

行政院及所屬各機關出國報告
(出國類別：考察)

參訪日本航空事故調查委員會報告

服務機關：行政院飛航安全委員會
出國人職稱：執行長、飛安官、調查官
姓名：戎 凱、周光燦、李寶康
出國地區：日本 東京都
出國期間：民國九十年五月二十七日至二十九日
報告日期：民國九十年六月五日

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行政院及所屬各機關出國報告提要 系統識別號
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出國計畫主辦機關：行政院飛航安全委員會
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出國人員姓名：戎 凱、周光燦、李寶康
服務機關：行政院飛航安全委員會
單位：
職稱：執行長、飛安官、調查官 電話：(02) 2547-5200

出國類別：1 考察 2 進修 3 研究 4 實習 5 其他

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報告日期：民國九十年六月五日
分類號/目

關鍵詞：日本、失事調查機關、AAIC

內容摘要：(二百至三百字)

- 一、本會為加強與國際飛安及失事調查機構之交流與合作，已與澳大利亞之運輸安全調查局 (ATSB)、加拿大之運輸安全委員會 (TSB) 及法國失事調查局 (BEA) 簽署飛安合作備忘錄。另與美國、印尼及新加坡之備忘錄亦在進行之中。由於我國與日本之民航班機往來頻繁，因此與日方失事調查機構--航空事故調查委員會 (AAIC) 之交流與合作有其必要。
- 二、目前我國與韓國間之空運雖然暫時中斷，但遲早必將復航，故亦有交流之需要。韓國新近成立失事調查單位—民航局航空安全處 (Aviation Safety Division, Civil Aviation Bureau) 其調查能量尚待建立之際，本會與之建立交流管道及合作關係亦屬必要。建議趁赴日參訪之便，就近至韓國訪問。行前接獲韓方通知，因其臨時發生重大案件，請本會暫緩訪問行程。
- 三、 擬參照與澳加法等國簽訂備忘錄模式，建立與日方有關飛安計劃合作基礎，於此行分別與其飛安及失事調查機構洽談合作事宜。

本文電子檔已上傳至出國報告資訊網

行政院及所屬各機關出國報告審核表

出國報告名稱: 參訪日本航空事故調查委員會報告

出國計畫主辦機關名稱: 行政院飛航安全委員會

出國人姓名: 戎 凱、周光燦、李寶康

職稱: 執行長、飛安官、調查官

服務單位: 行政院飛航安全委員會

出國計畫主辦機關審核意見:

- 1. 依限繳交出報告
- 2. 格式完整
- 3. 內容充實完備
- 4. 建議具參考價值
- 5. 送本機關參考或研辦
- 6. 送上級機關參考
- 7. 退回補正, 原因:
 - (1) 不符原核定出國計畫
 - (2) 以外文撰寫或僅以所蒐集外文資料為內容
 - (3) 內容空洞簡略
 - (4) 未依行政院所屬各機關出國報告規格辦理
 - (5) 未於資訊網登錄提要資料及傳送出國報告電子檔
- 8. 其他處理意見:

層轉機關審核意見:

- 同意主辦機關審核意見
 - 全部 部份 _____ (填寫審核意見編號)
- 退回補正, 原因: _____ (填寫審核意見編號)
- 其他處理意見:

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本會為加強與國際飛安及失事調查機構之交流與合作，已與澳大利亞之運輸安全調查局 (Australian Transportation Safety Bureau - ATSB)、加拿大之運輸安全委員會 (Transportation Safety Board - TSB) 及法國失事調查局 (Bureau de Enquetes Accidents - BEA) 簽署飛安合作備忘錄。另與美國、印尼及新加坡之備忘錄亦在進行之中。由於我國與日本之民航班機往來頻繁，因此與日方失事調查機構--航空事故調查委員會 (Aircraft Accident Investigation Commission - AAIC) 之交流與合作有其必要。

目前我國與韓國間之空運雖然暫時中斷，但遲早必將復航，故亦有交流之需要。韓國新近成立失事調查單位—民航局航空安全處 (Aviation Safety Division, Civil Aviation Bureau) 其調查能量尚待建立之際，本會與之建立交流管道及合作關係亦屬必要。建議趁赴日參訪之便，就近至韓國訪問。行前接獲韓方通知，因其臨時發生重大案件，請本會暫緩訪問行程。

貳、 過程

本會戒執行長率飛安官周光燦及調查官李寶康等一行三人於九十年五月二十七日下午三時抵達日本東京成田國際機場。當晚由 AAIC 代表增田正輝及宮澤義明等兩位航空事故調查官接待本會人員晚宴，席間曾非正式交換雙方專業相關資訊。

次(廿八)日上午，本會人員前往位於東京都之 AAIC 訪問。日方由該會之首席航空事故調查官渡木溫彥先生親自接待。

經簡短之寒暄後，首先由該會簡報其組織、職掌及調查案件。之後再由本會戒執行長向日方簡報本會會務。

其後，雙方針對未來在失事調查及飛安合作等議題交換意見。日方參與人員包括：

1. 首席航空事故調查官 渡木溫彥
2. 次席航空事故調查官 鈴木宣勝
3. 次席航空事故調查官 矢葦克吉
4. 航空事故調查官 有田 功
5. 航空事故調查官 高橋英昌
6. 航空事故調查官 菅野 豐

訪問行程至當日下午四時結束。

參、心得與建議

- 一、 AAIC 隸屬其國土交通省(原為運輸省，於今年元旦將國土開發建設業務併入後改名 Ministry of Land, Infrastructure and Transport)。該 AAIC 有委員五人，其中主任委員及兩位委員係專職，另兩位委員兼職。委員由國土大臣任命，任期三年。
- 二、 委員會之下設事務局 (Secretariat)，置局長 (Director-General) 一人，一級主管三人分別為：首席航空事故調查官 (Investigator-General)、研究與企劃處長 (Research & Planning Officer) 及行政處長 (Director, General Affairs Division)，其中航空事故調查部門置三位次席調查官 (Deputy Chief) 及十八位航空事故調查官，其專業背景包括：飛航操作、適航維修、飛航管制、記錄器解讀分析等。
- 三、 AAIC 每年之預算約為六千萬日元，但不包括人事費用及失事調查專案經費。另外，國土省提供其位於霞關之政府機關大廈五樓整層空間予 AAIC 永久使用。
- 四、 儘管 AAIC 共有五十五名全職人員，但在調查過程中仍然需要外部資源協助，譬如提供航太相關專業支援之國立航太實驗室 (National Aerospace Laboratory - NAL) 及提供航材損壞分析之國立金相研究所 (National Institute of Metallurgy)。任何外部資源協助均需付費。此外，亦得視調查工作需要聘請顧問協助。
- 五、 AAIC 原本僅調查航空器失事案件，但其國會已通過立法，自今年八月一日起亦將調查航空器重大意外事件。另外，將鐵路事故調查業務移交該委員會辦理，預期將擴充人力以為因應。
- 六、 日本全國共有約二千五百架航空器，其中普通航空約一千五百架，含直昇機一千架 (日本之三菱及川崎重工業公司均生產直昇機)，其他則為空運機。該國直昇機失事率偏高，每年約有十五次以上失事發生，僅本年五月份內就曾發生兩起直昇機失事案件。
- 七、 AAIC 資深調查官指出：日本民航機駕駛員對標準操作程序遵守不如其軍方駕駛員，軍方之飛安及調查專業人力遠超過民方。此外，「誤闖跑道事件」及「空中接近事件」亦不僅見，尤其後者在今年元月卅一日在靜岡縣上空兩架日航班機曾因航管失誤而發生舉行矚目之接近事件。
- 八、 失事或重大意外事件航空器之飛航記錄器通常先由警方取得，再送交 AAIC 進行解讀分析，完成之後將記錄器送交檢察官保存，但 AAIC 並不提供檢察官座艙語音記錄抄件。

- 九、失事調查報告草案完成後，AAIC 得視案情需要舉辦公聽會。原則上僅對重大失事案件（死亡人數在廿人以上）進行公聽程序。AAIC 成立至今共舉行過六次公聽會。至於非正式之聽證會則經常舉行，參加者限與案件相關人士。
- 十、AAIC 將座艙語音記錄抄件列為失事調查報告附件，但抄件中無關案情之通話比照國際慣例予以刪除。失事調查報告完成後依法對外公佈，如果該案涉及外國航空器或外籍人士則將逐譯英文版供相關人士參閱。
- 十一、日本法院可能參考 AAIC 之失事調查報告，通常法院會進行平行調查。
- 十二、據 AAIC 以往經驗，失事航空器之水下打撈費用均由航空器所有人或使用人支付。
- 十三、AAIC 調查人員之國外培訓與本會相同，以美國運輸安全委員會或英國克蘭菲爾大學為主。近年來，AAIC 亦配合其國家援外政策派出資深調查官至泰國、菲律賓、緬甸、印尼、尼泊爾及越南等國提供訓練。
- 十四、初步與日方達成以下協議：
1. 日方將本會提供之新近與法國簽署之【航空事故調查指導原則】影本提報其委員會議研議。
 2. 雙方同意於發生航空器失事案件後之通報方式，即以電傳或電子郵件通知對方。必要時，得以電話聯繫。
 3. 雙方交換失事調查報告，以民航運輸業及普通航空業之直昇機失事案為主。至於飛安資訊由於日方目前僅有日文網站，對本會參考效益有限而暫緩。
 4. 雙方同意派遣人員至對方實驗室觀摩實習，藉以提昇專業技能及累積經驗。

肆、 附錄

附錄一 日本航空事故調查委員會組織法 (Aircraft Accident Investigation Commission Establishment Law of Japan)

附錄二 日本航空事故調查運營規則 (Operating Regulations of the Aircraft Accident Investigation Commission)

附錄三 日本航空事故調查委員會簡介 (Aircraft Accident Investigation Commission, Japan)

附錄四 航空器失事調查簡介 (Overview of Aircraft Accident Investigation)

肆、附 錄

附錄一

日本航空事故調查委員會組織法

(Aircraft Accident Investigation

Commission Establishment Law of Japan)

AIRCRAFT ACCIDENT INVESTIGATION
COMMISSION ESTABLISHMENT
LAW OF JAPAN
(LAW NO. 113, OCTOBER 12, 1973)

(Purpose)

Article 1. The purpose of this Law is to establish an Aircraft Accident Investigation Commission to carry out investigations into the causes of accidents properly and promote the prevention of aircraft accidents.

(Establishment)

Article 2. The Aircraft Accident Investigation Commission (hereinafter referred to as the "Commission") shall be established in the Ministry of Transport.

(Matters taken charge of)

Article 3. The Commission shall take charge of the following matters:

- (1) Carrying out investigations into the causes of those accidents referred to as Article 76 paragraph 1 of the Civil Aeronautics Law (Law No. 231 of 1952), (hereinafter referred to as "Aircraft Accidents"), said investigations being hereinafter referred to as "Aircraft Accident Investigations";
- (2) Recommending based on the result of Aircraft Accident Investigations, measures which should be taken to prevent Aircraft Accidents;
- (3) Proposing measures which should be adopted to prevent Aircraft Accidents;
- (4) Conducting investigations and carrying out research necessary to effect the preceding three items.

(Exercise of Function)

Article 4. The chairman and each member of the Commission shall independently make a determination on Commission matters.

(Organization)

- Article 5.
1. The Commission shall be composed of a chairman and four members.
 2. Two of the members shall be part-time members.
 3. The chairman shall preside over the affairs of the Commission.

and shall represent it.

