- I've described apply to the U.K.

22 They have the balancing provision for public interest
23 in their legislation.

24 The Napoleonic Code countries have a slightly
25 different provision in that the recordings following an

1 accident will automatically go to the accident
2 investigation authority in parallel with the judicial
3 authorities. So they -- each party -- both sides there
4 have the recordings. In the common law states, that's
5 not the case, and certainly in the U.K., the recordings
6 are only available to the AAIB for safety purposes.
7 The police and judicial authorities do not have access
8 to them.

9 MR. JULIUS: We were talking yesterday
10 outside the context of the hearing, but you were
11 telling me some stories about Australia, and before we
12 get into Australian legislation, do you know of other
13 countries that have enacted legislation or regulatory
14 policy regarding treatment of cockpit image recorders?

15 MR. SMART: Yes. The situation in Southeast
16 Asia, particularly in New Zealand and Australia, has
17 changed recently quite significantly, and it came about
18 as a result of one of the accidents that's been
19 referred to this morning, and that was an accident that
20 happened in a Dash-8 that occurred on approach to
21 Palmston North Airport in New Zealand in 1995.

22 The general circumstances of that accident
23 were that during -- during the approach to Palmston
24 North, the crew were distracted by a landing gear
25 problem. The -- the result was a -- accident, during

1 which four people died. But the crew, who were
2 seriously injured, survived the accident.

3 During the investigation, the police -- New
4 Zealand police made it clear that they were interested
5 in obtaining the cockpit voice recorder and the flight
6 data recorder, and when the Transportation Accident
7 Investigation Commission in New Zealand had completed
8 their investigation in 1997, the New Zealand police
9 presented them with a warrant for -- for them to search
10 and obtain the cockpit voice recordings and the flight
11 data recorder.

12 The New Zealand Commission appealed against
13 that provision, and that appeal opened up a real can of
14 worms in New Zealand, because it wasn't generally
15 appreciated that -- although New Zealand is a signatory
16 to the Chicago Convention, they had not embedded that
17 provision into New Zealand law.

18 Therefore, the appeal -- the appeal court
19 judgment was that Annex 13 was not something they had
20 to take any notice of in that context, and the police
21 warrant was exercised. The recordings were obtained
22 and prosecutions followed.

23 Now, that had enormous impact, as you might
24 expect, not only in New Zealand, but around the world,
25 and we've heard some of the impacts that that has had

1 here today.

2 There's another issue in New Zealand, and
3 that was rather surprising. They also discovered there
4 was no provision for the carriage cockpit voice
5 recorders at that time, in 1995, and subsequently,
6 obviously, there were major changes to the law.

7 The Transport Accident Investigation
8 Commission, the Department for Transport in New
9 Zealand, the airlines in New Zealand, and the New
10 Zealand ALPA combined to lobby government to change the
11 law, and that was achieved in 1999. And they now have
12 a similar provision to that which we have in the U.K.
13 They have a protection for recordings insofar as they
14 can't be used in criminal investigations without the
15 public interest balance that I referred to earlier.

16 It also had an impact across the straits in
17 -- in Australia, and Australia has perhaps the most
18 recent legislative change in that Australia's
19 legislation was changed in 2003. In Australia, they
20 have, on the face of it, some of the strongest
21 protection for recordings now, and I'll explain how
22 this goes.

23 There were two acts in Australia. The Civil
24 Aviation Act is an umbrella act that gives overall
25 protection for cockpit voice recorders from replay

1 analysis -- from replay analysis and any access at all
2 in any event other than an accident or serious incident
3 that the Australian Transportation Safety Board is
4 investigating. So it's an umbrella act that deals with
5 all other circumstances except an accident or incident.

6 And it -- the protection is such that the penalties
7 for abuse of that are two years in prison maximum.

8 The other act is the Transport Safety
9 Investigations Act, which defines a new concept, and
10 that's "On-Board Recorders", and -- or "OBRs", as it's
11 stated in their act. And the -- the Australian
12 Transportation Safety Board are able to declare
13 recorders as OBRs, on-board recorders, and in those
14 circumstances, it gives them the power to replay those
15 recordings and to decide what elements should be
16 released. In most circumstances, that would be
17 pertinent extracts, in the same way as you have here in
18 the U.K. -- in the U.S.A. and we have in the U.K.

19 There is -- OBRs only deal with cockpit voice
20 recorders and image recorders, and they've already got
21 that into their legislation, so they're prepared, if
22 you like, for the introduction of image recorders.

23 I think the Australians discovered, though,
24 that their protection was somewhat stronger than they
25 had envisioned in that they currently have a problem,

1 and that is that their protection is so strong that the
2 airlines themselves can't determine whether the
3 recorders are actually working, because it's an offense
4 to see if they are -- to actually replay them to see if
5 they're working.

6 So there are -- there are amendments in
7 process to try and resolve this particular problem, and
8 it's often the case when you get very strong
9 legislation that that has some unexpected outcomes, and
10 this is one for the Australians.

11 That's a long answer, but I hope I've
12 provided some information.

13 MR. JULIUS: That was great.

14 It came up this morning about ICAO, and there
15 was some discussion about ICAO and the efficacy of
16 using ICAO to address some of the concerns about
17 disclosure of both CVRs and cockpit image recorders.
18 Could you address, if you could, EU and how EU works as
19 far as proposing legislative changes, and if that's a
20 useful way to address things on a larger scale?

21 MR. SMART: Okay. The -- we had some --
22 we've had some significant change in the legal
23 frameworks in Europe since the early days of the
24 European Commission and the EU, when it was just 11
25 members.

1 The European Commission established what they
2 call competence over the aviation sector in the early
3 '90s, and they did that by -- in the accident
4 investigation field by establishing a directive which
5 provided for the fundamental principles of accident
6 investigation to be established across the then 12
7 states of Europe.

8 When that - when that happened, it opened the
9 door insofar as having established competence, there is
10 no limit to the competence -- the areas into which the
11 European Commission can decide to -- to move. And
12 since that time, they have moved progressively towards
13 a more -- those of you who know the U.K. will know I
14 have to be careful about using the word "federal," but
15 it's sometimes referred to as a more federal system, if
16 you like, of legislation for aviation.

17 The most recent manifestation of that has
18 been that we now have a European regulator, a European
19 aviation safety agency, that was established in
20 September last year, and will gradually take over the
21 functions of the individual states' regulators.

22 Mindful of that fact and the impact that that
23 is likely to have on accident investigation, the
24 European Commission has very recently -- I'm talking
25 about two weeks ago -- had the first meeting of a group

1 of experts that is there to advise them on changes to
2 the legislation in Europe to deal with transport
3 accident investigation, and that is -- the definition
4 of transport in these terms is something you will
5 recognize. It is roads, rail, air, marine, and
6 pipelines.

7 So we are -- a group has been formed, and I'm
8 a part of that group. It's just 12 people. And that
9 group of experts is asked to, within the next two
10 years, to advise the commission on changes to the
11 legislation to deal with the changes that have taken
12 place as a result of having the European regulator.

13 I chair the Aviation Subgroup of that group,
14 and we will be drawing together experts from across
15 Europe and perhaps wider than Europe to -- to discuss
16 what changes are likely to be needed.

17 Now, this is very early in this subgroup and
18 I don't want to prejudge anything that's going to come
19 out of it, but I -- I think you will understand if I
20 say to you that there'll be -- I'd be very surprised if
21 the subjects that have been discussed here today are
22 not on the agenda for legislative changes in Europe,
23 protection for recorders, particularly. It's one of
24 the things we'll be looking at in the near future.

25 While I have the microphone, could I make one

1 point about something that was said this morning in the
2 ICAO context? I think in -- in the evidence from Jim
3 Johnson, he suggested that ALPA had tried to get an
4 incremental change in the recorder protections at AIG-
5 99. And -- and certainly, that was the -- the way it
6 happened.

7 Unfortunately, the outcome was not as we had
8 predicted. I -- I can speak from some experience
9 because I chaired AIG-99. I was elected to do that.

10 The recommendations from AIG-99 were that
11 cockpit voice recording should be separated from the
12 other documents listed in Chapter 5-12 of Annex 13 and
13 given special status. And that was the recommendation
14 that went forward to the Air Navigation Commission for
15 review and subsequently to the council.

16 Unfortunately, when it got to the Air
17 Navigation Commission discussions, IFALPA, the
18 International Federation of Air Line Pilots
19 Associations, made representations which confused the
20 issue. That's the best way I can put it, I think most
21 people will recognize. IFALPA were naturally arguing
22 for very much stronger legislative changes across all
23 the states that were signatories to the Chicago
24 Convention, 188 states. And that is something that I
25 think is unlikely to be achieved by ICAO, as has been

1 recognized here today.

2 But the result was that the -- the commission
3 decided that the recommendation was not, as I say,
4 mature enough to go forward, and we reverted to the
5 pre-1999 version of Annex 13, and that's where we sit
6 today.

7 It's unfortunate that that occurred, because
8 that intervention took us backwards, not forwards. I
9 think IFALPA now recognizes that that was a mistake.
10 I've had this discussion with IFALPA representatives.
11 They recognize that it was not a clever thing to do and
12 what they were seeking of ICAO was not achievable in
13 the terms that they wanted.

14 So I think we're busy now trying to recover
15 that situation. The (ICAO) General Assembly, in
16 September this year, there will be a paper -- papers
17 will be presented which try to recover that situation
18 back to the AIG-99 situation where we have cockpit
19 voice recorders separated from the other documentation.

20 MR. JULIUS: Thank you.

21 Also this morning, there was some discussion
22 about instances of CVRs being disclosed outside of
23 purpose of accident investigation or to the public.
24 We've discussed Cali and whether that's an anomaly or
25 something everyone in the industry should be concerned

1 about, it being a sign of the future.

2 And I was wondering if you could comment from
3 your experience in the international realm how often
4 CVRs are disclosed outside of an accident
5 investigation, or at least disclosed publicly, or used
6 in criminal proceedings.

7 MR. SMART: I've seen the instances that were
8 referred to this morning and others which occur around
9 the world in jurisdictions where the protections for
10 recordings are not as we would wish to see them.

11 Apart from continual pressure to get a
12 consensus across the States of the -- States of the
13 ICAO, signatories, I find it difficult to -- to see
14 that we're going to make a very quick change in that.
15 We're going to continue to see cockpit voice
16 recordings, I'm sure, disclosed inappropriately.

17 I hope that the initiatives in Europe will
18 deal with a bloc of 25 states. We can get further
19 protection there. I think that's a realistic prospect.

20 And I'm sure from what I've heard at this public
21 hearing that there is the -- I think the prospect of
22 your protection here in the United States seems to be
23 reasonable so far. I -- I'm sure that you'll address
24 anything that happens here.

25 But most of the problems are going to occur

1 in -- in States outside the -- the more developed
2 states, if you like, the South America or Africa, the
3 Oriental states. I suspect that's where the problems
4 have occurred and will continue to occur.

5 MR. JULIUS: With what frequency does it
6 occur, and does that frequency cause you to have
7 reservations about whether or not we should install
8 cockpit image recorders?

9 MR. SMART: It doesn't cause me to think
10 again about cockpit image recorders. I think to some
11 extent these -- these issues go with the territory, and
12 I know they have a big impact.

13 But I think the New Zealand and Australian
14 experience suggests that although they have a big
15 impact at the time and cause us difficulties, there are
16 some good to come out of some of these unfortunate
17 incidents insofar as certainly in Australia and New
18 Zealand the laws have changed. We have better
19 protection there than we had before. And I suspect
20 that that's the pattern of progress, if you like, in
21 many other fields apart from this. You need bad
22 examples to get a better legal framework, and that's --
23 that's likely to be the case here, I suspect.

24 MR. JULIUS: This is my last question. I'm
25 certainly, as an employee of the Safety Board, in favor

1 of investigative use of CVRs and cockpit image
2 recorders. But we've also heard testimony that it's
3 become frequent in the United States that they're used
4 in other provisions subject to protective order --
5 other forms subject to protective orders and they're
6 not disclosed to the public.

7 Given that, I just want a clarification from
8 you. I think I heard you say that the United Kingdom
9 and other countries also have circumstances in which
10 their CVRs are used outside of accident investigation
11 purposes?

12 MR. SMART: No, that's not what I said. We
13 don't -- they're only used when there's -- a high court
14 judge has determined that the public interest outweighs
15 the adverse domestic and international impact.

16 MR. JULIUS: Okay. But there are
17 circumstances, or the law recognizes in the U.K., that
18 -- that sometimes circumstances warrant that CVRs are
19 used outside of accident investigation purposes?

20 MR. SMART: The only -- the only
21 circumstances I can imagine that are likely to get a
22 public interest judgment that would outweigh the
23 adverse domestic and international effects would be
24 obvious or deliberate criminal acts of one sort or
25 another. And that's obviously the exception.

1 As I said, we've stacked the balances as well
2 as we can against disclosure, but in those
3 circumstances, it -- the public interest would be
4 served by perhaps releasing the cockpit voice recorder
5 in those circumstances, and the image recorders, I
6 suspect, if there was a hijacking or something of that
7 sort.

8 So those are the only circumstances I can
9 think of. All others we would defend, as you know, to
10 the best of our ability.

11 MR. JULIUS: Okay. And I think I also heard
12 -- to make sure I -- it's clear, I think I also heard
13 you say that in Australia, under their provisions,
14 there is absolutely no provision for any use or
15 disclosure outside of --

16 MR. SMART: It is an offense. No provision.

17 MR. JULIUS: That's all the questions I have.
18 Thank you very much.

19 CHAIRMAN CARMODY: Thank you, Mr. Julius.

20 I'll start again at the end. Ms. Rosser from
21 NATA?

22 MS. ROSSER: Thank you. No questions.

23 CHAIRMAN CARMODY: Captain Fenwick from the
24 Air Line Pilots Association?

25 CAPTAIN FENWICK: Yes, ma'am. I have a few

1 for Mr. Smart.

2 Sir, if the -- regarding the strength of the
3 U.K. laws and the protocols that your agency employs,
4 if the Cali accident, hypothetically, had occurred to a
5 British Airways airplane, I'm assuming that your group
6 would have had the opportunity or the obligation to
7 read out the CVR. And I understand that you would not
8 return a copy of that tape to British Airways, but
9 would you turn over the tape or a copy of it to the
10 Colombian authorities?

11 MR. SMART: We would normally provide a copy
12 of the tape to the investigating authority, because
13 it's their responsibility to investigate the accident,
14 and to do that you need the evidence. So the answer is
15 yes, we would in those circumstances.

16 CAPTAIN FENWICK: Right. And --

17 MR. SMART: We would -- we would counsel and
18 discuss with them how that recording was likely to be
19 used, but ultimately, they are the investigating
20 authority and they have absolute right to that
21 evidence.

22 CAPTAIN FENWICK: But inasmuch as we know
23 that they ultimately released that to a U.S. television
24 station, if perchance the BBC TV, if that's what it's
25 called, had made a similar acquisition and got that

1 tape and played it in the U.K. on the 6:00 news, what
2 would be the response of your agency?

3 MR. SMART: We would make the strongest
4 possible representations to the -- to our broadcasting
5 standards organization, and there are a number of
6 avenues open to us. But how successful we would be at
7 ensuring it didn't happen again, I have some doubts.
8 The freedom of the press and the media is something
9 which is also jealously guarded.

10 CAPTAIN FENWICK: Another hypothetical, more
11 in your background. Let's just say a British
12 registered airplane has an accident in Italy. Under
13 Annex 13, you've got some right of participation.

14 What would be the likely uses of the CVR in
15 that case? Who would get it, and how might it be
16 disclosed, released, or applied?

17 MR. SMART: As I said earlier in the program
18 -- the examining magistrate would have a copy of the --
19 the recordings. The use that they made of the
20 recordings would -- would vary from magistrate to
21 magistrate and situation to situation. I -- I couldn't
22 prejudge that, but I -- I would not be happy that it
23 would not be disclosed at some stage.

24 The Italian accident investigation body, I
25 would have confidence in their ability to -- not to

1 release it now. I mean, you may or may not be aware
2 that the Italians have only just or only in recent
3 years formed their accident investigation body as a
4 separate, independent organization. But they still
5 have considerable difficulties with their judicial
6 authorities.

7 CAPTAIN FENWICK: So in this case, would you
8 expect that the Italians could criminally prosecute the
9 British pilots, using the CVR as evidence?

10 MR. SMART: Quite likely, if that -- if the
11 circumstances were such that that was appropriate.

12 CAPTAIN FENWICK: And in terms of enhancing
13 the European Commission laws, the proposed laws you
14 alluded to, as regards image recorders and the cockpit
15 voice recorders, could you give us an estimated -- a
16 guess at a time frame? Are we talking two years or
17 five or 10 years for resolution?

18 MR. SMART: Well, if -- if the -- I have some
19 experience of European Commission time scales. They
20 are a little bit shorter than ICAO, but not a lot.
21 We're charged with producing our recommendations for
22 legislative changes within two years. It may be
23 because the aviation sector is perhaps more advanced
24 than many of the others, particularly roads. In Europe
25 it's a difficult subject to address. It may be that we

1 can preempt -- submit our recommendations somewhat
2 earlier than the total group of recommendations, but we
3 will see. It's very early days yet.

4 Following that, if there is going to be
5 legislative changes, we are probably looking at three
6 or four years before they -- they go into force. And
7 then, when it's been through the Council of Europe and
8 all the processes there, the practice is usually for a
9 two-year lead time to allow states to adjust their
10 domestic legislation. The one good thing about
11 European law is it trumps domestic law in that sense.

12 So I see this as a very, very good
13 opportunity to make some changes will be significant
14 across the 25 states of Europe.

15 CAPTAIN FENWICK: In terms of a regulatory
16 authority mandating the installation of image
17 recorders, would -- from your experience or estimation,
18 do you think that it's going to be the FAA that first
19 mandates these devices or could a European government
20 take the lead here?

21 MR. SMART: I suspect it will be very
22 difficult for a European government to take the lead at
23 this particular time. If you'd asked me that question
24 five years ago, I'd have said yes, we in the U.K. could
25 have perhaps addressed it ourselves. Not anymore, I'm

1 afraid, because the regulator is now a European
2 regulator and it is EASA who will make that decision.

3 They are a very new organization, and I don't
4 think this is high -- at the moment, it's not high on
5 their agenda. They are, at the moment, just
6 establishing their credentials to certificate the Air
7 Bus A-380, and they have a very small staff as we speak
8 today. It's going to build over the next few years
9 into an equivalent of the FAA.

10 CAPTAIN FENWICK: Thank you, Mr. Smart.

11 My final question is actually quite a simple
12 one. Under the current protocols or practices of your
13 agency to date, does the AAIB produce and publicly
14 release a CVR transcript, and if so, is it redacted at
15 all?

16 MR. SMART: The answer to that is no, we --
17 we stick strictly to the Annex 13 provisions, and that
18 is that we publish pertinent extracts of the transcript
19 of the recording in our reports. We don't release a
20 transcript in that sense.

21 CAPTAIN FENWICK: Thank you very much, Mr.
22 Smart.

23 CHAIRMAN CARMODY: Allied Pilots, Mr. David?

24 MR. DAVID: Thank you.

25 Mr. Smart, expanding on Mr. Julius' question,

1 speaking strictly on your laws and not on any opinion,
2 may a high court judge see due cause and disclose
3 recorder information to the public?

4 MR. SMART: Not to -- it could be released in
5 court, if it was -- if the balancing procedure that I
6 explained before came down on the side of the public
7 interest.

8 MR. DAVID: Certainly. And it could only be
9 released in court, it could not be released in any
10 manner to the public?

11 MR. SMART: I would -- in -- I would hope in
12 circumstances where that applied where it was
13 appropriate that -- that -- it was inappropriate for a
14 recording to be heard in public, I would hope we would
15 be able to establish a situation where that could be
16 heard in camera.

17 Now, I -- I haven't gone through that process
18 because we haven't had a disclosure, so I can't -- I
19 can't say how that would go. As I said before, the
20 only -- the only circumstances in which I can envisage
21 the balancing act coming down on the side of public
22 interest would strictly be where there was a criminal
23 act of some sort.

24 MR. DAVID: Certainly, and I would hope the
25 same thing. But in my research into law, I believe,

1 from what I've read, that it is possible that it could
2 be disclosed in public should sufficient cause be seen.

3 MR. SMART: It's should sufficient cause be
4 seen. As I said, I've hopefully stacked the scales
5 pretty well on the other side, because adverse domestic
6 and international impact is -- is a fairly powerful
7 tool if you present the right arguments in court, and
8 we will spare no expense to present the right arguments
9 in court. That's all I can say to you.

10 MR. DAVID: Could the cockpit voice recorder
11 or the cockpit image recorder if installed in a U.S.
12 aircraft involved in an accident in the U.K. be
13 disclosed by this means?

14 MR. SMART: I suspect not, unless there was a
15 deliberate criminal act involved. I -- the same
16 provisions would apply, and we would use exactly the
17 same arguments to protect the recording in those
18 circumstances.

19 MR. DAVID: But it would be treated the same
20 as a recorder from a U.K. aircraft?

21 MR. SMART: Absolutely. It's absolutely the
22 same. In fact, our law requires us to treat all our
23 investigations in the same way. There's no
24 discrimination against colleagues from overseas, shall
25 we say.

1 MR. DAVID: In the past, you said there have
2 been cases where there were disclosure years ago, is
3 that true?

4 MR. SMART: No, no. I said we've had --

5 MR. DAVID: Challenges?

6 MR. SMART: -- challenges, three challenges,
7 which were unsuccessful.

8 MR. DAVID: There's never been a disclosure.
9 Thank you. I wanted to clarify that.

10 And lastly, has any part of the JAA, which is
11 now going away, taken over by EASA, recommended a
12 cockpit image recorder?

13 MR. SMART: There is a group that looks at
14 recorders within the JAA -- that looked at recorders
15 within the JAA context, and they were considering image
16 recorders, but a lot of that work was awaiting the --
17 the ICAO FLIREC Panel's consideration, after the
18 technical specifications that we've heard about at this
19 hearing were completed, and they are completed now.
20 And the FLIREC Panel, I know, are anxious to meet to
21 consider the specifications and come up with a -- a way
22 forward.

23 MR. DAVID: The FLIREC Panel -- for instance,
24 I made a quick note of a couple of things that they
25 said in their last paper. They said they are strongly

1 committed to the introduction of cockpit image
2 recorders and -- providing that the specifications were
3 satisfactory and the protections were in order.

4 So the next FLIREC Panel --

5 MR. SMART: I don't see anything coming from
6 the JAA now that the EASA isn't close, because most of
7 the JAA functions are going to be transferred to EASA.

8 MR. DAVID: I don't believe Mr. Goudou is
9 going to be considering it in the near future.

10 MR. SMART: No.

11 MR. DAVID: Thank you.

12 CHAIRMAN CARMODY: Thank you.

13 Regional Airline Association, Mr. Lotterer.

14 MR. LOTTERER: Yes. Mr. Smart, in 1997, the
15 FAA adopted a rule that enhanced the number of
16 parameters of flight data recorders to -- it basically
17 enhanced capability of that particular product.

18 CHAIRMAN CARMODY: Excuse me. Is your
19 microphone on? Because I'm not sure the recorder can
20 hear you.

21 MR. LOTTERER: Okay. In 1997, the FAA
22 adopted a rule that increased the number of parameters
23 required on it, and it was also part of a retrofit
24 program. Did Europe, U.K. and the rest of Europe,
25 adopt a similar program after they did?

1 MR. SMART: I think it's fair to say we were
2 a long way in advance of you at that stage. The number
3 of parameters that we required was far in excess of
4 that that was required here in the United States at
5 that time. So to some extent, you were catching up,
6 and this process has very much been one of
7 leapfrogging. I think you're now -- you're now in a
8 better position than we are in some circumstances.

9 But it's a process of continual development,
10 and we've -- some of the recorders that we see these
11 days -- I mean, we're looking at thousands of
12 parameters. I think 5000 parameters on a recorder is
13 not unheard of, and I would not be at all surprised
14 within a very short time to see it somewhere nearer to
15 10,000 on the latest recorder systems.

16 MR. LOTTERER: There are clearly benefits in
17 advancing the technology for newly manufactured
18 aircraft, but in terms of retrofit, was there any
19 retrofit programs within Europe?

20 MR. SMART: I -- I'm not -- the retrofit
21 programs that took place were with recorder changes,
22 certainly, to solid-state recorders from some of the
23 older generation recorders, but I -- I don't think we
24 actually introduced a retrofit program in that sense.
25 I think that was -- I was referring to some catching

1 up. Perhaps that is one area where we do need to catch
2 up, but we were -- we were somewhat better placed, in
3 any event, before that -- your legislation --
4 legislative change took place.

5 MR. LOTTERER: Thank you. No further
6 questions.

7 CHAIRMAN CARMODY: Air Transport Association,
8 Mr. Barimo?

9 MR. BARIMO: No, no questions. Thank you.

10 CHAIRMAN CARMODY: All right. And Mr.
11 Wallace with the FAA?

12 MR. WALLACE: In -- Mr. Smart, as part of the
13 EASA organization, is it contemplated that there will
14 be a single accident investigation authority for your
15 --

16 MR. SMART: It's one of the considerations
17 that we have to look at, and I think in -- again, I
18 can't prejudge what's going to come out of our -- our
19 expert group, but it will certainly be one of the
20 things that we look at.

21 There is a general feeling that no one state
22 certainly in Europe, and perhaps no one state in most
23 of the world -- I hesitate because I'm here in the
24 United States, but the expertise and resources that you
25 require for -- for accident investigation these days

1 are truly international, and the sharing of resources
2 is something that we have to consider. Across the 25
3 states of Europe, we've got France, Germany, and the
4 U.K. who are -- have reasonable size accident
5 investigation organizations. The other states, the --
6 the other 22 states, have very small organizations and
7 probably are not equipped to conduct a major
8 organization.

9 Now, we've got the A-380 coming into service
10 in just a few years, and an accident to an A-380, for
11 instance, would be something that we are currently
12 preparing for in the U.K. but is probably something we
13 have to gear up for across Europe, not just -- not just
14 individual states.

15 MR. WALLACE: So -- but it's not the notion
16 of there being -- now we have a single European
17 Aviation Safety Agency which really has regulatory
18 authority to a degree, which JAA could maybe be
19 described as sort of a club which was still dependent
20 on the individual member states.

21 So it's not off the table, this -- this --
22 the notion that there would be a single accident
23 investigation agency for Europe?

24 MR. SMART: No, it's not.

25 MR. WALLACE: And then this would --

1 presumably, this would require some ICAO adjustments or
2 whatever.

3 MR. SMART: It would do, and as you're
4 probably aware, the European Commission is lobbying
5 hard for representation within ICAO and having some
6 difficulty with that. The -- the changes that would
7 have to take place if we were to have a single accident
8 investigation body across 25 states would be something
9 else that would have to require some adjustments.

10 The exact form of that would be -- would be
11 interesting. You could establish a hub and satellite
12 sort of system allowing individual states to maintain
13 their lead, if you like, in the investigation although
14 being part of a larger organization. That was
15 one model that could be envisioned.

16 I'm very anxious not to go down this route
17 because, as I've said, we've only just started our
18 work. We have a long way to go, and there's no
19 guarantee that having made our recommendations to the
20 commission for legislative change that the -- the
21 commission will adopt them.

22 So all I can ask you to do is to watch this
23 space.

24 MR. WALLACE: Based on your -- you know, your
25 extensive knowledge of regulatory and accident

1 investigation agencies worldwide, are you aware of some
2 countries where -- which do not have the same
3 distinction that your country and our country have?
4 That is, we have the regulatory agency and we have the
5 investigation agency separate.