4. Should the chairman be incapacitated, a full-time member designated beforehand shall take his place.

(Appointment of the chairman and members of the Commission)

Article 6. 1. The chairman and members of the Commission shall be appointed by the Minister for Transport with the consent of both Houses of the Diet from among persons possessing scientific and impartial judgment to conduct the matters in the charge of the Commission.

2. Notwithstanding the preceding paragraph, in the event that when the term of office of the chairman or a member has expired, or a vacancy has occurred on the Commission the consent of both Houses cannot be obtained for the appointment of a new chairman or member because the Diet is in recess or the House of Representatives is dissolved, the Minister for Transport may appoint the chairman or a member from among persons possessing the qualifications provided for in the preceding paragraph.

3. In the event that the preceding paragraph has been applied, the ratification of both Houses of the Diet shall be obtained at the first session of the Diet after the appointment in question.

In the event that ratification by both Houses cannot be obtained, the Minister for Transport shall remove the chairman or member in question immediately.

4. Anyone falling into any one of the following categories may not become chairman or a member of the Commission:
 - (1) A person who is mentally incompetent or incompetent by law or any bankrupt who has not had his debts discharged in bankruptcy;
 - (2) A person who has received a sentence of a higher degree than imprisonment without penal servitude;
 - (3) Any air carrier or any entity engaged in the business of manufacture, alteration, maintenance or sale of aircraft

or its appliances, or an officer thereof, if the above is a juridical person (including any person whose actual scope of authority or control is equal to or greater than that of an officer regardless of his title), or its employee;

- (4) Any officer of any association of the enterprises mentioned in the preceding item (including any person whose actual scope of authority or control is equal to or greater than that of an officer regardless of his title), or its employee.

(Term of Office)

Article 7. 1. The term of office of the chairman and members of the Commission shall be 3 years provided, however, that the term of office of a chairman or member chosen to fill a vacancy shall be the remainder of the term of office of his predecessor.

2. The chairman and members may be re-appointed.

(Removal)

Article 8. 1. The Minister for Transport shall remove the chairman or a member from office when he comes to fall under any item of Article 6, paragraph 4.

2. The Minister for Transport, after consulting with the Commission and obtaining the consent of both Houses of the Diet, may remove the chairman or a member from office when he is acknowledged to be incapable of executing his duties on account of physical or mental disability or for malfeasance in office or conduct unbecoming his office.

(Meeting)

Article 9. 1. Meetings of the Commission shall be convened by the chairman.

2. Meetings shall not be convened and matters decided unless the chairman and more than two members are present.

3. All matters shall be decided by majority vote of those present.

In case of a tie vote, the chairman shall break the tie .

4. In applying the second paragraph above in the event that the chairman is incapacitated, the full-time member acting for the chairman pursuant to Article 5, paragraph 4 shall be regarded as the chairman.

(Duties)

Article 10. 1. The chairman and members shall not divulge to others secrets which may have come to their knowledge in the course of their duties. This also applies after they retire from their posts.

2. The chairman and members, during their terms of office, shall not be officials of political parties or other political organizations or actively participate in political activities.

3. The chairman and full-time members, during their terms of office, shall not hold any other remunerative position, engage in commerce or carry out any other business for pecuniary gain except in such cases as permitted by the Minister for Transport.

(Salary)

Article 11. The salary of the chairman and members shall be otherwise provided for by law.

(Technical Advisers)

Article 12. 1. Technical advisers may be appointed to investigate technical matters.

2. Technical advisers shall be appointed from among persons possessing learning and experience by the Minister for Transport after he has consulted with the Commission .
3. Technical advisers shall be part-time members of the Commission.

(Restriction of Business)

Article 13. 1. When the chairman, any member or any technical

adviser of the Commission is considered to be closely related to any person who may be connected to an Aircraft Accident, the Commission shall not permit him to participate in the investigation of said Aircraft Accident.

2. Such chairman or member shall not be present at meetings concerning the said Aircraft Accident Investigation.

(Secretariat)

Article 14. 1. In order to manage the affairs of the Commission, a secretariat of the Commission shall be established.

2. The personnel of the secretariat shall consist of a director--general and aircraft accident investigators, among others.
3. The director--general shall administer the secretariat in accordance with the directives of the chairman of the Commission.
4. The internal organization of the secretariat shall be established in accordance with the Ministry of Transport Ordinance.

(Aircraft Accident Investigation)

Article 15. 1. The Commission shall conduct Aircraft Accident Investigations in conformity with the provisions of the Convention on International Civil Aviation and with the Standards, Practices and Procedures adopted as Annexes thereto.

2. The Commission may, when deemed necessary for conducting Aircraft Accident Investigation, take the following actions:
 - (1) Take reports from users of the aircraft, aircraft crew, persons who have engaged in rescue service and any person involved in the Aircraft Accident (hereinafter referred to as "Person Involved");
 - (2) Go to the scene of the Aircraft Accident and any place where deemed necessary and examine any aircraft and any part thereof involved in the accident and interrogate any

person concerned therein;

- (3) Request the attendance of Persons Involved and interrogate them;
 - (4) Require the owner, holder or trustee of an aircraft or material involved in an accident to produce it and/or to take custody of same;
 - (5) Require the owner, holder or trustee of pertinent aircraft or material involved in an Aircraft Accident to preserve same, and prohibit such parties from relocating same;
 - (6) Prohibit persons from having access to the scene of an Aircraft Accident except for those on official business or otherwise sanctioned by the Commission.
3. The Commission may, when deemed necessary, cause the chairman, members or officials of the secretariat to have control over the matters provided for in each item of the preceding paragraph, and cause the technical advisers to dispose of the matters provided for in item (2) of the same paragraph.
 4. Any official who deals with matters provided for in item (2) of the second paragraph of this article in accordance with the preceding paragraph shall carry a card identifying his official status and show the same to any relevant person upon request.
 5. The authority of disposition under paragraph 2 or 3 shall not be construed as encompassing criminal investigations.

(Notification of the Occurrence of an Aircraft Accident)

Article 16. The Minister for Transport shall, in accordance with the provisions of paragraph 1 or 2 of Article 76 of the Civil Aeronautics Law, when he has received a report of an Aircraft Accident or has learned of the occurrence of an Aircraft Accident, immediately notify the Commission to that effect.

(Assistance by the Minister for Transport)

- Article 17. 1. The Commission may, when deemed necessary for conducting an Aircraft Accident Investigation, request assistance in investigating facts or collecting evidence, or other necessary assistance from the Minister for Transport.
2. The Minister for Transport may, when his assistance in investigating the facts of an Aircraft Accident under the preceding paragraph has been requested, if deemed necessary, have his officials take the actions set forth in Article 15, paragraph 2, item (2).
3. The Minister for Transport, when he has learned that an Aircraft Accident has occurred shall, in appropriate cases, immediately take such measures as investigation of facts and collection of evidence so that the Aircraft Accident Investigation Commission can commence an Aircraft Accident Investigation without difficulty.
4. The Minister for Transport may, when deemed necessary, take measures under the preceding provision to have his officials dispose of matters in accordance with each item of Article 15, paragraph 2.
5. The provisions of Article 15, paragraph 4 and 5 shall apply *mutatis mutandis* to cases where the officials dispose of matters under the second or preceding paragraph of this Article.

(Cooperation of Competent Authorities)

Article 18. The Commission may, if deemed necessary for conducting an Aircraft Accident Investigation, request the chief of the competent authority or the chief of the local public bodies concerned to submit data or information, or give other necessary cooperation:

(Hearings involving persons relevant to the Cause of an Accident or Other Persons)

Article 19. 1. The Commission shall give an opportunity to those persons related to the cause of Aircraft Accidents to express their opinion before completing an investigation.

2. The Commission may, when deemed necessary, hold hearings before completing its investigation, and seek views on the said Aircraft Accident from Persons Involved or persons of learning and experience.
3. The Commission shall hold the hearings provided for in the preceding paragraph when the air carrier is involved in an Aircraft Accident causing public concern.

(Reports)

Article 20. 1. The Commission shall prepare a report of the following items on the said Aircraft Accident upon the completion of investigation and shall submit it to the Minister for Transport and make it public:

- (1) The progress and process of the Aircraft Accident Investigation;
 - (2) The facts investigated;
 - (3) The findings of fact;
 - (4) The cause(s) or probable cause(s).
2. The opinion of any minority shall be appended to the report described in the preceding paragraph.
 3. The Commission shall, when deemed necessary before completing the investigation, report the progress and process of the Aircraft Accident Investigation to the Minister for Transport and also make it public.

(Recommendation)

Article 21. 1. The Commission may, if deemed necessary at the completion of an investigation, make recommendations on measures which should be taken to prevent Aircraft Accidents on the basis of the results of Aircraft Accident Investigations.

2. The Minister for Transport shall report to the Commission the measures which have been taken on the basis of recommendations in accordance with the preceding provision.

(Proposals)

Article 22. The Commission may, if deemed necessary, make proposals on measures which should be taken to prevent Aircraft Accidents to the Minister for Transport or the head of the competent authority.

(Delegation to Cabinet Orders)

Article 23. Apart from those matters provided for in this Law, necessary matters with respect to the Commission will be prescribed by Cabinet Ordinance.

(Prohibition of Discrimination)

Article 24. No person shall be discharged or discriminated against for obeying a request under the provisions of Article 15, paragraph 2 or 3, or Article 17, paragraph 2 or 4.

(Penal Provisions)

Article 25. Any person shall, when he comes under any one of the following items, be liable to a fine not exceeding 30,000 yen:

1. When he has made a false statement in connection with the preparation of a report under the provisions of Article 15, paragraph 2, item (1), Article 15, paragraph 3 or Article 17, paragraph 4;
2. When he has refused, obstructed or evaded an inspection under the provisions of Article 15, paragraph 2, item(2), Article 15, paragraph 3 or Article 17, paragraph 2 or 4, or when he has made a false statement in response to any question under the same provisions;
3. When he has made a false statement in response to any question under the provisions of Article 15, paragraph 2, item(3), Article 15, paragraph 3 or Article 17, paragraph 4;
4. When he has not submitted data in contravention of a demand under Article 15, paragraph 2 item(4), Article 15, paragraph 3 or Article 17, paragraph 4;
5. When he has not preserved evidence, or has removed it contrary to a determination under Article 15, paragraph 2, item(5),

Article 15, paragraph 3 or Article 17, paragraph 4.

Article 26. When a representative of a juridical person or an agent, employee, or other person in the service of a juridical person or of an individual has committed a violation as provided for by the preceding Article with respect to the business of the juridical person or individual, the said representative, agent, employee or other person shall be punished by the fine stipulated in the preceding Article. Notwithstanding the punishment imposed on the said representative, agent, employee or other person, said juridical person or individual shall be punished in like manner.

附錄二

日本航空事故調查運營規則

(Operating Regulations of the Aircraft
Accident Investigation Commission)

Operating Regulations of the Aircraft Accident Investigation Commission

Aircraft Accident Investigation Commission Notification No. 1

November 6th, 1974

Ministerial Ordinance November 25th, 1974

Amended December 5th, 1994

Ministerial Ordinance Notification No. 1

Amended December 1st, 1999

Ministerial Ordinance Notification No. 1

Aircraft Accident Investigation Commission

The "Operating Regulations of the Aircraft Accident Investigation Commission" stipulated by the Aircraft Accident Investigation Commission on November 6th, 1974 are published herein.

The Aircraft Accident Investigation Commission stipulates the following Operating Regulations of the Aircraft Accident Investigation Commission based on the provisions of Article 2 of the Ordinance for Execution of the Aircraft Accident Investigation Commission Establishment Act (Law No. 377 of 1973).