6 And so I'm sure you are aware of countries
7 where it's essentially the same agency, and I'm
8 wondering whether that -- you know, we have -- we have
9 here an issue where the -- the investigative agencies
10 of the United States and of the U.K. clearly support
11 the image recorders and are probably disappointed that
12 our regulatory agencies haven't been quicker to respond
13 to that. Has that worked any differently in any
14 countries where they are essentially the same
15 authority?

16 MR. SMART: Well, if you look back just a few
17 years, all the new member states -- the new 10 member
18 states of the European Union had organizations that
19 were just -- accident investigation was a part of the
20 regulatory authority. If you want to see a model of
21 how European legislation can change organizations, all
22 those 10 states are now -- have now established
23 independent accident investigation bodies.

24 So that's just within Europe. Across the
25 world, yes, you're absolutely right. There are very

1 many organizations that we have contact with through
2 accident investigations that we assist them with or we
3 are a party to where the investigator -- investigation
4 body is a part of the regulatory authority. And that's
5 -- that's -- I think if you took the 188 states that
6 are signatories to the Chicago Convention, you'd
7 probably find the majority fall into that category,
8 rather than -- and organizations such as ours are the
9 -- probably the minority.

10 MR. WALLACE: The minority in number but not
11 in horsepower. I mean, as a practical --

12 MR. SMART: Absolutely.

13 MR. WALLACE: -- as a practical matter, as is
14 the case, for example, with regulation of design
15 standards for transport aircraft, these are really
16 dictated by the countries that build them, essentially.

17 So -- but it seems to me that Europe might
18 present an opportunity where you essentially end up
19 with a major player, one of the absolute two major
20 players in the world scene in aviation having the
21 regulatory agency and the investigative agency being
22 part of the same organization.

23 MR. SMART: No, that -- that will not happen
24 in Europe. One of the fundamental principles
25 established in the directive that was adopted in 1994

1 and came into force in 1996 was to establish the
2 fundamental principle of independence for the accident
3 investigation bodies across Europe. If -- and it's a
4 big if -- if the Commission decides to go for a single
5 accident investigation agency alongside the regulator,
6 it will be an independent agency. It will not be part
7 of the regulator, absolutely not.

8 MR. WALLACE: All right. Then, do you -- let
9 me ask, could you envision a scheme in which the
10 regulations related strictly to accident investigation
11 tools, if we can call these recorders accident
12 investigation tools, if those regulations were -- if
13 the authority for that were given to the accident
14 investigation agency rather than the agency that
15 basically regulates safety of the airlines in the
16 industry?

17 MR. SMART: Yes, I can envisage that. In
18 fact, that is the model that is there in the individual
19 States today. I mean, in the -- across all the States.
20 The legislation for the independent accident
21 investigation bodies and the way that they treat the
22 recorders and the tools, as you put it, of our trade,
23 you -- are established by the accident investigation
24 bodies through the government as independent agencies
25 of the government.

1 MR. WALLACE: Right. Maybe I wasn't clear.
2 I'm thinking about the regulatory authority to mandate
3 recorders.

4 MR. SMART: Oh, you're talking about
5 mandating recorders. Yes, I mean, they -- if the -- if
6 EASA was to mandate image recorders, for instance, I
7 suspect that that will be done on a -- on a basis of
8 following a U.S. lead rather than something that is
9 likely to happen first in Europe.

10 MR. WALLACE: Let me ask the question just
11 another way. What would you -- the NTSB, and I assume
12 also the AAIB, are not regulatory agencies in that
13 sense, but -- but what would you think about the
14 notion, if they were given the regulatory authority,
15 that the NTSB for example was not asking --
16 recommending that the FAA issue such a rule, but rather
17 that the NTSB could just issue it itself, or the AAIB?

18 MR. SMART: I doubt if that would be --
19 that's not the pattern of the way things go. It's not
20 the pattern, I know, here in the United States. What
21 happens is we -- we make recommendations for
22 legislative change, regulatory change, and the
23 regulator will make a decision, along with -- usually
24 alongside governments. That's the way it works in the
25 U.K., certainly.

1 Often, when I make a recommendation -- if I
2 was making a recommendation now that the U.K. should
3 mandate image recorders, I would make that case to our
4 Secretary of State for Transportation. That's it. If
5 my influence is what I would wish it was at that stage,
6 then the regulator would be asked for their opinion.
7 But there will be some -- it's part of the influencing
8 process, if you like. That's the way that this would
9 work.

10 It would not be for me to just deal with --
11 directly with the regulator and -- and try and
12 influence them there. I would use more than that in
13 terms of my powers of influence in the U.K.

14 That's not -- other jurisdictions that don't
15 have that, if you like, degree of independence as I
16 have in the U.K. where I can influence politicians in a
17 more direct way, perhaps, than perhaps other
18 jurisdictions.

19 MR. WALLACE: Thank you very much, Mr. Smart.

20 CHAIRMAN CARMODY: All right. Going to the
21 Board of Inquiry, Mr. Battocchi, do you have any
22 questions?

23 MR. BATTOCCHI: No, thank you.

24 CHAIRMAN CARMODY: All right. Mr. MacIntosh?

25 MR. MacINTOSH: No questions.

1 CHAIRMAN CARMODY: No? Dr. Ellingstad?

2 DR. ELLINGSTAD: Just one clarification, if I
3 could, Mr. Smart.

4 With respect to your -- your practice of
5 returning recorders with blank tapes, if you had a
6 solid-state recorder, have you erased the recorders?

7 MR. SMART: Yes -- recording. I know those
8 of you who were listening yesterday will appreciate
9 that erasing does not guarantee that the data is
10 absolutely erased. But on the basis that we can't
11 reconstitute the data, we would think that was good
12 enough in the circumstances.

13 DR. ELLINGSTAD: Thanks.

14 CHAIRMAN CARMODY: Mr. Cash.

15 MR. CASH: I just have one.

16 What would you propose our direction be with
17 ICAO to try to get -- affect some change? What would
18 you envision as --

19 MR. SMART: The FLIREC -- I would -- and we
20 are encouraging the FLIREC Panel to meet and pick up
21 their responsibilities from the AIG, which handed the
22 business of image recording to them to make their
23 recommendations.

24 As it stands today, the FLIREC panel, we're
25 waiting for the technical specifications to be

1 completed. They are now completed, and I think the
2 FLIREC Panel should be in a position to make
3 recommendations about taking the subject of image
4 recording further. So that's the first step.

5 I am lobbying to get the FLIREC Panel to meet
6 again. There is always with these panels a financial
7 issue with ICAO, and that has been pointed out to me,
8 but that won't stop us lobbying to get the panel
9 together.

10 Beyond that, the -- the General Assembly
11 meets in September this year, and there are papers that
12 can be submitted -- are being submitted to reinforce
13 some of the things we've been talking about here. As I
14 said earlier, the -- separating cockpit voice recorders
15 and treating them as a separate subject can give them,
16 if you like, more importance in that way. The
17 incremental change that Jim Johnson referred to,
18 getting that back on the table, is important, I think.

19 And the general -- the general push to get
20 this subject discussed, understood, and achieve the
21 consensus that is not always easy to achieve in the
22 ICAO forum, but if it's not discussed, if papers aren't
23 presented, then it doesn't stand any chance at all of
24 achieving that sort of consensus. So there's no point
25 in sitting on our hands here. We have to get up and

1 actually present our thoughts, our ideas within the
2 ICAO forum.

3 MR. CASH: Thank you.

4 CHAIRMAN CARMODY: Thank you.

5 And I have no questions, but I want to thank
6 Mr. Smart for your testimony once again. It was very
7 informative, and thank you for taking our questions.
8 So you're excused.

9 MR. SMART: Thank you very much.

10 (Whereupon, the witness was excused.)

11 CHAIRMAN CARMODY: Why don't we come back at
12 3:00. We'll take a half-an-hour break. Thank you.

13 (Brief recess)

14 REGULATORY ISSUES

15 CHAIRMAN CARMODY: Please take your seats.

16 MR. CASH: Yes, we'd like to call David Hempe
17 from FAA and Tony Fazio from the Federal Aviation
18 Administration.

19 Whereupon,

20 DAVID HEMPE

21 having been first duly sworn, was called as a witness
22 herein and was examined and testified as follows:

23 Whereupon,

24 TONY FAZIO

25 having been first duly sworn, was called as a witness

1 herein and was examined and testified as follows:

2 MR. CASH: Mr. Hempe, we'll start with you, I
3 guess. Just state your name for the record and your
4 place of employment and title and any work experience
5 or educational experience.

6 MR. HEMPE: My name is David Hempe. I work
7 for the FAA. I'm currently the manager of the Aircraft
8 Engineering Division here at the FAA Headquarters.
9 I've been with the FAA for about 13 years. The last
10 four, my responsibilities include oversight and
11 approval of certification procedures, as well as
12 technical specifications associated with avionics as
13 well as other areas.

14 So I have a bachelor's of science of
15 Aerospace Engineering. Previous to that, I worked
16 about six years in industry.

17 MR. CASH: Thank you.

18 Mr. Fazio?

19 MR. FAZIO: Yes. I'm Tony Fazio, director of

20 --

21 MR. CASH: The button needs to be out.

22 MR. FAZIO: Director of rulemaking for the
23 FAA.

24 CHAIRMAN CARMODY: Still not working.

25 MR. FAZIO: Tony Fazio, director of

1 rulemaking. I've been with the FAA 22 years, where
2 I've held various staff and managerial positions both
3 domestically and abroad.

4 My position currently is director of
5 rulemaking. I've been there five years. My
6 responsibilities are basically to oversee the general
7 rulemaking process at the FAA.

8 I hold a master's in Public Policy from the
9 University of Maryland and undergraduate degrees in
10 Economics and European Studies from the University of
11 Maryland.

12 MR. CASH: Thank you.

13 Mr. Hempe is going to be questioned by Ms.
14 McCOMB, and Mr. Fazio by Ms. Bruce.

15 Testimony of David Hempe

16 MS. McCOMB: Thank you.

17 Mr. Hempe, what is a technical standard
18 order, or a TSO, and how are TSOs developed?

19 MR. HEMPE: Basically, a technical standard
20 order is the ability for the FAA to come up with a
21 specific standard for materials, processes, parts,
22 where we can promulgate a standard by which an
23 applicant can come in and apply for certification.
24 Once that standard is -- is approved, an applicant, if
25 they get approval or authorization, they can produce

1 that, which becomes an eligibility for being put on an
2 aircraft.

3 MS. McCOMB: And then, how are the TSOs for
4 cockpit voice recorder and flight data recorder systems
5 developed?

6 MR. HEMPE: I think it's similar to the
7 discussion we've had the last two days, is
8 traditionally we have entertained and been part of an
9 industry-government process where consensus is built
10 through, say, EUROCAE. And then what we do is we would
11 take those standards and evaluate them specifically for
12 their capability to be promulgated into a
13 specification.

14 MS. McCOMB: And during that process, how
15 long did it take to develop the TSOs after the
16 referenced EUROCAE documents were completed?

17 MR. HEMPE: Historically, for ED-55 and ED-
18 56, which were the CVR and FDR current TSOs, it -- my
19 understanding is it took about three and three and a
20 half years between the time that the final EUROCAE
21 document came out to the time that there was a
22 specification available for industry to pick up and
23 use.

24 MS. McCOMB: In March of this year, the FAA
25 responded in a letter to the Safety Board regarding the

1 image recorder recommendations from the Wellstone
2 accident. And in the response, the FAA stated that the
3 FAA is developing a technical standard order for the
4 image recording portion of ED-112.

5 What is the status of that TSO development?

6 MR. HEMPE: All right. Currently, we're --
7 we have an internal group that is looking at ED-112,
8 and our goal is to try to promulgate a TSO standard,
9 possibly two TSO standards. I think we're looking for
10 possibly to revise TSO C-123 to incorporate image
11 recording and other things as stand-alone recorders.
12 It wouldn't necessarily supersede C-123, but it would
13 be a -- an additional aspect of C-123 that somebody
14 could pick up for image recording.

15 We are also possibly looking at taking ED-112
16 and coming up with a combi recorder that could do data,
17 com, CNS, as well as imaging.

18 MS. McCOMB: In that process, you would --
19 123 applies for CVRs. You would not see any need to do
20 anything to 124-A for FDRs?

21 MR. HEMPE: That's correct.

22 MS. McCOMB: Okay. Would an image recorder
23 TSO resemble the same format as a CVR or FDR TSO?

24 MR. HEMPE: Yes. I mean, traditionally that
25 is picking up a lot of the standard. There may be

1 deviations. For example, I think in the current C-123
2 we had burn rates that were greater than what was
3 called out in the ED-56, I believe. So there --
4 sometimes there are deviations or there are
5 clarifications where we may get more specific, more
6 prescriptive in the TSO. But generally, we probably
7 follow the same principle, especially with ED-112, and
8 it was probably good to hear these last two days
9 consensus that a lot of people feel that that would be
10 a smooth transition in moving that into a TSO.

11 MS. McCOMB: Okay. ED-112 defines five
12 classes of image recorder systems. Will the TSO
13 address each class of recorder separately, or will
14 there be separate TSOs developed for each class of
15 recorder?

16 MR. HEMPE: I think our goal is to, you know,
17 basically stick to ED-112 as much as possible. My
18 understanding is that we will have all five classes
19 called out in that single TSO or those two TSOs.

20 MS. McCOMB: Okay. How many -- in your -- in
21 this entire process, how many TSOs are currently in
22 development?

23 MR. HEMPE: Oh, including non-recording TSOs?

24 MS. McCOMB: Yes.

25 MR. HEMPE: I'd say at least we have 20, and

1 a lot of the priority has been in the CNS area,
2 especially in performance, nav, and com area, where
3 we're trying to do a lot of work with ICAO, some of the
4 data link stuff where we're trying to make boxes
5 available, some of the TCAS work as well. We have RVSM
6 activity with TSOs as well, as well as flight
7 information service. So trying to bring weather and
8 other activities into general aviation and streamline
9 certification approval to help general aviation pilots
10 with weather maps and those kinds of information.