Operating Regulations of the Aircraft Accident Investigation Commission

Contents

- Chapter 1 General Provisions (Articles 1~2)
- Chapter 2 Meetings (Articles 3~6)
- Chapter 3 Aircraft Accident Investigation
 - Part 1 General Rules (Articles 7~5)
 - Part 2 Factual Investigation
(Articles 16~21)
- Chapter 4 Hearings from Persons Relevant to
the Cause of the Accident.(Articles 22~24)
- Chapter 5 Hearings
 - Part 1 Procedure for Convening Hearings
(Articles 25~31)
 - Part 2 Management of Hearings
(Articles 32~42)
- Chapter 6 Drafting of Reports etc. (Articles 43~45)
- Chapter 7 Miscellaneous Provisions (Article 46)
Supplementary Provisions

Chapter 1 General Provisions

(Definitions)

Article 1

1. In these Regulations, "aircraft accident" shall be taken to mean an aircraft accident as set forth in Article 3-1 of the Aircraft Accident Investigation Commission Establishment Act (Law No. 113 of 1973, hereinafter referred to as "the Act").
2. In these Regulations, "fatality" shall be taken to mean a fatality caused by an aircraft accident and occurring no more than 7 (seven) days after the occurrence of the said aircraft accident.
3. In these Regulations, "serious accident" shall be taken to mean an aircraft accident occurring with respect to an aircraft that is provided for use by air transportation companies for the transportation of passengers, in which the number of fatalities or missing persons is no less than 10 (ten) or in which the number of seriously injured persons (those who have been hospitalized no more than 7 (seven) days after the occurrence of an aircraft accident and who remain hospitalized for more than 48 hours; same applies in the next paragraph) is no less than 20.
4. In these regulations, "major accident" shall be taken to mean an aircraft accident in which the number of persons dead or missing is no less than 3 (three) or in which the number of seriously injured persons is no less than 6 (six), but which is not classified as a serious accident.

(Method of Public Notification)

Article 2

Matters to be publicly notified by the Aircraft Accident Investigation Commission (hereinafter referred to as "the Commission") shall be pursuant to the provisions of Article 25 and shall be posted on the notice board of the Commission as well as being made available for perusal in the Commission's Secretariat.

Chapter 2 Meeting

(Chairman)

Article 3

The chairman of the Commission shall chair meetings of the Commission (hereinafter referred to as "Meetings").

(Attendance at Meetings)

Article 4

1. The chairman shall require technical advisors or the employees of the Secretariat to attend Meetings, and shall be entitled to ask them to explain proposals or express their opinions.
2. Whenever deemed necessary the Commission shall require employees of related government organizations or persons with scientific knowledge or experience to attend meetings, and shall be entitled to ask them to express their opinions.

(Minutes)

Article 5

1. The summarized proceedings of Meetings must be recorded in the form of minutes.
2. The minutes shall consist of the following matters.
 - 1 Date, time, and place
 - 2 Names of those in attendance
 - 3 Proposals
 - 4 A summary of deliberations
 - 5 Resolutions

6 Any other matters

(Sub-Committees)

Article 6

1. The Commission shall be entitled to establish sub-committees in order to deliberate on specialist subjects with respect to aircraft accident investigation and other matters.
2. The Chairman shall nominate Commission members and technical advisors who are to belong to sub-committees.

Chapter 3 Aircraft Accident Investigation

Part 1 General Rules

(Aircraft Accident Investigation)

Article 7

Aircraft accident investigation shall help to eliminate the causes of aircraft accidents and thus prevent aircraft accidents, by ascertaining the facts of aircraft accidents through factual investigation thereof, conducting necessary analyses of the same, and elucidating the causes on the basis of the foregoing.

(Start of Aircraft Accident Investigation)

Article 8

The Commission must start investigation of an aircraft accident forthwith when it has been notified of the occurrence of the said aircraft accident by the Minister of Transport pursuant to Article 16 of the Act or when it has otherwise been discovered that an aircraft accident has occurred.

(Notifying the Occurrence of an Aircraft Accident to the state of Registry or Manufacture)

Article 9

1. The Commission shall notify the state in which the said aircraft has been registered (hereinafter referred to as "the state of Registry") or the state in which the air worthiness of the prototype of the said aircraft has been certified (hereinafter referred to as "the State of manufacture") with

a minimum of delay whenever an aircraft accident occurring in the Japanese territory corresponds to the definition of an aircraft accident as set forth in Annex 13 to the Convention on International Civil Aviation (hereinafter referred to as "the Convention") and answers to one of the following.

- (1) It involves an aircraft belonging to a Convention contracting state.
- (2) It involves an aircraft belonging to a state that is a signatory to a bilateral aviation agreement.
- (3) It involves an aircraft that has been authorized by the Minister of Transport pursuant to the provisions of Article 126-2, Article 127, Article 129, or Article 130-2 of the Civil Aeronautics Act (Law No. 231 of 1952) (excluding those given in (2)).

2. The Commission shall forward notification to the said state of registry, State of manufacture, or International Civil Aviation Organization of information with respect to the said aircraft accident as ascertained subsequent to the notification set forth in the previous paragraph. Provided, however, that this shall only apply to aircraft that exceed 2,250 kilograms in maximum airborne weight and have at least two (2) more engines.

(Nomination of Investigator-in-charge)

Article 10

When the Commission is investigating an aircraft accident, the Commission or a person nominated in advance by the Commission shall nominate of the Secretariat who will be in charge of the said aircraft accident investigation (hereinafter referred to as "Investigators"), as well as nominating one of the Investigators to responsible for the factual investigation (hereinafter referred to as "Investigator-in-charge").

(Nominations of Technical Advisors)

Article 11

When a serious accident has occurred or otherwise when deemed particularly necessary, the Commission shall determine expert matters for investigation with respect to the said aircraft accident, shall nominate persons as Technical Advisors, and shall notify the same to the Minister of Transport.

(Dispatch of Investigator-in-charge)

Article 12

In the event that an aircraft accident has occurred, the Commission shall dispatch a Investigator-in-charge and Investigators to the site. Provided, however, that this shall not apply to aircraft accidents other than major or serious accidents when the Commission deems it not to be necessary in consideration of the circumstances etc. of the said accident.

(Dispatch of Commission Chairman etc.)

Article 13

1. In the event that a serious accident has occurred or otherwise when deemed particularly necessary, the Commission shall dispatch the chairman or other members of the Commission to the site.
2. In the event that the Minister of Transport has appointed Technical Advisors pursuant to the provisions of Article 12-2 of the Act, and when deemed necessary, the Commission shall dispatch Technical Advisors to the site.

(Nomination of Accredited Representative and his or her Advisors to Participate in Aircraft Accident Investigation)

Article 14

1. With respect to aircraft accidents involving Japanese-aircraft occurring within the territory of a contracting state to the Convention or a state that is signatory to a bilateral aviation agreement, the Commission shall nominate an accredited representative to participate in the investigation of the said aircraft accident from the chairman, members of the Commission, or employees of the Secretariat.

2. The Commission or the accredited representative set forth in the preceding paragraph shall be entitled to nominate or entrust advisors in order to assist the accredited representatives as set forth in the said paragraph.

3. The provisions of paragraph 2 above shall apply mutatis mutandis in the event that an aircraft accident occurs within the territory of a contracting state to the Convention involving an aircraft (only those that exceed a maximum takeoff weight of 5,700 kilograms) of which Japan is the State of manufacture.

(Nomination or Commissioning of Members of Joint Aircraft Accident Investigation Commissions etc.)

Article 15

In the event that an aircraft accident involves the US Military Forces in Japan and is to be jointly investigated on the basis of the Agreement on Air Traffic Control (approved by the Japan-US Joint Committee, June 25th, 1952), the Commission shall nominate or entrust persons to be consultants and members of an aircraft accident joint investigation committee based on the said Agreement from the chairman, members,

technical advisors, the personnel of the Secretariat or the personnel of related government bodies.

Part 2 Factual Investigation

(Factual Investigation)

Article 16

With respect to the factual investigation set forth in Article 7, information related to the said aircraft accident shall be obtained, materials shall be collected, and the state of damage to the said aircraft shall be investigated, and wherever necessary examination and research shall be undertaken in order to verify the facts.

(On-Site Investigation)

Article 17

1. The factual investigation to be undertaken at the site of an aircraft accident by the Commission (hereinafter referred to as "On-Site Investigation") shall be carried out by the following persons.

(1) The chairman, members, technical advisors and the employees of the Secretariat who are dispatched to the site.

(2) The employees of the Ministry of Transport who give assistance pursuant to the provisions of Article 17-1 of the Act.

(3) Those employees of related government bodies who are entrusted by the Commission.

(4) Persons with scientific knowledge or experience in aircraft accident investigation who are entrusted by the Commission.

2. The chairman, members of the Commission, or Investigator-in-charge dispatched to the site shall be entitled, when deemed necessary in

undertaking the investigation, to organize an On-Site Investigation team from the persons set forth in the preceding paragraph and in Article 20.

3. The Investigator-in-charge shall oversee the said On-Site Investigation team under instruction from the chairman or members of the Commission.

4. The chairman, members of the Commission, or Investigator-in-charge shall disband the said On-Site Investigation team on completion of the On-Site Investigation.

(Announcement of On-Site Investigation)

Article 18

1. As much as possible, efforts shall be made to announce facts gathered through the On-Site Investigation.

2. The progress of the On-Site Investigation shall be announced wherever appropriate, while facts gathered through the said Investigation shall be announced upon completion of the same.

3. Announcements made by the Commission as set forth in the preceding two paragraphs shall be made by the chairman, members of the Commission, or Investigator-in-charge.

(Method of Factual Investigation, etc.)

Article 19

The method and other aspects of the factual investigation, as well as being set forth in these Regulations, shall also be determined separately by the Commission in accordance with the circumstances and other details of the aircraft accident.

(Participation in Factual Investigation by Accredited Representatives and his or her advisors)

Article 20

In the event that an aircraft accident as set forth in Article 9-1 (1) and (2) has occurred, and when the State of Registry or the State of manufacture has appointed an accredited representative and his or her advisors set forth in the same paragraph, these persons shall be entitled to participate in the factual investigation under instruction from the investigator-in-charge.

(Reports etc. from Persons Participating in Factual Investigation)

Article 21

1. Persons participating in the factual investigation must report information gathered therein promptly to the chairman, members of the Commission, or investigator-in-charge.
2. Persons participating in the factual investigation must not disclose information thus gathered unless authorized to do so by the chairman, members of the Commission, or investigator-in-charge.

Chapter 4 Hearings from Persons Relevant to the Cause of the Accident

(Persons Relevant to the Cause of the Accident)

Article 22

Persons who are deemed to be relevant to the cause of an aircraft accident as set forth in Article 19-1 of the Act are those corresponding to one of the following clauses who are deemed to be relevant to the cause of the said aircraft accident.

- (1) The crew of the said aircraft.
- (2) Persons related to the dispatch service of the said aircraft.
- (3) Persons related to the maintenance of the said aircraft or its fittings prior to departure.
- (4) Persons related to the manufacture, modification, or maintenance of the said aircraft or its fittings (excluding the maintenance set forth in the preceding clause).
- (5) Persons related to the air traffic control, information services and aircraft flight operation services, the radio and lighting facility services, airport operation, etc.
- (6) Any other related person.

(Hearings)

Article 23

1. In the event that the persons set forth in the preceding Article (hereinafter referred to as "Persons Relevant to the Cause of the Accident") are given opportunities to express their opinions as set forth in

Article 19-1 of the Act, a date shall be set and their attendance shall be sought.