11 MS. McCOMB: And given the work load and the
12 prioritization, how many TSOs generally do you get out
13 in a given year, say?

14 MR. HEMPE: I want to say two to three. I
15 think with this one, you know, we are promulgating it
16 as quickly as we can based on the response we gave to
17 the NTSB. I think our goal is to try to get both TSOs
18 out for public comment by the end of '05, and that's
19 part of the process. It's not necessarily a legal
20 requirement, but we do almost in all cases put these
21 out for public comment and then disposition those
22 comments. That includes legal review both for the
23 dispositioning of comments as well as before we put it
24 out to the "Federal Register."

25 MS. McCOMB: Is there anything in the process

1 that -- in your prioritization system that necessarily
2 expedites the TSO process?

3 MR. HEMPE: I think the thing that mainly
4 expedites it is the idea that if our internal review --
5 we feel like there's enough prescriptive information in
6 the spec to move forward, that really helps. I think
7 the other thing is just hearing about consensus. I
8 think the more consensus we get in terms of, for
9 example, comments that we get after we put out the
10 NPRM, that can have a make-or-break effect on how fast
11 you get the TSO out.

12 So for example, if we put it out in September
13 and comments are very light in terms of understanding
14 the requirements and additional stuff that we put in
15 the specification, you're talking about maybe a two- or
16 three-month turnaround. So by early spring we could
17 have something actually put out as a final document.

18 If comments were severe, as we have had in
19 previous TSOs, it could delay it for up to a year, and
20 sometimes that might even mean going back to the
21 drawing board with industry to understand their
22 comments.

23 MS. McCOMB: Okay.

24 MR. HEMPE: So there is some variability
25 there.

1 MS. McCOMB: That concludes my questions.

2 CHAIRMAN CARMODY: Go ahead, Mr. Grossi.

3 MR. GROSSI: I just have one question.

4 Would the introduction of a new type
5 aircraft, say the 7E7, would that have an impact on
6 expediting the TSO process so that it would be
7 available for that particular aircraft?

8 MR. HEMPE: Not necessarily. I -- you know,
9 I'm not totally familiar with what the 7E7 is doing
10 right now. I know they're looking, obviously, at state
11 of art and they probably have CVRs and FDRs that can
12 capture thousands of parameters, so.

13 But -- but it doesn't necessarily slow it
14 down. TSO is a way, especially for the manufacturers,
15 to streamline certification and get their products out
16 the door. But if you don't have that, we -- we still
17 have processes internally where we can work through
18 issue papers. We can basically have an issue paper
19 that says if you meet these aspects of ED-112, then we
20 can streamline that through new certification without
21 necessarily having the TSO in front of us.

22 That manufacturer would then be a supplier to
23 the type certificate holder, versus a stand-alone TSO
24 supplier.

25 MR. GROSSI: Okay. Thank you. That's all I

1 have.

2 CHAIRMAN CARMODY: I understand there may be
3 some questions from the Technical Panel for Mr. Fazio,
4 and I would ask that you --

5 MR. GROSSI: Oh, I'm sorry.

6 CHAIRMAN CARMODY: That's fine. I think it's
7 easier to finish with the FAA witnesses, and then we'll
8 go around.

9 MR. GROSSI: All right.

10 CHAIRMAN CARMODY: Go ahead, please.

11 Testimony of Tony Fazio

12 MR. GROSSI: All right. Mr. Fazio, we'll now
13 turn to the rulemaking process.

14 When was the last flight recorder rules --
15 when were they issued?

16 MR. FAZIO: The last recorder rules were in
17 1997. There have been amendments -- some technical
18 amendments, that sort of thing.

19 MR. GROSSI: Right. What are the -- what are
20 the major milestones for the rulemaking process? I
21 believe we have a slide that --

22 MR. FAZIO: Sure. If you'll put up Exhibit
23 20, I'll walk you through the various steps that we
24 use.

25 The primary step is, first, is there a need

1 for the rulemaking and where does it come from. When
2 we look at the rulemaking process, clearly the number
3 one driver of FAA rules are legislatively mandated. We
4 estimate about 30 percent of our rules come directly
5 from Congress, either to issue an NPRM or a final rule.

6 To go to the pecking order, NTSB
7 recommendations are a high driver of our rules. Also,
8 harmonization, new technologies, that sort of thing,
9 they would be the drivers.

10 Once we decide -- clearly, with legislative
11 requirements we have no decision. We do it. It's by
12 law. NTSB recommendation or new technology; the
13 program office will drive that decision. They will put
14 together a statement as to the need for the rule and
15 why we need to proceed with that rule.

16 We have -- because there are so many demands
17 on a limited number of resources that we have in the
18 FAA, we have a rulemaking council which then makes a
19 determination as to whether we should proceed and
20 provide resources to that particular rule or proposal.

21 Then the rule -- once we make that decision,
22 the rule is drafted in-house. And I should probably
23 also say that there are numerous substeps to each of
24 these. As you can imagine, the rulemaking process is
25 very laborious, as you might say.

1 Drafting the rule occurs within the FAA. We
2 bring a team together of economists, program technical
3 experts, legal staff, and technical writers. They'll
4 draft the rule.

5 Once that rule is essentially finished within
6 the FAA or receives administrator approval, then if it
7 is a significant rule, that rule has to be coordinated
8 through the department, the office of the Secretary of
9 the Department of Transportation, and then ultimately
10 OMB.

11 The rule goes out for comment. The comment
12 period can last as short as 30 days, as long as, in
13 some cases, six months. Our average is roughly 90
14 days, three months.

15 Once that comment period closes, then we have
16 to make a decision, do we go to a final rule. And a
17 lot of deliberation occurs within the FAA to decide
18 whether indeed we will go. A lot of that will be based
19 on the comments received from the public.

20 And then, essentially at that point, the
21 process repeats itself again.

22 MR. GROSSI: Okay. As -- one of the
23 possibilities in the rulemaking process is an ARAC
24 committee. Do you -- what are the possibilities of, as
25 you understand the rulemaking, or the issues today on

1 image recorders that there may be an ARAC formed?

2 MR. FAZIO: I am unaware of any advisory
3 committee that's been contemplated for recorders or
4 video enhancements. We have two -- just for the
5 record, we have two possibilities within the FAA. We
6 have the ARAC, as you mentioned, which is under the
7 Federal Advisory Committee, but we also have special
8 legislative authority to assemble a group of experts
9 outside the Federal Aviation -- Federal Advisory
10 Committee Act, which gives us a lot more flexibility.

11 But right now, we have no -- no committee
12 underway.

13 MR. GROSSI: Going back to the first step
14 there in the initial FAA decision made for rulemaking,
15 who -- what individuals or what bodies within the FAA
16 actually inform that decision or make that decision?

17 MR. FAZIO: It depends what we're talking
18 about. In the case of recorders, that would be within
19 the associate administrator for regulation and
20 certification. Decisions would be made using input
21 from the Aircraft Certification and the Flight
22 Standards Organization, and I imagine in the case of
23 the recorders, that would go all the way up to the
24 administrator.

25 MR. GROSSI: How does the -- how would the

1 prioritization of the rulemaking -- could you amplify
2 on that a little bit? What factors come into play
3 there?

4 MR. FAZIO: Well, basically, it's on the
5 driver, what's the requirement to get the rule out.
6 Number one priority would be, clearly, the legislative
7 mandates. Those rules would get first priority.

8 But we, on average, are working on 45 to 50
9 high-priority rules at any one given time. A priority
10 for us is those that have received resources, legal,
11 technical, economic, and writing. So once a decision's
12 made to go, we go with it.

13 MR. GROSSI: I guess, then, the follow-on
14 question to that, who decides on the allocation of
15 those resources? Where is that decision made?

16 MR. FAZIO: As I said, the decision will be
17 made -- each program office has to develop what's
18 called a rulemaking project record, which delineates
19 why they need the rule they need. If it's an NTSB
20 recommendation, that will be stated. The decision will
21 be made, yes, we're ready to go with rulemaking. We'll
22 assign the resources at that point.

23 MR. GROSSI: In this -- in the image recorder
24 area, what specific rules do you anticipate would be
25 affected? The 121 --

1 MR. FAZIO: Oh, I see. What parts --

2 MR. GROSSI: What parts. Sorry. Yeah.

3 MR. FAZIO: Okay. I think historically we
4 have -- clearly, Part 23, 21, 121, the operating rules,
5 and 135, most likely. That's traditionally been the
6 way we've implemented recorder rules.

7 MR. GROSSI: This is a new recorder type, an
8 image recorder, which is new and never been around
9 before. Would you anticipate Part 23 and Part 25 would
10 be affected also?

11 MR. FAZIO: I think that's -- a lot depends.
12 There's various -- if you're going to apply it simply
13 to new designs, then it would apply to the
14 certification rules. If it's going to be a retrofit
15 rule, it would apply to the operating rules. So I
16 can't tell you, you know, which direction we would take
17 at this point.

18 MR. GROSSI: As you understand it, there are
19 NTSB recommendations on state of the art in image
20 recorders. Do you -- can you anticipate any -- any
21 road blocks in the rulemaking effort?

22 MR. FAZIO: Road blocks per se, I mean, every
23 rule that we promulgate has to go through a rigorous
24 analysis, regulatory analysis, both economics and other
25 requirements that are imposed on us by OMB and the

1 Department of Transportation.

2 So clearly, we would have to be concerned
3 about cost and what kind of benefits we would receive
4 by implementing that rule.

5 MR. GROSSI: Okay. Are there any flight
6 recorder rulemaking efforts currently underway?

7 MR. FAZIO: We have two underway currently,
8 both as a result of NTSB recommendations. First are
9 enhancements to our 737 recorder rules, specifically
10 addressing 737 aircraft, and then we also have another
11 -- an NPRM. That would be a final rule that has
12 already gone out for comment. We received comments and
13 revised that.

14 And the -- the second rule is -- again,
15 addresses comments or recommendations that we received
16 from NTSB requiring improvements to the recorder rules.

17 I should just say, both are at the Department
18 of Transportation for executive review.

19 MR. GROSSI: Okay. What would be the -- the
20 impact, say, on the -- on the movement of those rules
21 if -- if the decision were made to incorporate the
22 image recorder into that rulemaking process?

23 MR. FAZIO: Are you saying would we consider
24 putting these --

25 MR. GROSSI: Yes.

1 MR. FAZIO: -- your recommendations into
2 these rules?

3 MR. GROSSI: Right.

4 MR. FAZIO: I would highly recommend against
5 doing that because that would just slow down the
6 process and wouldn't permit us to get the value of the
7 rules that we currently have underway.

8 MR. GROSSI: All right. Just a couple more
9 follow-up questions. How will the proceedings of this
10 hearing be used in -- in defining the -- making the
11 initial decision for rulemaking or defining the
12 prioritization of any subsequent rulemaking?

13 MR. FAZIO: I would see it as another data
14 point for the decision. I'm sure the technical experts
15 would look at some of the testimony and possibly use
16 that.

17 MR. GROSSI: I'll offer the same question
18 that I gave to Mr. Hempe in relation to the 7E7. Would
19 you anticipate that the rulemaking could be expedited
20 to accommodate a new aircraft type certification like
21 the 7E7? Is that possible?

22 MR. FAZIO: I don't know where they are in
23 the certification. I don't follow that closely. But I
24 can tell you, on average, it takes us anywhere from
25 three to five years to get a final rule out. So I

1 don't know where we are with the certification, so I
2 think I would be hard-pressed.

3 MR. GROSSI: Okay. You mentioned earlier the
4 harmonization with ICAO and JAA and the new
5 organization, EASA. How -- how much importance is
6 actually placed on that harmonization? Does that
7 outweigh, say, an NTSB recommendation?

8 MR. FAZIO: I don't think one outweighs the
9 other. I think a lot of it depends on available
10 resources at the time. The harmonization rules tend to
11 be not significant for the most part, so they're easier
12 to get done, because there tends to be a consensus
13 involved there. Most of the changes have been
14 discussed in the ARAC process, so we have both
15 government and industry participating collaboratively.
16 So it makes getting those rules out much easier for
17 us.

18 MR. GROSSI: Okay. That's my final question
19 I have on that. I'll turn it over to Deborah Bruce,
20 who will follow up with some cost benefit questions.

21 MR. FAZIO: Okay.

22 DR. BRUCE: I realize that the benefit cost
23 study work is one component of rulemaking. Do you
24 always have to do it?

25 MR. FAZIO: We have to do it for any

1 significant rule, yes.

2 DR. BRUCE: And it's fair to say that an
3 image recorder would fall into that category?

4 MR. FAZIO: Yes, it would.

5 DR. BRUCE: Some of this I realize I'm
6 wanting to know some particulars about the benefit cost
7 process for an image recorder, a process that you're
8 not in yet, so I don't want you to feel like I'm --

9 MR. FAZIO: Okay.

10 DR. BRUCE: -- picking at details you don't
11 have. But just to sort of put some framework around
12 how that might go is my goal.

13 We do have five classes of -- of image
14 recorders in ED-112. Would you see that the benefit
15 cost structure might evaluate those differently?

16 MR. FAZIO: I think as part of the rulemaking
17 process, assuming we're going to go to a rulemaking, we
18 would look at various alternatives. So if it were
19 possible to adopt two of the three or two of the five
20 or that sort of thing, we would cost out various
21 elements of those recommendations.

22 DR. BRUCE: So -- I'm sorry.

23 MR. FAZIO: Because we are required to look
24 at alternatives, so that would be one possibility.

25 DR. BRUCE: And that requirement is from the

1 executive order that sort of guides you through the
2 benefit cost process?

3 MR. FAZIO: That's correct. OMB has very,
4 very specific requirements that we have to follow, the
5 primary one being that there has to be a reasoned
6 determination that the benefits outweigh the costs.

7 DR. BRUCE: What other internal documents --
8 we've just been referring to EO 12866 and I think
9 there's another more recent one that tweaked it a
10 little bit. But what other internal FAA documents
11 provide you guidance on benefit cost work?

12 MR. FAZIO: Our Office of Policy and Planning
13 has specific guidelines for the economist to follow.
14 Also, the department has some requirements that we have
15 to follow administratively, legally. My office -- my
16 office tends to have all the technical writers. We
17 have very specific processes that we have to follow for
18 getting the rule out.

19 DR. BRUCE: Given this sort of three- to
20 five-year process of rulemaking, can you map out to me
21 where the benefit cost work fits in along that
22 timeline?

23 MR. FAZIO: Is your question where -- when
24 would we receive the benefits --

25 DR. BRUCE: When do you start and when do you

1 finish, yeah.

2 MR. FAZIO: Okay. When we initiate drafting
3 of the NPRM, in most cases the team will come up with
4 the best scenario and they'll determine when the
5 implementation date would be. And then the cost would
6 then -- and the benefits would then be associated with
7 that -- that time frame.

8 So, for example, if the rule were to be
9 published in 2005 but not go into effect until 2008,
10 the analysis would then start from 2005 onward, usually
11 for about a 10-year, 12-year period.

12 DR. BRUCE: And the work that your office and
13 APO is putting into developing the benefit cost
14 analysis, when does that start?

15 MR. FAZIO: They are part of the team right
16 from conception. We use a team concept. We find that
17 that tends to work a little better, by having everyone
18 involved, including legal resource. That way, everyone
19 can deliberate. That creates other issues for us, of
20 course, team dynamics, but we find that that works,
21 especially for a very difficult rule.

22 DR. BRUCE: I want to go back into APO's
23 work. There is an Aviation Rulemaking Cost Committee
24 associated with that office, and they've developed a
25 fairly recent report. It's a March '04 report called

1 the Economic Values for FAA Investment and Regulatory
2 Decisions.

3 And in that, there's a whole chapter devoted
4 to aviation accident investigation costs. Those are --
5 not to put you on the spot to characterize that
6 chapter, but they're fairly specific -- they're fairly
7 narrow cost parameters: lives saved from accidents and
8 some attempt to estimate the broader investigative
9 costs for government and public agencies and public
10 industries that are involved in the investigations.

11 Would you see that the benefit cost work on
12 image recorders could be captured -- the benefit side
13 of that could be captured with those two aspects of
14 benefits?

15 MR. FAZIO: They would be -- I don't know how
16 far that advisory committee actually went into
17 discussing benefits. I think their primary mission was
18 to look at the costs and come up with specific values
19 and that sort of thing. So I really don't know how
20 that would affect that.

21 DR. BRUCE: Do you think it's harder to
22 capture the costs or the benefits?

23 MR. FAZIO: It's clearly much harder to come
24 up with the benefits.

25 DR. BRUCE: I agree.

1 Historically, the benefits for flight
2 recorders have not been limited to valuation of lives
3 saved, which is one of the two elements of that
4 chapter. For example, the preamble to the '97 rule for
5 digital flight data recorders discusses, and I'm
6 quoting,

7 "Inherent nonmeasurable benefits that evolved
8 from increasing the volume of detailed
9 accident and incident information from which
10 the aviation industry as a whole can draw
11 upon."

12 It also states that the FAA is not able to
13 quantify precisely the likely benefits that ultimately
14 -- a more global valuation of benefits would be used
15 for image recorders?

16 MR. FAZIO: Well, I don't know about image
17 recorders, but I think in general we are moving towards
18 attempting to assess the benefits of our actions. One
19 of the -- you mentioned 12866, the executive order.
20 The executive order that was published earlier this
21 year, A4, talks about looking at various alternatives
22 and then doing a rank order. So we're now given a
23 little bit more flexibility as to, if adopting a
24 particular rule would eliminate a specific accident in
25 the future, we could take a broad range of estimates of

1 what that would be.

2 So I think we have a little bit more
3 flexibility in doing that.

4 DR. BRUCE: One other point along the line of
5 benefits. We spoke yesterday about completing
6 accidents by developing probable cause statements. I
7 think, from the Board's point of view, there's a
8 recognition that those can be sometimes more precise
9 than others. And the more information that we have
10 from an accident investigation, the more we have a
11 likelihood of making precise probable cause statements
12 that lead into precise recommendations that lead into
13 more directly affecting the safety benefits we want
14 both for our purposes and yours.

15 I'm sort of headed toward a question of
16 asking, is there any way to value that capability of
17 making more precise probable causes?

18 MR. FAZIO: What we do now is we'll make a
19 statement. If the information received by adopting a
20 recorder rule, for example, would prevent a future
21 accident, then we'll quantify that future accident.
22 It's a big if statement.

23 I think that one of the problems we have with
24 recorders is it doesn't solve the first accident, it
25 solves the second accident. But we can make that

1 statement, and we have made that statement for the two
2 rules that I referred to earlier.

3 The other thing we can do is precisely what
4 was done with the '97 rule. We can discuss in non-
5 quantitative ways the benefits of these rules both to
6 the government and to the public.

7 DR. BRUCE: And my last sort of benefits
8 question, it's typical that you do add in some benefit
9 measure of the value of shorter investigations. I
10 think those are actually contained in the -- the guide
11 developed by APO. Do you agree?

12 MR. FAZIO: I'm not familiar with that, but
13 clearly, yes, we could -- after the events we've gone
14 through the last several years with accidents, we know
15 that the sooner we get out the word of the probable
16 cause, the better for all of us.

17 DR. BRUCE: I, like you, focused my questions
18 on the benefit side, but I'll try a couple of cost
19 questions.

20 You had expected the -- you have to develop
21 alternatives, but within alternatives you would develop
22 some sort of recognition of the different levels of
23 image recorders or the different levels of operators?

24 MR. FAZIO: I'm not sure what you mean by
25 different levels of recorders, but different levels of

1 operators, yes. We'd have to assess -- under the
2 executive order and, actually, the Regulatory
3 Flexibility Act, we'd have to assess the impacts to
4 small business. So if we were to apply this rule to,
5 say, 135 operators, there's a number of small business
6 operators there, and we would have to clearly look at
7 many different alternatives for those operators.

8 DR. BRUCE: Under the Regulatory Flexibility
9 Act, there's a term called significant economic impact.
10 Is that defined? How do you determine that?

11 MR. FAZIO: It is defined. Unfortunately, I
12 can't tell you that off the top of my head. I can get
13 back to you. But there is -- it has to be a certain
14 percentage of the number of businesses in that
15 category.

16 DR. BRUCE: I see. So there is a specific
17 definition applied to that?

18 MR. FAZIO: Yes, there is.

19 DR. BRUCE: In the '97 rule, the small
20 business entity that was addressed by that rule, which
21 would be the air taxi operators, the final rule used a
22 cost of \$4,900 in '95 then year dollars as what the
23 cost would be to air taxi operators. Is a number like
24 that of any use to you as you head into a new
25 rulemaking process?

1 MR. FAZIO: Probably not. I mean, it's a
2 different technology that we're talking about here. I
3 don't know. I wasn't here yesterday when the costs
4 were discussed.

5 So what our economists would do is, they
6 would look at the cost of the actual equipment, down
7 time associated with installing that aircraft, loss of
8 revenues. Those are some of the values that this
9 advisory committee referred to earlier are coming up
10 for us.

11 DR. BRUCE: The details of both the benefit
12 measures and the cost measures, are any of that
13 contained in the rulemaking project record? I mean,
14 how does that get from the technical staff to the
15 rulemaking council for policy decisions, timing
16 decisions, and then into the rulemaking products?

17 MR. FAZIO: In an ideal situation, the
18 program office would be working with the economists as
19 part of what we call the rulemaking project record, and
20 defining probably as specifically as they can without
21 physically actually putting the document together, the
22 regulatory impact analysis, coming up with a fairly
23 good estimate as to cost.

24 That way, the -- the policymaker can see that
25 and say, okay, do we want to go forward with these

1 costs or these benefits associated with those costs.
2 So that helps make the decision-makers' decision much
3 easier.

4 DR. BRUCE: Madam Chairman, thank you. That
5 concludes me.

6 CHAIRMAN CARMODY: Thank you.

7 Any more questions from the Technical Panel?

8 (No response)

9 CHAIRMAN CARMODY: We'll move to the parties,
10 then, and we'll start here and end up with the FAA
11 last, since they're your witnesses.

12 Ms. Rosser, any questions for the panel?

13 MS. ROSSER: Yes, thank you.

14 Starting with Mr. Hempe, one of the issues
15 that's come up particularly with regard to the 135 and
16 Part 91 fleet of aircraft and historical installations
17 of recording devices where they are required today,
18 when the FDR requirements came out, there was a great
19 deal of difficulty in some aircraft finding room to
20 install the device.

21 Are you looking at issues such as that as you
22 move forward, especially in light of the fact that we
23 are dealing with smaller and smaller aircraft and size
24 is a major issue?

25 MR. HEMPE: I think that's a good point. We

1 haven't to date necessarily specifically focused on
2 different models and how to attack that.

3 One of the things we have done, though, is --
4 and we kind of learned this lessons with hardened doors
5 -- was, you know, if we know there's like a handful of
6 STCers that are mainly in this business, is to try to
7 help streamline them in terms of a certification
8 procedure so that they can come up with, say, a model
9 working list. So that they can just work with us in
10 terms of what would be the differences, for example, in
11 a Piper versus a Cessna versus a De Havilland. And
12 then we try to streamline instruction -- installation
13 instructions, working with those three different groups
14 of airplanes.

15 So we have tried to do internal things, but
16 externally, with imaging recording and even some of the
17 rules that Tony talked about that are in deliberation
18 today, we have not necessarily focused in that area.

19 MS. ROSSER: Would you say that -- you
20 mentioned how a Piper would be different from a Cessna
21 -- that in the general aviation, 91, 135 fleet, there
22 is such a high degree of customization and some of the
23 aircraft are getting so much older, that there could
24 even be difficulties not between Piper and Cessna but
25 between Cessna and Cessna?

1 MR. HEMPE: Absolutely. It's aircraft to
2 aircraft, especially in general aviation, and you know,
3 that -- that does affect the cost, at least from an
4 aspect of some of the other areas that we've looked at,
5 not necessarily recorders but TCAS, GPS, and other
6 areas.

7 So sometimes, for example in the GPS area, we
8 try to work with manufacturers to try to create
9 templates of how they can approach installation and try
10 to streamline and standardize on, you know, with
11 avionics bay racks and where acceptable installations
12 would be achievable without going through the full STC
13 program. But we haven't necessarily focused that with
14 recorders today.

15 MS. ROSSER: We've had some comparisons drawn
16 between the installations of CVRs, installations of
17 FDRs, and how long those processes may have taken. And
18 our information shows that a lot of those installations
19 in 135 aircraft were completed with the field approval
20 process, 337s. And that is a process that for various
21 reasons is being utilized less and less and going more
22 toward the STC process.

23 Would you say that the STC process -- if you
24 had to do a customized installation, the templates
25 didn't work for you -- is a more expensive or lengthy

1 process than having in the past been able to do
2 something with 337?

3 MR. HEMPE: That has always been a very
4 blurry point in terms of what can you do under that
5 process versus STC. But really, what you're talking
6 about is, are you actually doing a major change in type
7 design. And I think for the initial installations we
8 would probably leverage the idea that you would have to
9 go through the supplemental type certification program.

10 Part of that has to do with, you know, it's
11 not just about the TSO box but about installation as
12 well, interference, structural mounting, EMI, setting
13 up a maintenance program. Part of, I think, the effort
14 would have to be in terms of actually modifying the
15 maintenance AC around how do you maintain these
16 recorders based on some of the ED-112 instructions.

17 So it -- there needs to be a very
18 comprehensive approach to, actually, the approval from
19 a rulemaking point of view, not just the TSO box. And
20 I think that's kind of the holistic stuff that we're
21 still talking about internally.

22 MS. ROSSER: We've heard quite a bit on
23 costs, and there was some concern expressed yesterday
24 in the questioning that the cost that we were hearing,
25 3- to 5- in one case, 10,000 in another, was the --

1 here's a box. Not even necessarily a box with a
2 camera, but here's the box and here's -- this is how
3 much you have to pay to get it off the table.

4 Is it your experience that those costs can
5 rise dramatically when installation kits are required,
6 the wiring harnesses, and then also factoring in the
7 aircraft down time that is necessary and the
8 installation cost itself?

9 MR. HEMPE: I personally believe so, and I --
10 you know, I'll defer that to Tony, maybe. But I think
11 in -- in the -- in some of the rules that we have now
12 with the 737 and the flight data improvements rule --
13 you know, what we basically do in our team environment
14 that Tony talked about was, the APO person, the
15 economist, works very closely with industry. So, you
16 know, they have repair station contacts, STC contact
17 people, industry contact people. And so they try to
18 itemize the costs from all those vantage points.

19 So I think, you know, from that vantage
20 point, our experience says that it certainly is more
21 than just the box itself.

22 MS. ROSSER: And just one final question. If
23 an STC were to be necessary and it was something that
24 was not a repair station, say, getting an STC for an
25 installation over a broad range of a particular

1 aircraft, and the operator themselves or the owner of
2 the aircraft had to get their own STC, can you give any
3 kind of an estimate on the length of time for that type
4 of a process, and also just an average or a range of
5 costs to obtain an STC?

6 MR. HEMPE: Yeah, I really don't have any
7 numbers on -- on that either way. My personal
8 experience has been with the field offices that most of
9 the time issues have been driven by, really, the
10 applicant. We have a very good internal working in
11 terms of certification program plans that we lay out
12 with applicants in terms of timelines. Usually, the
13 timelines are driven by the applicant and we can
14 support those. We've looked at that, for example, with
15 the reduced vertical separation minimums that we're
16 dealing with, which is going to be installed in quite a
17 bit of airplanes.