2. In the event that Persons Relevant to the Cause of the Accident are unable to attend on the designated date, they shall be entitled to state their opinions in writing or verbally by the said date.

3. When Persons Relevant to the Cause of the Accident fail to attend on the designated date without good reason they shall be regarded as having had an opportunity to state their opinion.

4. In the event that Persons Relevant to the Cause of the Accident are unable to attend for reasons of illness or other unavoidable circumstances, they shall be entitled to elect a representative to attend on their behalf, subject to approval by the Commission.

Article 24

1. The hearings of opinions set forth in the preceding Article shall be chaired by the chairman, members of the Commission, or employees or the Secretariat as nominated by the Commission.

2. Hearings of opinions shall indicate to Persons Relevant to the Cause of the Accident matters that are related to such persons and shall not be open to the public.

Chapter 5 Hearings

Part 1 Procedure for Convening Hearings

(Announcement and Notification of the Convening of Hearings)

Article 25

1. When the Commission wishes to hold a hearing as set forth in Article 19-2 of the Act, it must, at least fourteen (14) days before the convening of the hearing, announce the name of the case, the time and place of the hearing, and the place for perusing draft reports as well as the place and deadline for submitting testimony applications as set forth in subsequent Articles.
2. When the hearing of opinions at a hearing does not finish within the time set forth in the preceding paragraph and the hearing needs to be continued, it shall suffice to make a verbal announcement at the hearing of the time and place of the next hearing, notwithstanding the provisions of the preceding paragraph.

(Preparation and Perusal of Draft Reports on Factual Investigations)

Article 26

1. In the event that a hearing is held as set forth in Article 19-2 of the Act, the Investigator-in-charge shall prepare a draft report on the factual investigation with respect to matters raised in the outline of aircraft accidents and in the clauses of Article 43-2.
2. Persons wishing to give testimony at a hearing shall be entitled to peruse the draft report on the factual investigation as set forth in the

preceding paragraph prior to the convening of the hearing in a location announced by the Commission.

(Applications for Testimony etc.)

Article 27

Persons wishing to give testimony at a hearing must submit a testimony application including written testimony to the Commission on or before the deadline announced pursuant to the provisions of Article 25.

Article 28

1. Testimony applications must bear the name, address, occupation, and age of the person wishing to give testimony.
2. Written testimony must bear the name of the person wishing to give testimony and the specific content of the testimony to be given.
3. Evidence materials relating to the case in question may be appended to the written testimony set forth in the preceding paragraph.

(Selection of Witnesses)

Article 29

The Commission shall examine documents etc. submitted pursuant to the provisions of the two preceding articles and, when deemed to be of use in elucidating the cause of the aircraft accident in question, shall select witnesses from the persons mentioned in the testimony applications. In this case, the testimony of persons not selected shall be used as reference in elucidating the cause.

Article 30

1. When it is deemed necessary to hear the opinions of persons connected to the case in view of its nature or persons with scientific knowledge and experience, the Commission shall be entitled to seek the attendance and stated opinions of such persons at the hearing as well as the witnesses selected pursuant to the provisions of the preceding article.
2. The provisions of Articles 26-2 and 28-2 and -3 shall apply *mutatis mutandis* in the event of the preceding paragraph.

(Changes to the Time of Convening of Hearings, etc.)

Article 31

In the event that, owing to sudden unavoidable causes, it is deemed impossible to convene the hearing on the date and time announced or notified pursuant to the provisions of Article 25, the Commission shall be entitled to change the date and time of the convening of the hearing by promptly making an announcement to this effect and notifying the persons set forth in the preceding two articles by any suitable means.

Part 2 Management of Hearings

(Principle of Openness)

Article 32

Hearings shall be open to the public. Provided, however, that in the event that a witness has requested that a hearing be closed to the public or in the event that the Commission deems it necessary, it shall be possible to make all or part of the said case closed to the public.

(Director of hearings)

Article 33

Hearings shall be directed by the chairman, a member of the Commission or an staff of the Secretariat, pursuant to nomination by the Commission.

(Limit on Testimony Time)

Article 34

The director shall be entitled to limit the time for testimony by witnesses in advance if this is deemed necessary in view of managing the course of discussion.

(Testimony)

Article 35

Testimony by witnesses must follow the contents of the written testimony. Provided, however, that this shall not apply when questions as set forth in the following article are being answered or when the permission of the chairman has been given.

(Questions)

Article 36

The chairman, members, or technical advisors of the Commission or the employees of the Secretariat shall be entitled to ask questions to the witnesses with respect to the content of written testimony.

(Interruption of Testimony, etc.)

Article 37

1. The director shall be entitled to interrupt testimony when the testimony of a witness is deemed to fall under one of the following clauses.

- (1) When it has exceeded the time instructed by the director pursuant to the provisions of Article 34.
- (2) When it markedly violates the provisions of Article 35.
- (3) When it is outside the scope of the case.

2. The director shall be entitled to remove a witness when that witness does not comply with an instruction to discontinue testimony pursuant to the provisions of the preceding paragraph.

(Reading of Written Testimony in Absentia)

Article 38

When a witness is not able to attend a hearing through illness or other unavoidable causes, testimony shall be given in absentia by reading of the written testimony by a person nominated by the director.

(Evidence, etc.)

Article 39

The director shall be entitled to request that evidence relating to the matters raised in the testimony be submitted by witnesses and to designate a date by which these should be submitted when deemed necessary.

(Records)

Article 40

1. Matters stated in testimony must be recorded in shorthand or by some other method.
2. The records set forth in the preceding paragraph must be made available for perusal upon application from the general public. Provided, however, that this shall not apply when the hearing has been closed to the public.

(Issue of Admission Tickets)

Article 41

When deemed necessary, the Commission shall issue admission tickets and shall only admit those bearing tickets into the hearing.

(Order)

Article 42

1. On entry to or departure from the venue of the hearing, or when inside the venue of the hearing, those admitted must comply with the instructions of the director or any relevant employees under the orders of the same.
2. The chairman shall be entitled to remove persons in attendance who do not comply with the instructions pursuant to the provisions of the preceding paragraph.
3. The provisions of the preceding two paragraphs shall apply mutatis mutandis to witnesses while not giving testimony.

Chapter 6 Drafting of Reports etc.

(Contents of Reports)

Article 43

1. With respect to the course of aircraft accident investigation as set forth in Article 20-1(1) and -3 of the Act, an outline of the aircraft accident and an outline of the aircraft accident investigation shall be recorded.

2. With respect to verified facts as set forth in Article 20-1(2) of the Act, the following matters concerning the said aircraft accident shall be recorded.

- (1) History of flight
- (2) Numbers of persons dead, missing, and injured
- (3) Information on damage to the aircraft (including parts)
- (4) Information on damage other than that to the aircraft
- (5) Information on the crew
- (6) Information on the aircraft
- (7) Information on meteorology
- (8) Information on navigational aids
- (9) Information on communications
- (10) Information on the airport and ground facilities
- (11) Information on flight recorders and voice recorders
- (12) Information on Accident site and Wreckage
- (13) Information on medicine
- (14) Information on fires and fire fighting
- (15) Information on searches, rescue, and evacuation etc. related to human survivors, fatalities, and injuries
- (16) Tests and research for fact findings

(17) Other necessary matters

3. With respect to the reason for verifying facts set forth in Article 20-1(3) of the Act and the cause set forth in (4) thereof, the report shall include the results of analysis leading up to verification and of tests and research to this end.

4. The content of reports on aircraft accidents other than serious or major accidents shall not necessarily be bound by the provisions of the preceding three paragraphs.

(Preparation of Reports)

Article 44

In the event that the Commission prepares a report pursuant to the provisions of Article 20-1 of the Act, it shall make concrete and detailed statements using simple expressions wherever possible in the said reports.

(Sending of Reports)

Article 45

1. In the event that the Commission has prepared a report, it shall send the said report to the contract states in question when the aircraft accident corresponds to that described in Article 9-1(1) and (2).

2. With respect to reports concerning aircraft accidents that have occurred within Japanese territory and are deemed to be of use in preventing aircraft accidents in Convention contract states, the Commission shall send summaries of the said reports to the International Civil Aviation Organization.

Chapter 7 Miscellaneous Provisions

(Detailed Regulations)

Article 46

As well as stipulating these Regulations, the Commission shall be entitled to stipulate detailed regulations with respect to matters necessary for implementing these Regulations.

Supplementary Provision

These Regulations shall be take effect from November 25, 1974.

These Regulations shall be take effect from December 5, 1994

These Regulations shall be take effect from December 1, 1999

附錄三

日本航空事故調查委員會簡介
(Aircraft Accident Investigation
Commission, Japan)

* AIRCRAFT ACCIDENT INVESTIGATION COMMISSION , JAPAN

1. HISTORY

The Aircraft Accident Investigation Commission as presently existing was established in 1974.

Before the Commission was established, Aircraft Accident investigation Division of Civil Aviation Bureau, Ministry of Transport, had been responsible for the aircraft accident investigations.

Through the experiences of some serious accidents thereafter, there arose discussions that an expert organization which has specialty in knowledge and experience on the aircraft accident investigation and is independent from the aviation authority should be established and should be responsible for civil aircraft accident investigations.

In 1973, Aircraft Accident Investigation Commission Establishment Law (Law NO. 113, 1973) was established and, on 11th January, 1974, the Commission started its work.

2. PURPOSE OF INVESTIGATION

The purpose of this Law is to establish an Aircraft Accident Investigation Commission to carry out investigations into the causes of accidents properly and promote the prevention of aircraft accidents. (Article 1. AAIC Establishment Law)

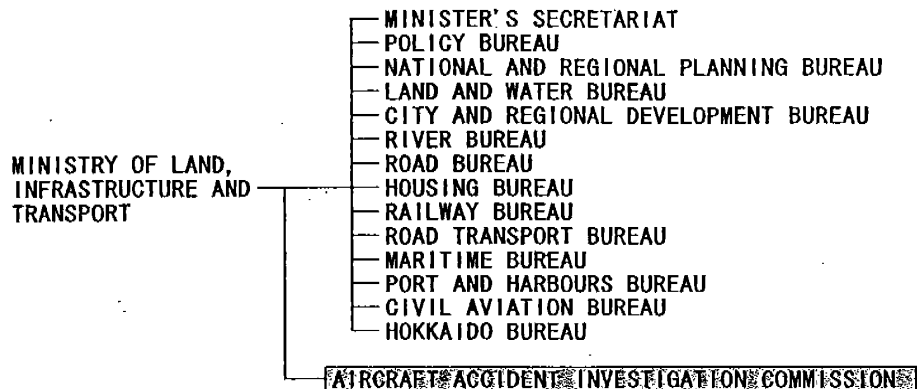
3. AIRCRAFT ACCIDENT INVESTIGATION

The Commission shall conduct Aircraft Accident Investigations in conformity with the provisions of the Convention on International Civil Aviation and with the Standards, Practices and Procedures adopted as Annexes thereto. (Article 15.1. AAIC Establishment Law)

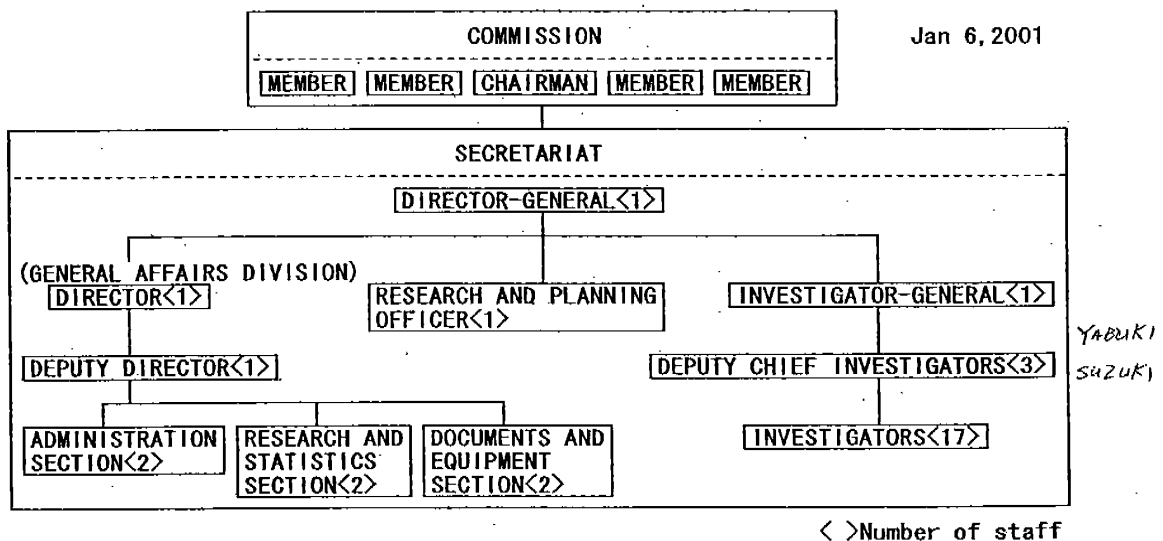
4. COMMISSION

- 1) Chairman and members are appointed by the Minister of Land, Infrastructure and Transport with consent of both Houses of the Diet.
- 2) Chairman and each member independently make a determination on Commission matters.
- 3) Members are the specialist for Aerodynamics, Structures, Control Systems, Maintenance and Operations, and Legal matters.
- 4) Term of office is three(3) years and may be reappointed.
- 5) Two of these members are the part-time members.

* ORGANIZATION OF MINISTRY OF LAND, INFRASTRUCTURE AND TRANSPORT, JAPAN



* ORGANIZATION CHART OF AIRCRAFT ACCIDENT INVESTIGATION COMMISSION



* LIST OF POSITIONS

COMMISSION		SECRETARIAT	
Chairman	J. Sato, Dr.	Director-General	k. Nakajima 中島
Member	R. Katsuno	Investigator-General	A. Wataki 渡木
Member	S. Kato	Director of the General	M. Furusawa
Member	Y. Kakimoto (part time)	Affairs Division	Y. Kunimoto
Member	Dr. K. Yamane (part time)	Research and Planning	
	<i>A/C structure</i>	Officer	

Address: 2-1-2, Kasumigaseki, Chiyoda-ku, Tokyo 100-8918, Japan
 Telephone: +81-3-5253-8814
 Facsimile: +81-3-5253-1677
 AFTN: RJTDYAYX

DECEMBER 31, 2000

NUMBER OF ACCIDENTS IN JAPAN

Year	Total	Airplane over 5,700kg	Airplane less 5,700kg	Ultra- light Plane	Heli- copter	Gyro- copter	Glider	Airship	Number of Fatali- ties	Number of Injuries
1974	49	8	15	0	17	1	8	0	12	23
1975	43	3	16	0	16	0	8	0	11	15
1976	56	9	26	0	14	0	7	0	26	31
1977	39	5	12	0	16	1	6	0	8	39
1978	39	4	10	0	18	1	7	0	17	36
1979	50	8	14	0	20	2	6	1	7	76
1980	41	5	11	0	22	0	3	0	11	25
1981	40	3	10	1	18	0	9	0	16	23
1982	36	3	16	0	9	1	7	0	38	223
1983	46	4	13	11	12	0	7	0	22	76
1984	32	4	5	6	14	1	3	0	10	38
1985	41	6	12	6	15	0	4	0	530	77
1986	52	4	12	14	15	3	4	0	22	144
1987	45	8	19	9	8	1	3	0	34	29
1988	36	5	6	7	13	2	3	1	14	22
1989	41	2	6	11	9	1	12	0	18	17
1990	48	3	11	9	16	2	7	0	44	59
1991	44	2	11	6	19	0	7	0	23	76
1992	24	3	5	5	7	0	4	0	11	14
1993	32	4	5	3	17	1	2	0	6	197
1994	30	3	5	9	14	0	2	0	277	14
1995	28	4	7	10	7	0	1	0	12	24
1996	36	8	11	5	9	0	4	0	26	205
1997	30	3	11	3	9	2	3	0	28	34
1998	36	4	14	5	6	1	7	0	22	60
1999	28	1	9	5	7	1	5	0	9	18
2000	28	1	5	5	11	1	5	0	9	25
Total	1050	117	297	130	358	22	144	2	1263	1620
Rate		10.9	28.0	12.1	33.2	2.1	13.5	0.2		

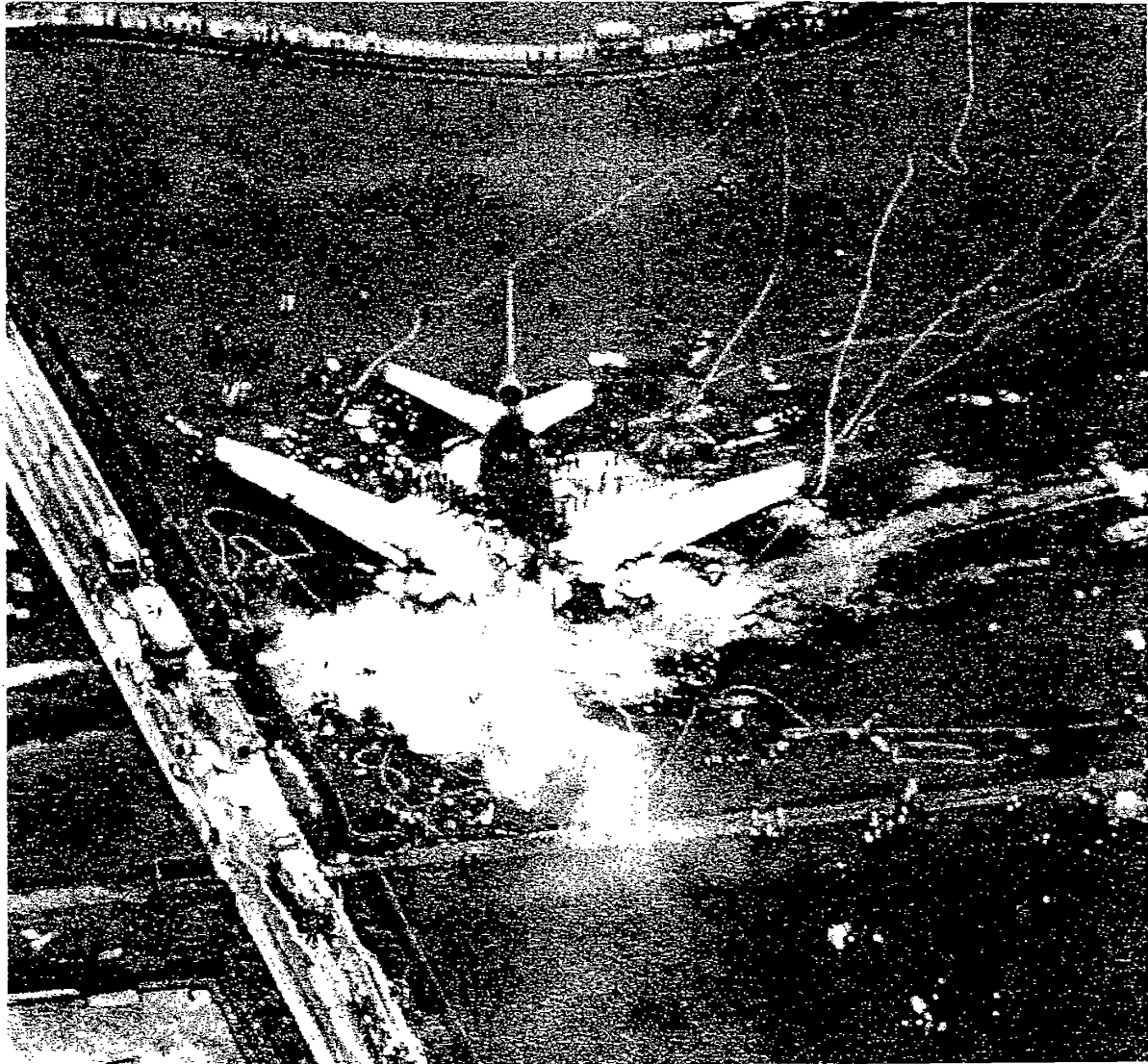
附錄四

航空器失事調查簡介

(Overview of Aircraft Accident Investigation)

Scientific Approach to Ensuring Aviation Safety

Overview of Aircraft Accident Investigation



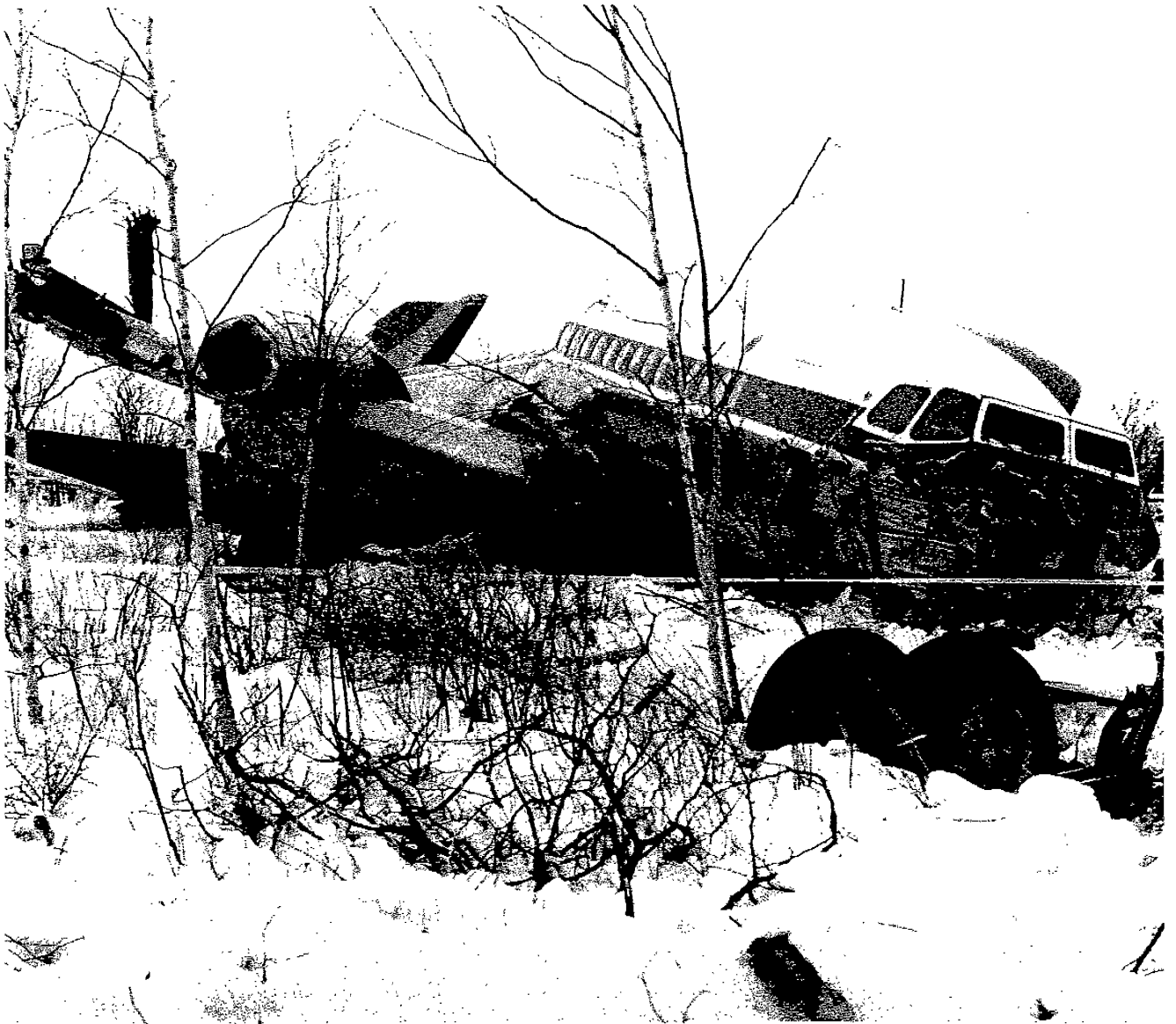
**Aircraft Accident Investigation Commission
Ministry of Land, Infrastructure and Transport JAPAN**

The mission of air transport is to ensure safety

Generally speaking, an aircraft is an extremely safe means of transportation but once an accident occurs, destruction can progress in an instant, taking numerous lives.