18 So we don't have specific timelines or
19 guidelines. You know, it could be two months or it
20 could be a year, depending on what kind of technical
21 capability they have, whether they're working under an
22 organizational delegation or they're hiring DERs off
23 the street that, you know, may have to come up to speed
24 on the issue.

25 So it could vary across the board, and I

1 think that's one of the things our economists do do.
2 They talk to some of the people from an organizational
3 point of view that do this business, get their cost,
4 but then average that or normalize that to, you know,
5 an individual comes in and applies and doesn't
6 necessarily have the same capability.

7 MS. ROSSER: Thank you, Mr. Hempe.

8 Mr. Fazio, one of the issues we have, and I
9 know you have faced this as an agency, is a substantial
10 lack of data specifically related to Part 135 and Part
11 91 aircraft. And, is it among the benefits when your
12 analysis comes to the point of examining alternatives
13 -- does the FAA consider the benefit of pursuing
14 rulemaking separately in the type of an instance. For
15 example, in 121 rulemaking, you had some clear benefits
16 and alternatives and it supported installation of
17 recorders in 121. Part 135 could impede the progress
18 there, and Part 91, as you mentioned, you had some
19 ongoing rulemakings, and adding image recording to that
20 would delay those rules and delay the benefits of those
21 rules.

22 Would that be something the FAA would
23 consider, either a change in the type of equipment
24 required or a different compliance schedule or
25 different standards for retrofits versus new

1 installations, that type of thing?

2 MR. FAZIO: Yes, we have experience in both
3 directions, where we have not applied certain
4 provisions of rules to smaller operators, for example,
5 or we've discussed it, we've seen them, and we've gone
6 ahead and done it anyway. So, yes, we -- that's part
7 of our alternative analysis that we do.

8 MS. ROSSER: In the case of '99 operations
9 and 135 operations with -- not specific to turbine
10 aircraft, necessarily, but there are roughly 2800 135
11 certificate holders out there currently. We're looking
12 at a population of 18,000 aircraft, and the FAA is
13 aware that the majority of those aircraft operations
14 are by small businesses.

15 Does the FAA -- while it's easy to identify
16 135 small businesses, how does the FAA, or does the
17 FAA, attempt to identify small businesses that are not
18 aviation businesses but are aircraft owners and
19 operators under Part 91 who use the aircraft in the
20 furtherance of their business, and does the FAA include
21 those types of businesses in their small business
22 analysis?

23 MR. FAZIO: We try to. Whether the analysis
24 is going to be as accurate we like remains to be seen.
25 That's where we'll go out and specifically request

1 comments on those particular operators and hope that we
2 get the information that we need.

3 MS. ROSSER: Can you give us a little more
4 information on what some of the obstacles are for the
5 FAA in identifying costs in the 135 industry and in 91
6 as well?

7 MR. FAZIO: Costs associated with just 135?

8 MS. ROSSER: In doing a rulemaking such as
9 identifying what the actual cost to the operators would
10 be.

11 MR. FAZIO: Well, I think some of the issues
12 you raised with Dave earlier, you know. Can you
13 physically place the equipment in the aircraft, for
14 example; what kind of down time would you have
15 associated with doing that. There are a number of
16 things we look at, and we like to think we do a very
17 thorough job. That remains to be seen, once we issue
18 the rule and we get a number of comments.

19 But then, the beauty of the U.S. system in
20 particular is that you do afford the public the
21 opportunity to comment, and if we've gotten it wrong,
22 we will then reassess our decision and make any changes
23 necessary for a final rule if we go to a final rule.

24 MS. ROSSER: When you're analyzing benefits,
25 is there emphasis placed on certain benefits over

1 others? More specifically, if there is a direct
2 benefit to the operator versus an indirect benefit, is
3 more weight given to one versus the other?

4 And just to give you an example, in the case
5 of the image recorders, an operator could see a direct
6 benefit of those recorders if they were permitted to
7 use that to observe their crews and evaluate them and
8 ensure they're complying with standard operating
9 procedures. However, it would be a likely result of
10 any such rulemaking that the pilot representative
11 groups would oppose such use, leaving it hard to
12 identify a direct benefit to the aircraft owner or
13 operator.

14 Are those types of issues considered? Are
15 they weighted, or all benefits equal merit?

16 MR. FAZIO: They're all equal in the
17 deliberation side of the house. On the quantitative
18 side, clearly, the number of accidents you can save or
19 avoid clearly provides you the greatest benefit.

20 I don't know if I answered your question.

21 MS. ROSSER: That's fine. No further
22 questions. Thank you both.

23 CHAIRMAN CARMODY: Air Transport Association.
24 Mr. Barimo, any questions for the witnesses?

25 MR. BARIMO: Yes, actually, one.

1 First of all, accidents are -- are very few
2 and far between with specifically large aircraft.
3 That's a testament to a lot of you here today.

4 Tony, specifically for you, you mentioned
5 that imaging recorders would not prevent the next
6 accident but the following one. And then, just a few
7 minutes ago, we -- we heard you say that that is really
8 the biggest benefit in your analysis.

9 So, for imaging, is -- is it really the next
10 accident or is it the next accident where we couldn't
11 have solved it using FDR or CVR technology? And that
12 it's really not the next one, it may be the tenth one
13 or the twentieth one, and how do you -- how do you make
14 that determination?

15 MR. FAZIO: I don't think we actually make
16 that determination. We just say if an accident can be
17 saved or avoided by the use of this equipment, whatever
18 it is, whether it's recorder or something else, then
19 the benefit of that would be.

20 It becomes, as you know, very -- when you
21 don't have the number of accidents, we don't have
22 statistical analysis to tell you what the risk is going
23 to be. We try to use risk analysis wherever we can.
24 That becomes a little bit more difficult with
25 recorders. But when we have a specific safety

1 analysis, we can use risk analysis to help us in that.

2 MR. BARIMO: Thank you. That's all.

3 MR. LOTTERER: Thank you.

4 I think I'll start with Mr. Fazio first on
5 cost benefit analysis. We had some comments from --
6 from Dr. Bruce on trying to quantify in terms of the
7 benefit, and there were -- there were comments in
8 various rulemaking activities, in particular the latest
9 flight data recorder rule, in terms of you cannot
10 quantify.

11 But don't you -- for significant rulemaking,
12 don't you have to quantify at least some of the
13 benefits in dollars and cents under the -- under the
14 Administrative Procedures Act?

15 MR. FAZIO: Well, under the Executive Order
16 12866, yes, we do. We try wherever we can to quantify
17 benefits of any of our actions, but I think the point I
18 was suggesting is that, in those cases, we can also
19 refer to non-quantifiable benefits, and we have done
20 that in a number of our rules.

21 MR. LOTTERER: Okay. So that, the non-
22 quantifiable benefits would certainly be applicable in
23 terms of describing additional benefits that cannot be
24 -- but that you do have to at least quantify one of the
25 benefits in the benefits analysis.

1 We within the, let's say, industry has often
2 criticized the FAA in what we call double count. That
3 is, creating rules that refer to the same accidents and
4 in effect counting them twice or more times.

5 The particular rules that have been cited in
6 our discussions here in the last two days, they would,
7 for the benefit of this -- when you develop the benefit
8 analysis portion of a rule that would -- that would
9 accomplish the NTSB recommendations, particularly for
10 aircraft that have flight data recorders, we have a
11 situation where we do have this so-called double count.

12 That is, in the earliest flight data recorder -- the
13 latest one, which really was implemented about the year
14 2000, the analysis was based upon avoiding an accident
15 within the next 20 years, a 1.4 accident within the
16 next 20 years.

17 And also, as I said in examples, particularly
18 like in the Swissair case, where we -- we had -- well,
19 of course, the insulation blankets. There are just, of
20 course, numerous ADs on that, as well as a 121
21 rulemaking activity on that -- that particular thing.

22 So we have examples of where -- where we use
23 in terms of I say criticize the FAA analysis on cost
24 benefit analysis. We use this double count issue
25 frequently.

1 Do you think that we are justified in using
2 that criticism of your process?

3 MR. FAZIO: I'll just say we're aware of your
4 criticism. It's been brought to our attention from the
5 reviewers at OMB. But I think we've been successful --
6 we're very conscious of not double counting. So I
7 think we've been fairly successful with not doing that.
8 I know we have differences of opinion with the
9 industry at times, but it's something we're aware of
10 and we pay particular attention to.

11 MR. LOTTERER: Well, you know, in -- we --
12 for two days, we've been discussing the value of video
13 recorders. I mean, I am to admit that there is
14 certainly value of adding additional information, but I
15 see the real difficulty in what it is we're trying to
16 do here in terms of, can it be cost justified.

17 And this particular rule that was in '97 and
18 implemented about 2000, it referred to the flight data
19 recorder having additional benefits to the operator in
20 terms of FOQA. That clearly was a benefit with the
21 latest rule.

22 But in this particular activity, I mean,
23 we've heard a lot of testimony with respect to the
24 airlines' use of visual recorders. And while -- while
25 we've had testimony describing the benefits of

1 training, clearly there is -- there is not going to be
2 any airline use of the video recorders for, quote,
3 "training purposes" or analysis of behavior of pilots
4 and so forth within the airline industry. And I -- I
5 don't think that any airline would care to go that
6 route.

7 So in terms of the benefits, what -- if --
8 what benefits do you see can be quantified if -- if
9 you're going to pay observance to this double count
10 issue with respect to video recorders?

11 MR. FAZIO: I don't know how I can answer
12 that. It's hard for me to speculate without looking at
13 what proposal we're looking at. So I'd rather not
14 comment on that.

15 MR. LOTTERER: Okay. Let me address some,
16 then, just to Mr. Hempe.

17 We've -- we've had discussion yesterday with
18 respect to video recorders, and the particular document
19 that has been worked up by this group clearly makes the
20 statement that they should not be used as a substitute
21 for flight data recorders and video and audio
22 recorders.

23 If -- do you agree with that assessment?

24 MR. HEMPE: I mean, I think from an FAA point
25 of view, that's still a deliberative thing that we're

1 having discussions internally with based on NTSB
2 recommendations. So, you know, to me, that's more of a
3 statement in ED-112 than it is a performance
4 requirement, and it's a judgmental thing. So I don't
5 think, really, there's an agency position or I have a
6 position on that.

7 MR. LOTTERER: Okay. In terms of -- we've
8 also had a lot of discussion on human performance
9 versus the replication of the instrument panel. I
10 think the reference to the video recorder acting as a
11 substitute for the instrument panel was -- clearly
12 would have more subjective data in the view of an
13 instrument panel versus the actual data taken from an
14 instrument panel, as the flight data recorders now
15 provide.

16 Has -- has there been any assessment in your
17 analysis thus far in terms of, should the value of
18 these particular video recorders, should they be --
19 should they be directed toward trying to improve safety
20 in human performance or should they be used as a, let's
21 say, another alternative to providing information that
22 the flight data recorder now provides?

23 MR. HEMPE: Again, I think that's a
24 deliberative discussion that has to take place. I
25 think we've heard several different views on that. So

1 it's interesting because ED-112 talks about the
2 performance of what's required to be recorded, but you
3 know, it is -- it is an interesting discussion to say
4 how far do you go. Are you focusing on the human
5 aspects of -- of -- for imaging, or are you focusing on
6 the parametrics, where you don't have an FDR.

7 And to me, that all gets into the more
8 specifics of what do -- what are we really looking for,
9 especially for those 18,000 airplanes out there that
10 don't have anything today. What part of it do you want
11 to focus on.

12 Quite frankly, that might drive the number of
13 cameras, which might drive the size of the recorder,
14 the cost of the recorder, and I think that kind of gets
15 into what Tony was talking about in terms of
16 alternatives, looking at alternatives based on what is
17 really needed for those aircraft that don't have
18 anything today if there is a given direction to go
19 mandate something.

20 MR. LOTTERER: Okay. Thank you. No further
21 questions.

22 CHAIRMAN CARMODY: Thank you.

23 Allied Pilots Association, Mr. David?

24 MR. DAVID: Thank you, ma'am.

25 Mr. Hempe, I have a question. In developing

1 the cockpit image recording TSO, would that TSO specify
2 the field of view, specifically stipulations including
3 -- excluding the crew's head and shoulders?

4 MR. HEMPE: I don't think so. I don't think
5 it would necessarily get into that. I think it -- it
6 -- I think if we had a rule, I think the rule might
7 get into those specifics, but I'm not sure whether the
8 TSO itself would. I think the TSO would drive whatever
9 your camera requirements are based on the classes. The
10 recorder would have to be built -- be able to be built
11 to them. But whether that's actually focusing on the
12 pilot or not focusing on the pilot and where those
13 requirements come from, I think, is a separate issue.

14 MR. DAVID: Thank you, sir.

15 Mr. Fazio, do you envision that being in the
16 rule specifically? Can you say?

17 MR. FAZIO: I've not heard anything to that
18 regard, so it'd be hard to say. But I agree with Dave.
19 Something like that would have to be in the rule.

20 MR. DAVID: I see.

21 MR. FAZIO: Whether you'd want it or not, I
22 don't know.

23 MR. DAVID: We obviously wouldn't want it.

24 If a rule does come out, Mr. Fazio, do you
25 think that, if U.S. aircraft are required to have a

1 cockpit image recorder, would that require foreign
2 aircraft flying onto U.S. soil to have an image
3 recorder also?

4 MR. FAZIO: If it -- only -- it would
5 probably only apply to 129 U.S. registered aircraft.
6 That's -- that's probably the only way. We would -- in
7 this case I'm sure, because of the costs associated
8 with it, we would work with our European allies and
9 EASA to see if they would want to harmonize or not.