If an aircraft accident occurs, its cause has to be investigated to prevent the recurrence of similar accidents.

Never let an aircraft accident recur - this is the resolution of the Aircraft Accident Investigation Commission.



✈ Prevention of aircraft accidents

Mission and organization of Aircraft Accident Investigation Commission

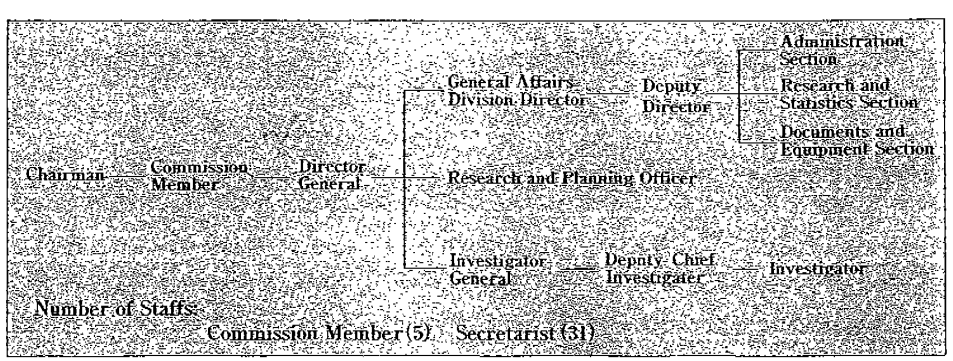
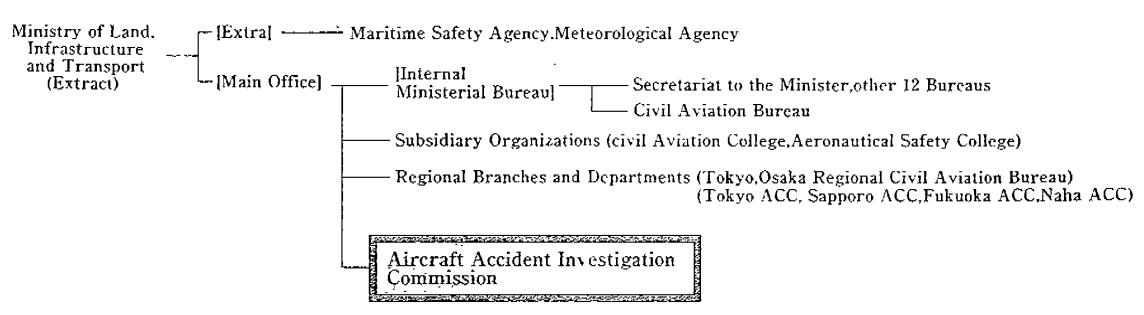
In Japan, more than 40 aircraft accidents occur in a year. The purpose of the Aircraft Accident Investigation Commission is to conduct investigations to ascertain the cause of these aircraft accidents with the aim of contributing to preventing the recurrence of such accidents.

The Commission was established on January 11, 1974 as a permanent organization of the Ministry of Transport that can respond to aircraft accidents quickly. The commission comprises a chairman and four members appointed with the consent of the Diet, and it has a secretariat under its organization.

〈The major duties of the commission are as follows〉

1. To conduct investigation to ascertain the cause of aircraft accidents
2. To make recommendations on measures that should be taken to prevent the recurrence of aircraft accidents, on the basis of the findings of the investigations.
3. To make proposals for measures to be taken for preventing the recurrence of aircraft accidents
4. To conduct the research and studies necessary to perform these duties

〈Organization chart of AAIC〉



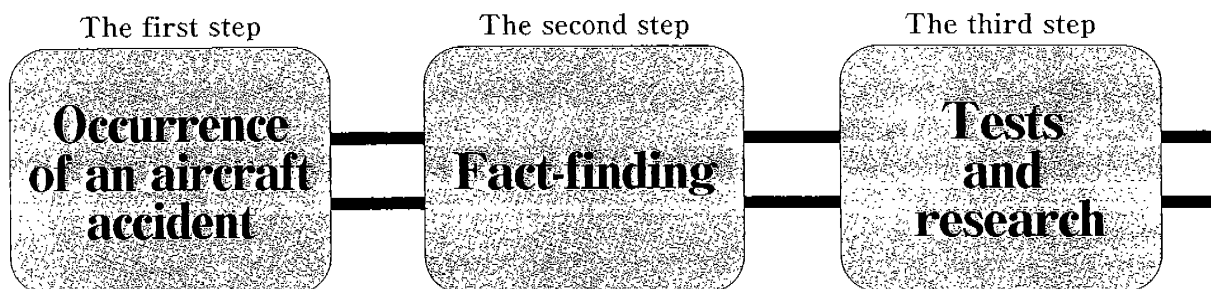
✈ Flow chart of Aircraft Accident Investigation

Investigation of aircraft accidents are carried out in accordance with the provisions of the Convention on International Civil Aviation and related regulations.

When carrying out an investigation, the Commission accurately identifies the actual condition of an aircraft accident, including its circumstances and environment, conducts necessary tests and research, and makes a comprehensive analysis of the facts found as well as the result of the tests and research to ascertain the cause of the aircraft accident.

After the investigation, the Commission compiles an aircraft accident investigation report, submits it to the Minister of Land, Infrastructure and Transport, and makes it public.

The Commission, when it is deemed to be necessary, makes the recommendations or proposals necessary for preventing the recurrence of aircraft accidents to the Minister of Land, Infrastructure and Transport.



When an aircraft accident occurs, the Commission initiates an investigation immediately.

The Commission investigates the facts regarding the aircraft accident, including the site of the accident, and collects related reference materials.

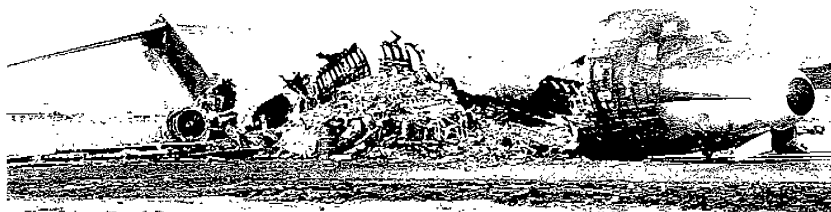
With respect to accident involving scheduled airliners and other large aircraft, the commission analyzes data obtained from the flight data recorder and other equipment.

The Commission carries out the tests and research necessary to ascertain the cause of the aircraft accident.

The Commission seeks the cooperation of testing and research organizations when necessary.

◎ Technical advisers

When an investigation is carried out, technical advisers may be appointed to undertake inquiry into the accident from a technical perspective.





○Hearings
 The Commission may seek the views and opinions of the parties concerned and persons of learning and experience by holding hearings when necessary.

○Hearings of the opinions of the persons related to the cause of the accident
 Before completing the investigation, the Commission hears the opinions of the persons related to the cause of the accident.

The fourth step

Analysis

Based on the facts identified through the investigation and the results of tests and research conducted in relation to the facts, the Commission analyzes the circumstances under which the accident occurred and determines its cause.

The fifth step

Deliberations of the Commission

The Commission seeks to ascertain the cause of the accident by deliberating in detail on the identified facts, the results of tests and research, and the results of analysis conducted on the basis of the results of tests and research.

The sixth step (1)

**Compilation of the report
 Publication**


When completing the investigation of the accident, the Commission compiles a report on the accident, submits it to Minister of Land, Infrastructure and Transport, and makes it public. In the course of investigation, the Commission reports on the progress and process of the investigation when necessary.

The sixth step (2)

Recommendations and Proposals

When completing the investigation, the Commission, when it is deemed to be necessary, makes recommendations to the Minister of Land, Infrastructure and Transport, on the measures to be taken for preventing aircraft accidents. The Commission also makes proposals for measures to be taken for preventing aircraft accidents to the Minister of Land, Infrastructure and Transport or the heads of related organizations.

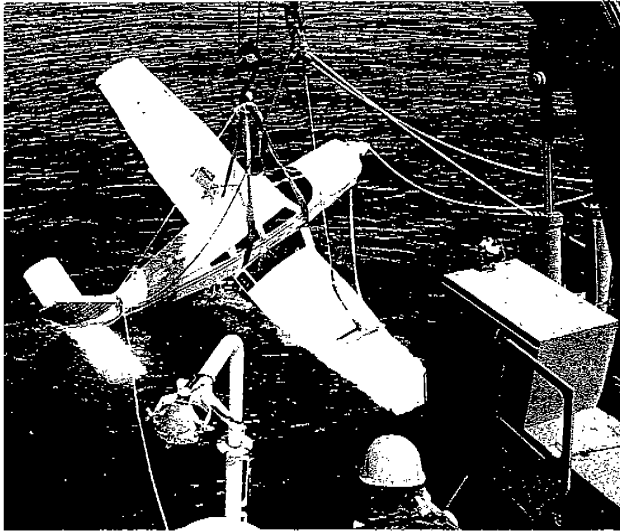


The following is an explanation of the flow of these aircraft accident investigations. 

The first step

Occurrence of an aircraft accident

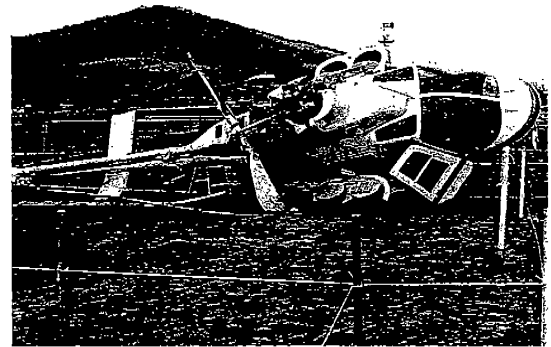
An aircraft accident may occur regardless of time and place. When an aircraft accident occurs, the commission appoints a chief investigator to take charge of the investigation. The investigation commences with the appointment of this investigator.



What is aircraft accident?

Aircraft accidents are defined in the Civil Aeronautics Law:

- The crash, collision, or fire of an aircraft
- Death of or injury to persons, damage or destruction to property caused by an aircraft
- Death or disappearance of persons on board an aircraft
- A collision with another aircraft



☛ 《Aircraft accident investigations carried out by the Commission》

The Aircraft Accident Investigation Commission investigates the following aircraft accidents:

1. An accident involving civilian aircraft of Japanese nationality that occurred in Japan
2. An accident involving civilian aircraft of foreign nationality that occurred in Japan
3. An accident involving aircraft belonging to the Self-Defense Forces relating to the civilian aircraft of Japan that occurred in Japan
4. An accident involving aircraft belonging to the US military and civilian aircraft that occurred in Japan (joint investigations with the U.S. armed forces)
5. An accident involving civilian aircraft of Japanese nationality that occurred on international waters

With respect to an accident by civilian aircraft of Japanese nationality that occur outside Japan, an investigation is carried out by the "State of Occurrence" where the accident has occurred. The Commission, however, may join the investigation in the capacity of a representative as the "State of Registry".

The Commission does not investigate accidents caused exclusively by aircraft belonging to the Self-Defense Forces of Japan or the U.S. military. These accidents are investigated by the respective organizations of the armed forces.

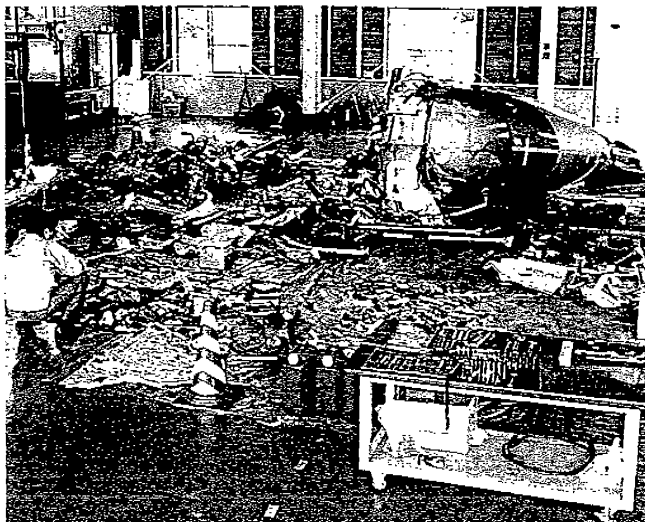
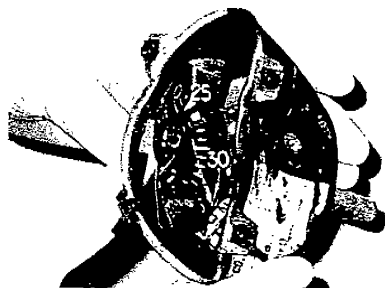
The second step

Fact-finding

The first thing to do in the investigation of an aircraft accident is to obtain an accurate understanding of the facts regarding the accident. Investigators first rush to the site of the accident and are engaged in the identification of facts, including the circumstances under which the accident occurred, the actual condition of the aircraft involved, the environment in which the accident occurred, and weather conditions. It is also important to perform search and rescue for the victims of the accident, as well as to investigate matters related to the surviving persons.

Investigators carefully examine the remains of wrecked aircraft one by one.

Although such examination requires diligence and perseverance, it is a task which is indispensable to ascertaining the cause of the accident.



Aircraft accidents often occur in locations which are difficult to approach, such as mountainous areas. It sometimes takes several hours to ascend a mountain to reach the site of the accident because of low striped bamboo that blocks the way, or investigators are sometimes troubled by snakes and striped mosquitoes during the investigation.

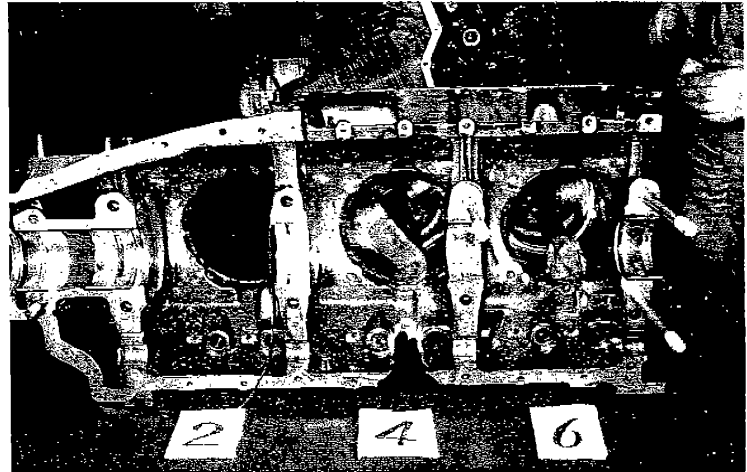
Thus, investigations on the site of the accident sometimes involve various difficulties.

The third step

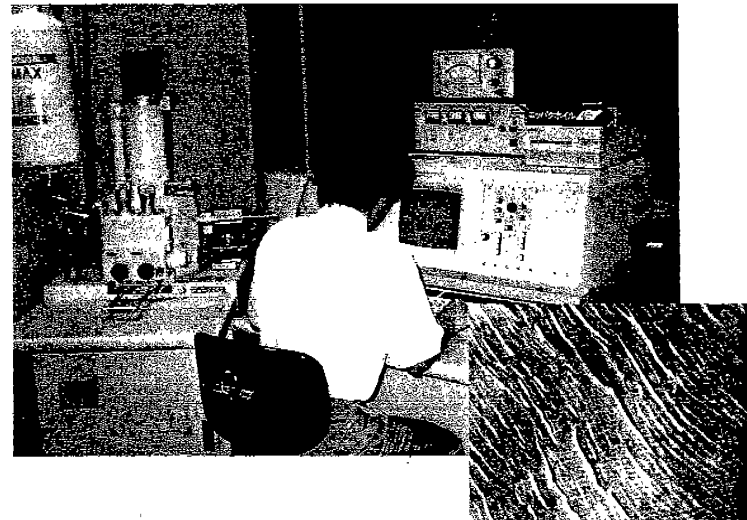
Tests and research

In addition to information and materials obtained as a result of fact-finding, investigators conduct tests and research related to such information and materials when it is deemed to be necessary to do so in order to ascertain the cause of the accident. Tests and research are conducted to identify and analyze the facts regarding the accident.

In the course of an investigation, investigators sometimes obtain testimonies such as "The engine stopped during the flight." In such cases, investigators disassemble the engine and carefully examine its components one by one to determine whether each component was functioning normally or not.



The fractured surface of metal components is examined using an electron scanning microscope and X-ray analysis equipment. Of the devices used, the electron microscope, which is capable of clearly magnifying an object up to 300,000 times by irradiating electrons in the object, enables clear observation of "striations" and other phenomena that indicate when the metal was fractured.



In some cases, the circumstances under which the accident occurred have been photographed by camera or filmed by video. These photographs and videos, which undergo digital image processing through image processing equipment, are used to determine the aircraft's speed, altitude, direction, and other conditions at the time of the accident.

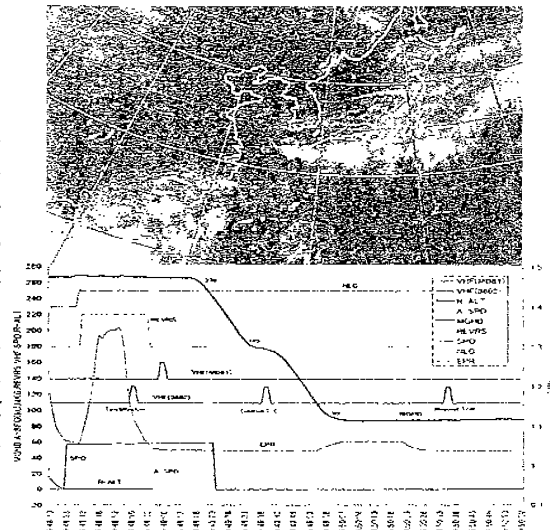
The fourth step

Analysis

The facts regarding the accident that are collected by investigators and the results of various tests and research conducted in relation to the facts are analyzed in detail. Investigators analyze the facts to determine whether these facts contributed to the occurrence of the accident. This analysis constitutes the most important part of the aircraft accident investigation report to be compiled later.

Basic analyses as to whether flight crew members had proper qualifications, whether any abnormal conditions had arisen in the aircraft, or whether weather conditions had contributed to the accident are conducted on all aircraft accidents.

In addition, investigators clarify the cause and factors of the accident by making in-depth analyses from various viewpoints concerning matters that are believed to have contributed to the occurrence of the accident.



Based on these analyses, investigators put together conclusions of investigations carried out for the accident and compile a draft report on the aircraft accident investigation to be submitted to the Commission.



Investigator's paraphernalia

Nobody knows when and where an aircraft accident may occur. Investigators always carry a bag containing their paraphernalia for investigation so that they can rush to the scene of an accident when they receive notice that an accident has occurred.

Investigator's paraphernalia include:

- Camera and films (These are the rudiments of making records)
- Cassette tape recorder (No single word in the testimony should be missed)
- Measuring instruments (Accurate records are the basics of investigation)
- Loupe (Even a small scratch must not be overlooked)
- Compass (This is used to ascertain out the flight direction of the aircraft and the configuration of the ground)
- Gyro horizon (This is often used in mountains and hills)
- Stop watch (Of course, this is used to measure time)
- Anticorrosive agents (These prevent the progress of rusting by covering the metal with a film)
- Flashlight (This is used to examine the interior of objects in detail)
- Maps and Enroute charts (These are used to check the route that the aircraft actually took)
- Work gloves and rubber gloves (These are used to handle the remains of the wrecked aircraft with care)
- Notebooks and pens (Investigators always keep these tools in their pocket)
- Investigation manuals (Investigations are carried out in accordance with world standards)
- On-the-spot inspector certificate, armband, and so forth.
- Cellular phones (Quick exchanges of information are necessary)

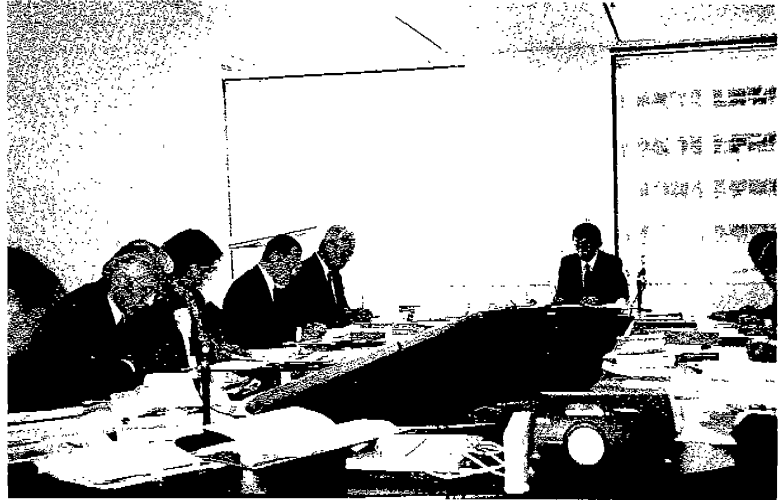
Actually, there is no special equipment in the bag. This means that investigations are supported by the experience and diligence of the investigators themselves.



The fifth step

Deliberations of the Commission

The results of investigations put together after recognizing the facts regarding the accident, conducting tests and research, and making analyses are discussed in detail at the meetings of the Commission to ascertain the cause of the accident.