10 MR. DAVID: Yes, sir.

11 MR. FAZIO: We try to do that with virtually
12 all of our rules.

13 MR. DAVID: Sure. Are you familiar, sir,
14 with the FOQA rule on cost benefit analysis?

15 MR. FAZIO: I don't believe there was a full-
16 scale cost benefit analysis with that, if I recall.
17 That was legislatively mandated and it's a voluntary
18 program, so I don't believe there was what we would
19 consider a full-scale cost benefit analysis.

20 MR. DAVID: Okay. Thank you.

21 CHAIRMAN CARMODY: Captain Fenwick with ALPA.

22 CAPTAIN FENWICK: Mr. Hempe, with respect to
23 the TSO on image recorders which the FAA is currently
24 developing, is it typical that a TSO is initiated prior
25 to any actual rulemaking requiring the installation of

1 a given device?

2 MR. HEMPE: Many times we have done that, and
3 it's put out there for voluntary use. So that's --
4 that's typical. That can happen, yes.

5 CAPTAIN FENWICK: Thank you.

6 And a couple of rulemaking questions for Mr.
7 Fazio.

8 When the administration considers the Board's
9 image recorder recommendations, will you be viewing
10 these proposals in isolation or will they be evaluated
11 with respect to other safety equipment or programs
12 which the FAA could feasibly mandate? And I think of
13 TCAS, ground prox devices, FOQA programs, and so on.

14 MR. FAZIO: There would be that element, yes,
15 but probably more importantly, we would evaluate that
16 proposal with other rulemakings that we have in place,
17 because we would want to be, you know, concerned about
18 the total impacts to the industry and the public.

19 CAPTAIN FENWICK: Thank you.

20 And in terms of quantification of potential
21 benefits, is it your understanding that the CAST
22 process has already quantified the number of accidents
23 that some of these other safety devices could prevent?

24 MR. FAZIO: I'm not personally involved in
25 the CAST, but I understand that's something that they

1 are looking at, yes.

2 CAPTAIN FENWICK: Thank you.

3 CHAIRMAN CARMODY: All right. And finally,
4 the FAA, Mr. Wallace?

5 MR. WALLACE: No questions.

6 CHAIRMAN CARMODY: No questions.

7 All right. We'll move to the Board of
8 Inquiry. I'll start with Dr. Ellingstad.

9 DR. ELLINGSTAD: Thank you. I have a number
10 of questions here, first for Mr. Hempe.

11 Let me, first of all, try to understand the
12 two TSOs that are in works now that you intend to get
13 out for comment by the end of 2005. Am I correct in
14 recalling from my notes here, one was a revision of
15 C123A, the CVR --

16 MR. HEMPE: Yes, that's correct.

17 DR. ELLINGSTAD: -- rule?

18 Okay. And the other was combi recorders?

19 MR. HEMPE: It would be a combination
20 recorder. That would be a new TSO. So it would have a
21 new TSO number.

22 DR. ELLINGSTAD: Okay. Is -- does that
23 particular TSO development also involve the recorder
24 independent power supply, or RIPS, or is that a
25 separate thing? I had --

1 MR. HEMPE: Yeah, I --

2 DR. ELLINGSTAD: -- heard the other day that
3 there was action with respect to a RIPS TSO.

4 MR. HEMPE: I believe there is. I -- I'd
5 have to take that, but I believe there is a RIPS TSO
6 activity, and I think that's probably one of the
7 deviations from ED-112, is that we would -- instead of
8 that being part of the recorder itself, that would be a
9 separate TSO and a separate approval.

10 DR. ELLINGSTAD: Okay. And then, in each of
11 these cases, am I correct in assuming that there is --
12 essentially, the construct of the TSO would in large
13 part be a reference to ED-112, or the appropriate
14 sections of ED-112?

15 MR. HEMPE: That's correct.

16 DR. ELLINGSTAD: Okay. And the -- the
17 typical process for development of a TSO you had
18 indicated was three years?

19 MR. HEMPE: Not necessarily. We've gotten
20 TSOs out much sooner than three years. I think the
21 typical construct is one of, obviously, getting a
22 technical spec, whether it's RTCA, EUROCAE, or
23 whatever, evaluating that technical spec internally,
24 running it through legal, putting it out for the
25 "Federal Register," getting comments from industry and

1 the public and other governmental agencies, and then
2 publishing it with the disposition.

3 Typically, I've seen three years historically
4 for recorders. This one I think we're shooting for a
5 little quicker for three years, maybe a year and a half
6 to two years.

7 DR. ELLINGSTAD: Okay. With respect to that
8 process, how much of -- of what you would expect in
9 terms of these particular TSOs or -- or harking back to
10 the last ones that you did with 123 and 124, how much
11 of that involves an FAA-conducted technical review of
12 the specifications as opposed to the more legalistic
13 review, if we can refer to it that way?

14 MR. HEMPE: I think most of the emphasis is
15 around the technical part of it and not the legal part.
16 I would say three to six months internally.

17 DR. ELLINGSTAD: Okay. We have as Exhibits
18 9-A and 9-B, for example, the -- the CVR and FDR rules
19 or TSOs that currently exist. And granted that I'm not
20 -- I'm a non-technical reviewer of those, but it seems
21 to me that they consist in large measure of reference
22 to ED-55 and an RTCA document and then a prescription
23 of what kind of user manual that the -- that the
24 manufacturer would supply.

25 Is the technical effort that you have

1 expended basically focused on -- on reviewing the
2 goodness of the -- the reference documents, the ED-55
3 in that case, or the ED-112 now?

4 MR. HEMPE: I think -- I think the technical
5 aspect of it, although it seems simple, there are
6 deviations. I think a big issue back then was actually
7 burn requirements.

8 DR. ELLINGSTAD: Okay.

9 MR. HEMPE: You know, and I think that was
10 part of -- part of the discussion at the time. That
11 one won't be so much of an issue this time, because I
12 think ED-112 has adopted the same. But there are
13 things around like three-second delay. There are some
14 words about faithfully using the -- viewing the overall
15 cockpit area and --

16 DR. ELLINGSTAD: What sort of a staff
17 commitment to -- to developing that TSO do you have?
18 What does it take with respect to FAA resources to turn
19 ED-112 into, you know, one or more TSOs?

20 MR. HEMPE: To me, it's probably a team of
21 two people that, if you can imagine at headquarters,
22 that that's probably 25 percent of their time. And
23 their main thing, obviously, is that we have four
24 directorates, regional offices, that they do have to
25 coordinate with because they have to do the

1 implementation of these standards. And sometimes, that
2 even means developing some aspect of training through
3 an interactive video training aspect of it.

4 So they look at all pieces of that; do we
5 need this piece of it in terms of getting this TSO out.

6 If we get the TSO out too far ahead of time, where we
7 don't have the training, we don't have the advisory
8 material that we talked about -- that I talked about in
9 terms of maintenance, how -- how would you maintain
10 this, then the TSO doesn't necessarily do us any good.

11 So the team kind of not only looks at the
12 technical standard but it also looks at from a project
13 plan, a program plan, what else has to happen. So many
14 of the people that I have working on this as well are
15 working on the other 20 TSOs. So that's kind of the --
16 the balance that we try to do in terms of laying out a
17 schedule by trying to get these two TSOs out by the end
18 of '05.

19 DR. ELLINGSTAD: Okay. Did you or any of
20 your staff participate in EUROCAE Working Group 50?

21 MR. HEMPE: Yes, they did.

22 DR. ELLINGSTAD: You were personally --

23 MR. HEMPE: No. I had at least one or two --
24 I know for sure one, possibly two members --

25 DR. ELLINGSTAD: Throughout the entire --

1 MR. HEMPE: -- off and on.

2 DR. ELLINGSTAD: -- process over the six or
3 seven years?

4 MR. HEMPE: Yes.

5 DR. ELLINGSTAD: Okay. Mr. Fazio, with
6 respect to the whole process of rulemaking and the
7 business of determining how to get on your list, you
8 have -- you've indicated in the slide a number of
9 steps. It seemed to me that the surest way was to find
10 a congressional sponsor, is that correct?

11 MR. FAZIO: Well, we do follow the law, sir.

12 DR. ELLINGSTAD: Okay. The Board has
13 obviously made a number of recommendations about
14 recorders, and specifically about image recorders, over
15 the last few years, which is why we're here. And what
16 I'd like to try to get at relative to this whole
17 business of your rulemaking process is how that factors
18 into the process, how -- how the recommendations
19 themselves are considered.

20 Do you, for example, have a role in
21 developing the FAA responses to the Safety Board's
22 recommendations?

23 MR. FAZIO: Do I personally?

24 DR. ELLINGSTAD: Do you personally; does your
25 office have --

1 MR. FAZIO: No, my office does not.

2 DR. ELLINGSTAD: It does not.

3 MR. FAZIO: The responses are formulated
4 through the program office, the office in charge of
5 that particular item, and then through the office of
6 Mr. Wallace.

7 DR. ELLINGSTAD: Okay. But -- so that there
8 isn't a consultation of -- if we're asking the FAA to
9 make rules, it seems strange that they wouldn't ask
10 their rulemaking experts about the feasibility.

11 MR. FAZIO: Well, we would weigh in. They'll
12 ask us, especially for a rule that's underway, you
13 know, where -- the status of that particular rule, that
14 sort of thing.

15 DR. ELLINGSTAD: Okay. But -- but when we
16 launch off a new set of recommendations for rulemaking,
17 you would not tend to get involved in that --

18 MR. FAZIO: Not normally. I would probably
19 get involved more at the management team level, because
20 I am a director within the regulation certification
21 associate line of business. So I would get involved in
22 that -- indirectly that way.

23 DR. ELLINGSTAD: Okay. And in -- in --
24 participating in that kind of analysis and evaluation,
25 I might point out that in virtually every

1 recommendation that the Safety Board has made to the
2 FAA regarding recorders of all types -- we're talking
3 about the -- the image recorders and we're talking
4 about 737s and all of these kinds of things -- we've
5 almost universally sent over two recommendations
6 relative to any of these particular fixes that we
7 believed were important.

8 One of those sets of recommendations has been
9 addressed to newly manufactured aircraft. The other
10 recommendation will typically be addressed to retrofit,
11 recognizing that there are different cost factors that
12 are involved.

13 When you see these, is there any kind of a
14 process that the recommendations will be separately
15 considered with respect to these two kinds of
16 categories?

17 I might just add to that, typically the
18 letters that we get back don't differentiate between
19 the newly manufactured and the retrofit recommendations
20 that we've made.

21 MR. FAZIO: Well, I think it would be
22 considered as part of the alternatives when we're
23 looking at the decision whether to proceed to
24 rulemaking. Obviously, the cost would be much less if
25 it was just applied to newly produced aircraft or newly

1 designed aircraft versus a retrofit. So in that
2 respect, yes.

3 DR. ELLINGSTAD: Is there ever a
4 consideration to come back to the Safety Board and say,
5 well, we think it might not be a bad idea for newly
6 manufactured but we think it might be too expensive for
7 retrofits?

8 MR. FAZIO: I personally don't get involved
9 in that, but I know we've been doing more of that over
10 the last several years, and I would encourage that, in
11 fact.

12 DR. ELLINGSTAD: Okay. You had mentioned
13 that you have two flight recorder rulemakings that are
14 somewhere well along the way; one, the 737 rule that
15 you said is at the -- at OST right now?

16 MR. FAZIO: Both are at OST, yes.

17 DR. ELLINGSTAD: Okay. Has that -- we had
18 heard that it had gone to OMB and back. Is --

19 MR. FAZIO: I didn't bring the history with
20 me, but yes, I do believe -- I'm taxing my memory here
21 because it's been several years. It's gone back and
22 forth. I can get you that information, but I believe
23 737 had gone to OMB. It was right around the shift in
24 administrations.

25 DR. ELLINGSTAD: Okay.

1 MR. FAZIO: So we were asked to look -- they
2 were taken back.

3 DR. ELLINGSTAD: I was just trying to get a
4 sense of what -- of the likelihood that that will turn
5 into a rule.

6 MR. FAZIO: It's hard for me to venture a
7 guess. We're making every attempt to get it out.

8 DR. ELLINGSTAD: Okay. Finally, you had
9 mentioned the other one that is somewhere along the
10 same way, were improvements to recorder rules. Now, is
11 that --

12 MR. FAZIO: Right. The backup -- the
13 tentative backup --

14 DR. ELLINGSTAD: Which set does that refer
15 to? Is that the -- the so-called Swissair
16 recommendations for the --

17 MR. FAZIO: Yes.

18 DR. ELLINGSTAD: -- battery backup?

19 MR. FAZIO: Yes.

20 DR. ELLINGSTAD: And the two-hour --

21 MR. FAZIO: That's correct.

22 DR. ELLINGSTAD: Thank you.

23 CHAIRMAN CARMODY: Thank you.

24 I'm going to recognize someone else, but I
25 want to follow on with what Vern -- excuse me, what Dr.

1 Ellingstad was asking about.

2 So, Mr. Fazio, with your eight-step
3 rulemaking process, it'd be safe to say we're not --
4 haven't gotten to step one on this issue yet, is that
5 correct?

6 MR. FAZIO: For video --

7 CHAIRMAN CARMODY: For the cockpit voice --
8 video recorders.

9 MR. FAZIO: No, we haven't.

10 CHAIRMAN CARMODY: No, okay. And the
11 decisions right now are perking around the program
12 offices that are affected by this, is that fair to say?

13 MR. FAZIO: I believe so. I don't know.

14 Dave, are you aware?

15 MR. HEMPE: I mean, I think it's part of the
16 deliberative stage right now within the office. I know
17 there was a meeting recently between the FAA and NTSB
18 on kind of an idea of the roll-up of all of the
19 recommendations and how to proceed from a
20 prioritization point of view. And I know that our --
21 our office has an action to get back to our director to
22 have another meeting on that. So I think that's where
23 we are with that -- that part of it.

24 CHAIRMAN CARMODY: Is there a time frame or a
25 deadline on any of this?

1 MR. HEMPE: I believe that, you know, we're
2 rushing through that and we're trying to get an answer
3 very soon. So I would say within the month, by August,
4 we're going to have a roll-up of some follow-on
5 discussions that I think we owe the NTSB on that.

6 CHAIRMAN CARMODY: All right. Thank you.

7 Mr. Battocchi, any questions?

8 MR. BATTOCCHI: No questions.

9 CHAIRMAN CARMODY: Mr. MacIntosh?

10 MR. MacINTOSH: Yes, I had a couple of
11 questions, and they're fairly short, I think.

12 Regarding the small turbine airplanes, the
13 issue of cost benefit for the CIS versus perhaps the
14 installation of DFDRs, will that be part of a cost
15 benefit analysis? The suggestion is toward a CIS, an
16 image recorder. Do you reach out and look at the other
17 -- the other methods in the cost benefit analysis?

18 MR. HEMPE: Personally, from a program
19 office, I would say that, yes, we do, and if we can
20 show that that's a benefit, that you will gain, you
21 know, the needs of the investigator, and we can show
22 that there is a cost reduction relative to going to a
23 full FDR, what the gentleman discussed yesterday about
24 the Cadillac version versus the lower version which
25 just gives you imaging.

1 I think those need to be alternatives that we
2 would look at for any rulemaking.

3 MR. MacINTOSH: Very good. Okay.

4 Regarding some testimony we heard yesterday,
5 we were informed by the GAMA representative -- I
6 believe I could characterize it as he considered that
7 he thought no buyer would pay for an image recorder
8 without a regulation. I know you weren't here
9 yesterday for some of that testimony, but it kind of
10 led up to that, and we were talking about some costs at
11 the time.

12 That reminds me of the situation where we had
13 manufacturers delivering airplanes with ELTs and -- a
14 transport airplane with an ELT, kind of an extra thing,
15 and especially for when they're not required for
16 airplanes in the United States. And I'm referring to
17 the large transport airplanes in that case.

18 But I'd like you to think outside the box for
19 a minute about the issue of the Cessna 208. What are
20 the positive and negative aspects of an airframe
21 manufacturer getting in front of the TSO process or
22 getting in front of the rulemaking process?

23 Example. The manufacturer goes out with pre-
24 wiring or actually pre-installing a cockpit image
25 recorder not yet covered by a TSO or definitely not

1 covered by the regulation. Can the customer or the
2 manufacturer receive special considerations? Might he
3 expect some special considerations when the TSO and the
4 regulatory process, either/or, come into being?

5 Could you comment on that, the issue of the
6 vulnerabilities and the benefits of -- of leading the
7 fleet, so to speak?

8 MR. HEMPE: I think, personally, from my
9 vantage point, you know, especially from an industry
10 point of view, when there are so many unknowns in terms
11 of they don't know from an ex parte point of view what
12 we're going to, you know, ask from an NPRM and what we
13 don't.

14 I'm encouraged that I do see new manufactured
15 airplanes where they do try to get ahead of it. I
16 believe there are several projects going on right now
17 where they are seriously looking at ED-112 not only for
18 its capability with RIPS and other things but also the
19 idea of pre-wiring for cameras. So I see that because
20 they don't know what's going to happen internationally,
21 whether there might be a mandate by ICAO.

22 So I think, from a business sense -- and I
23 think you've heard this several times -- that from a
24 production versus a retrofit, it really, truly is a
25 different point of view in terms of ability to build

1 that into your design and streamline the cost.

2 So, you know, I -- my personal view is that I
3 have seen them pick up on the latest technologies with
4 new airplane designs very easily, and we can facilitate
5 that. We can easily, as I said before, adopt ED-112 to
6 a specific certification program without having a TSO,
7 and working both with the supplier and the OEM on a
8 very specific project.

9 The vulnerability of that, in my only mind,
10 is -- is that if they really are going beyond cost
11 that, you know, that they're spending extra money and
12 then nothing's mandated, and maybe even the end user
13 doesn't want to put the cameras in there. The
14 vulnerability really, in my mind, is just the extra
15 cost from a return on investment, whether that's worth
16 it or not.

17 MR. MacINTOSH: Okay. Very good answer.

18 Mr. Fazio, would you like to comment on the
19 same proposition from the drop-dead point of a
20 regulation?

21 MR. FAZIO: Well, it -- you're proposing
22 something very interesting. I don't know how we could
23 do that, whether we'd give them some incentive of some
24 sort. I think that would be something, as you said,
25 thinking out of the box. Not being familiar enough

1 with the topic, I mean, I think it's something we could
2 consider. I don't know what kind of incentive we could
3 give them from a regulatory aspect.

4 Normally, our -- our regulations are
5 compliance state-driven. So, you know, off the top of
6 my head, I can't think of how we could provide an
7 incentive for manufacturers to do this voluntarily.

8 I -- personally, I think it's a decision
9 between the customer and the manufacturer. If the
10 customer wants it, then the manufacturers will provide
11 it. If we can help facilitate that on the
12 certification side, all the better.

13 MR. HEMPE: I think, just to add to Tony's
14 comment, the one benefit obviously, though, is that if
15 we do mandate something, they're ahead of the curve.
16 So obviously, from a mandate point of view -- and if
17 they can really work it into their cost, they're ahead
18 of the curve.

19 We've actually seen that in some of the
20 initiatives with flammability and aging aircraft, where
21 they have stepped up to incorporate maintenance
22 programs and seen that as a benefit in terms of things
23 that eventually came down the pike as requirements.

24 MR. MacINTOSH: But I can envision the
25 situation where something is installed that isn't quite

1 enough and doesn't quite meet the standard that we're
2 looking for in the -- in the final act. And my
3 question -- then it's a vulnerability. Is the FAA a
4 flexible enough organization to recognize this in
5 special considerations or that kind of possible
6 consideration?

7 MR. HEMPE: Absolutely. In fact, there was a
8 case with a TSO manufacturer who ultimately got a TSO
9 where -- you know, we don't work in a vacuum. We
10 actually work with the manufacturers to say, what is
11 the technology, what are their specifications. And we
12 can easily adjust the specifications to match where
13 it's appropriate and where it makes sense.

14 The TSO, unlike rulemaking, is not as rigid,
15 and the other aspect of the TSO is the ability to ask
16 for deviations to a specification, where they can show
17 that they have an equivalent level of safety. That
18 might help facilitate, in case somebody's design is a
19 little bit different and there's a vulnerability there.

20 MR. MacINTOSH: Okay. Mr. Fazio, do you have
21 any comment about that same flexibility in the
22 regulatory area? Is that in your line of business?

23 MR. FAZIO: Absolutely, yeah. I think we'd
24 have a number of opportunities. I mean, we could do it
25 by exemption, for example, if it was something that,

1 you know, we could provide an alternative means of
2 compliance. We could write a rule that was
3 performance-based, for example. That might be a way to
4 do it, also.

5 So, yeah, I think we have a lot of
6 flexibility available to us.

7 MR. MacINTOSH: Thank you very much.

8 CHAIRMAN CARMODY: Thank you, Mr. MacIntosh.
9 Mr. Cash.

10 MR. CASH: I just have a couple questions.
11 To follow on Bob -- Bob's question to Mr. Hempe about
12 the alternative requirements, you know, if you -- if
13 you have -- do you look at a DFDR system in lieu of a
14 video recorder, and more from the cost benefit side.

15 So, Mr. Fazio, if you could -- is that being
16 considered? Would that be considered?

17 MR. FAZIO: I think that would be one of the
18 alternatives we would have to look at, clearly. What
19 we want to do is obtain the greatest maximum benefit at
20 the lowest possible cost.

21 MR. CASH: Even if it's alternative
22 technology?

23 MR. FAZIO: Even if it's alternative,
24 absolutely.

25 MR. CASH: Do you have any idea where that

1 would fall out? I know --

2 MR. FAZIO: Personally, I don't. I -- you
3 know, we'd have to look at the -- you know, get the
4 economists involved, price these things out, talk to
5 the engineers, see what's out there that we could use.
6 I mean, some of the issues that were raised earlier,
7 you know, just -- can the -- can the equipment fit in
8 the aircraft, especially some of the smaller aircraft,
9 things of that nature. But I would defer to the
10 engineers for their analysis.

11 MR. CASH: Okay. Mr. Hempe, the recorder TSO
12 that you talked about earlier, the ED-112, do you
13 consider -- or, will you consider the cameras as part
14 of the TSO and the camera control units and whatever
15 ancillary equipment was required?

16 MR. HEMPE: Right. I think at this point we
17 are not considering that. I think -- you know, I kind
18 of put it in three buckets, and I know there was an
19 exhibit -- I think it was like Exhibit 18. But it's
20 kind of like the TSO, I think, will cover -- will cover
21 the recorder. I think in terms of the cameras
22 themselves, I think that's a separate approval.

23 Whether or not we deal with that as part of a
24 TSO, I think right now the specifications vary so
25 widely, as we've heard over the past two days in terms

1 of, you know, what are you viewing, what's the clarity,
2 what's the resolution, that right now that may be have
3 to handled by specific project installation
4 requirements.

5 Same with the processor. If you have
6 multiple cameras and they need to be collated or
7 aggregated together in a processor, I think that
8 processor, too, would probably be handled separately,
9 and that's where the complication comes in with the
10 cost from an STC package. If you look at all three of
11 those together as a single bubble, the TSO only gets
12 you a certain way there.

13 MR. CASH: Is that -- it adds to the cost.
14 It adds, certainly, to the complexity of the --

15 MR. HEMPE: Certainly, especially if we heard
16 today that off-the-shelf cameras aren't necessarily --
17 meet certain classes and that there needs to be
18 additional standards. And if you actually want
19 certification such that you have an integrity and
20 reliability, I think we may have to look at additional
21 standards.

22 I think if we get more specific, I think if
23 EUROCAE or ARINC gets more specific in terms of
24 some of their activity, it may ultimately turn into a
25 TSO, and I think that's still a debate we can have

1 internally in terms of whether that makes sense from a
2 streamlined point of view.

3 MR. CASH: Is that going to delay the
4 implementation, or could it conceivably delay it?

5 MR. HEMPE: In my opinion, even the TSO, as I
6 said earlier, does not delay anything from
7 implementation. I think if -- if a large or small
8 manufacturer wanted to install the requirements of a
9 recorder, camera, and processor today through ED-112
10 and other things, that we could work directly with them
11 today. So I don't think the TSO will delay anything.
12 I think whoever those first parties are that want to do
13 that, I think we'll learn a lot from them as -- as kind
14 of a prototype.

15 MR. CASH: Okay. Just two questions, Mr.
16 Fazio.

17 You're saying three to five years is your
18 average for rulemaking, which puts it out to 2008,
19 2010, if we started today. What do you envision would
20 be a realistic implementation time frame? I mean, how
21 -- how far out are we talking?

22 MR. FAZIO: The effective date of the rule
23 itself?

24 MR. CASH: No, to actually get the boxes
25 installed in airplanes.

1 MR. FAZIO: Well, assuming the rule went out
2 in 2010, you'd have to give industry sufficient time,
3 and that would all play into the cost benefit analysis,
4 obviously.

5 MR. CASH: Historically --

6 MR. FAZIO: Historically, I believe it's been
7 three to five years, something like that, for new --
8 for retrofit and then new design. I don't recall.

9 MR. CASH: So, 2015.

10 The other thing is, does the rulemaking have
11 to wait for the TSO development? I mean, could you
12 start -- costart your clocks together and run together,
13 or do you have to wait until the TSOs --

14 MR. FAZIO: No, we don't have to wait. I
15 mean, if we decide we're going to go forward, we can go
16 forward. Obviously, we would want --

17 MR. CASH: And the TSO would run with --

18 MR. FAZIO: -- to get -- have the TSO out for
19 industry so that there is a product out there
20 available.

21 MR. HEMPE: That would help with some of the
22 cost --

23 MR. FAZIO: Right.

24 MR. HEMPE: -- estimates.

25 MR. CASH: Okay.

1 CHAIRMAN CARMODY: Well, thank you. I
2 believe those are our last two witnesses.

3 Thank you, Mr. Hempe, and thank you, Mr.
4 Fazio. You provided excellent testimony and answered a
5 lot of questions.

6 (Whereupon, the witnesses were excused.)

7 CLOSING REMARKS AND ADJOURNMENT

8 CHAIRMAN CARMODY: We're now reaching the
9 conclusion of this hearing. I would like to remind
10 everyone that the docket will remain open for new and
11 pertinent information for the next 30 days. If you
12 have any submissions, they should be sent to Dr.
13 Ellingstad, the director of Office of Research and
14 Engineering at the National Transportation Safety
15 Board.

16 The Safety Board will produce a report
17 summarizing these two days of hearing. We do not
18 anticipate any additional recommendations. However, I
19 do want to note that we plan to produce an information
20 paper for the ICAO General Assembly, which is this
21 September, and submit it.

22 Let me say to Mr. Wallace, with respect to
23 your point yesterday on the scope of our recorder
24 recommendation, we're in the process now of preparing a
25 letter to the FAA, which we'd already started on in

1 response to the FAA's letter of March. We're going to
2 clarify the issue in the letter back to you, so you
3 should be getting that soon, and we can be straight on
4 this.

5 So on behalf of the Board and -- the Board of
6 Inquiry and all of the Technical Panel, I'd like to
7 thank all the parties for your help and participation
8 and your patience; all the witnesses, those who are
9 here and those who have already left, for their
10 cooperation and their testimony.

11 I want to remind you, a transcript of the
12 hearing will be on the Safety Board's website, probably
13 in a week to 10 days. If anyone wants a copy of their
14 own of the transcript, they should get in touch with
15 the court reporter.

16 I now declare the hearing concluded. Thank
17 you.

18 (Whereupon, at 4:30 p.m., on Wednesday, July
19 28, 2004, the proceedings were concluded.)
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