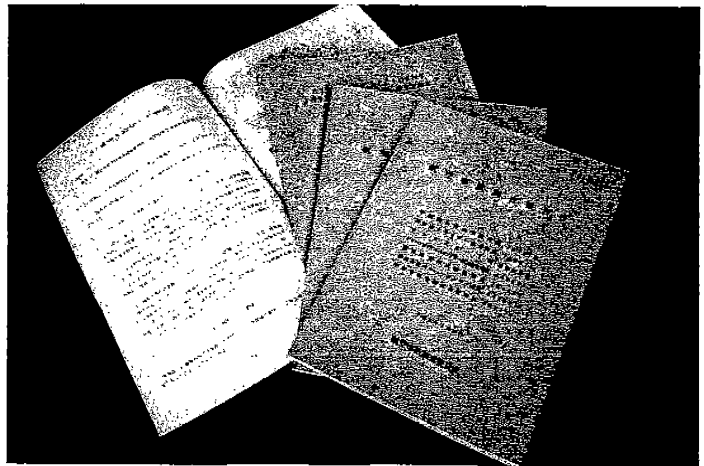


The sixth step(1)

Compilation of the report and publication

After completing the investigation of the aircraft accident, the Commission compiles an aircraft accident investigation report. This report is submitted to the Minister of Land, Infrastructure and Transport and is made available to the general public. This report describes the progress and processes of aircraft accident investigations, the identified facts, the analysis for recognizing the facts, and the cause of the accident.

The Commission makes its aircraft accident investigation report available to the general public with the aim of information those engaged in or concerned with air transport of the circumstances under which the accident occurred and the cause of the accident and thus contributing to preventing the recurrence of similar accidents.



The sixth step(2)

Recommendations and Proposals

When completing the investigation of the aircraft accident, based on the results of the investigation, the Commission, if it is deemed to be necessary, makes recommendations to the Minister of Land, Infrastructure and Transport on measures to be taken for preventing aircraft accidents. Similarly, the Commission makes proposals for measures to be taken for preventing aircraft accidents to the Minister of Land, Infrastructure and Transport and the heads of related administrative agencies. These indicate the Commission's strong intention to ensure aviation safety.

◎ Recommendations made so far

1. Recommendation on the necessity of ensuring the airworthiness of aircraft (June 19, 1987)
2. Recommendation on the necessity of ensuring the safe operation of aircraft in winter (October 28, 1988)
3. Safety recommendation to the Taiwanese Aviation Authorities (July 19, 1996)
4. Safety recommendation to the French Airworthiness Authorities (July 19, 1996)
5. Safety recommendation to the Indonesian Aviation Authorities (November 20, 1997)
6. Safety recommendation to the Federal Aviation Administration (December 17, 1999)
7. Safety recommendation to the Federal Aviation Administration (December 1, 2000)

◎ Proposals made so far

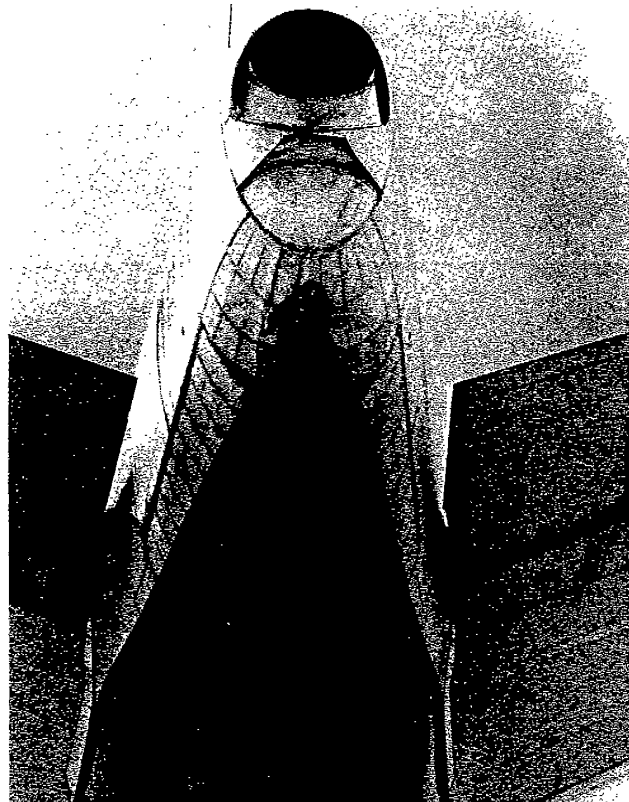
Proposal concerning safety measures for light twin-engine aircraft (October 7, 1982) and 12 other proposals



The Commission recommended that appropriate snow removal and anti-icing measures be taken according to weather conditions in order to ensure the safe operation of aircraft in winter. (See photo)

The Commission recommended that if an aircraft undergoes major repairs at places other than the factory where it was manufactured, working plan and management be performed carefully according to the circumstances and the repaired aircraft be continuously monitored by establishing specific check points.

The Commission also required airlines to consider a fail-safe system that works after the pressurized cabin structure is broken.

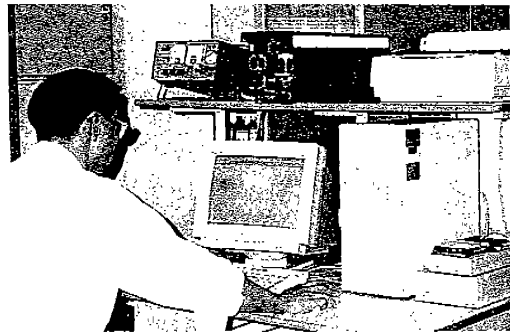


✈ Equipment used for investigation

The most advanced technology goes into an aircraft and its related facilities. Aircraft accidents that occur under these circumstances have become increasingly complicated and have also required higher-level technology for investigation year on year. Therefore, investigators have to respond to these circumstances. Various types of specialized equipment are essential to carry out these investigations. In addition to the equipment introduced in the preceding pages, major equipment used by the Commission includes:

《Flight data analysis system》

This system analyzes data that are recorded in the digital flight data recorder (DFDR*1) mounted on large aircraft which outputs data on the position of the aircraft and the status of operation of each component in the form of lists and graphs.



A DFDR is mounted on B747, B767, A300, and other types of aircraft. This records numerous flight data with time, and includes data on the flight direction, altitude, airspeed, acceleration, and engine thrust of the aircraft, as well as the operation of flaps and control wheel. YS-11, DC9, and other types of aircraft are equipped with (FDR*2), which records data on the flight direction, altitude, airspeed, and acceleration of the aircraft, as well as the status of the wireless transmitter. A combination of these flight records and CVR records enables investigators to reproduce the status of operation of the aircraft that caused the accident.



《CVR analysis system》

Voice data recorded in the cockpit voice recorder (CVR*3) are copied onto DAT tapes for transcription.

In addition, the voiceprints of pilots, as well as engine, alarm, and other sounds recorded together with human voices can be analyzed using voice analysis equipment to estimate the condition of aircraft.

A CVR is mounted on all scheduled airliners and uses endless tapes to record 30-minute voice communication inside the cockpit and with control towers and other facilities.

- *DFDR Digital Flight Data Recorder
- *FDR Flight Data Recorder
- *CVR Cockpit Voice Recorder

✈ Training for investigators

In many cases, several factors in combination cause an aircraft accident. Investigation of such accidents requires a wide range of aviation knowledge and experience in aircraft accident investigations. Investigators are required to have a wide range of knowledge and experience needed for the operation of aircraft such as flight control, airframe structure, air traffic control, communications, and electronics. They are also required to have the technical skills necessary for ascertaining the cause of aircraft accident on the basis of such knowledge and experience. For this reason, initial training is provided when investigators are appointed and subsequently, training in technical matters and other subjects is provided on a regular basis.

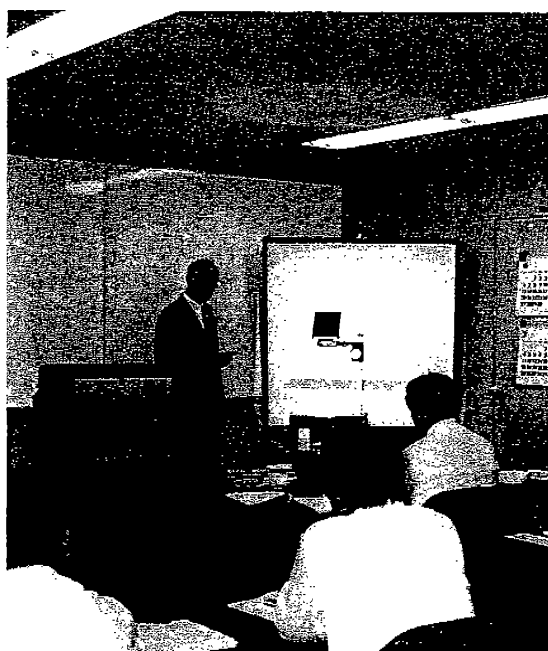
Training in technical matters includes aircraft control, airframe structure, maintenance, and operation management.

Training in technical matters is provided in the form of lectures and practical exercises as classified according to large aircraft, small aircraft, and helicopters.

In particular, highly automated aircraft called "high-tech" aircrafts have recently been introduced in large numbers.

Therefore, in addition to traditional knowledge of aircraft operation, investigators are required to have knowledge of computer hardware and software. Furthermore, professors from universities and experts are invited to give lectures to investigators so that they can learn advanced technology, meteorology, and other subjects in more detail.

Moreover, investigators are sent to American universities and government agencies each year to receive training in aircraft accident investigations.



✈ Activities for preventing aircraft accidents

Based on the results of aircraft accident investigations, the Commission widely calls for the prevention of aircraft accidents through various lectures, preparation of materials, contributions, and other activities.

At safety lecture meetings organized by companies operating aircraft and the organizations of such companies, the Commission presents specific examples of environments in which, and the circumstances under which, aircraft accidents occur, as well as the cause of aircraft accidents to pilots engaged in the operation of aircraft, maintenance engineers, and administrators.



The Commission promotes the preparation of materials concerning aircraft accidents that occurred at home and abroad, and these materials serve as the basic data for conducting research and studies to prevent aircraft accidents.



As a result of a proposal by the Commission, the Japanese Society of Air Safety Investigators (JSASI*) was established in December 1991. JSASI consists of more than 30 organizations, including domestic companies operating scheduled airliners, aerial work service companies, related associations, organizations, non-life insurance companies, trading firms, and government agencies. In addition to plenary sessions, JSASI has established subcommittees for scheduled air service and small aircraft and also organizes study meetings and opinion-exchange forums to discuss about the safety of aircraft on the basis of the results of aircraft accident investigations. Thus JSASI strives to contribute to prevent the occurrence of aircraft accidents.

* JSASI Japanese Society of Air Safety Investigators

✈ Major aircraft accidents investigated by the commission to date

Since the Aircraft Accident Investigation Commission was established, over 1,000 aircraft accidents (those investigated by the Commission) have occurred in Japan.

Major aircraft accidents are as follows:

- ❖ **Feb. 9 '82** On February 9, 1982, in its approach to the Tokyo International Airport, a Douglas DC-8 aircraft flying from Fukuoka to Tokyo as a scheduled flight crashed into the sea approximately 300 meters short of the runway. In this accident, 24 persons were killed, 95 seriously injured, and 54 slightly injured.
- ❖ **Aug. 26 '82** On August 26, 1982, a Boeing 737 aircraft flying from Nara to Ishigaki as a scheduled flight landed at the Ishigaki Airport but overran the runway. The aircraft was heavily damaged and burst into flames. In this accident, 3 persons were seriously injured and 45 slightly injured.
- ❖ **Mar. 11 '83** On March 11, 1983, in its approach to the Nakashibetsu Airport, a YS-11 aircraft flying from Okadama to Nakashibetsu as a scheduled flight crashed into thickets of trees in front of the runway. In this accident, 18 persons were seriously injured and 34 slightly injured.
- ❖ **Aug. 12 '85** On August 12, 1985, a Boeing 747 aircraft flying from Tokyo to Osaka as a scheduled flight went out of control because an abnormal condition occurred to its airframe structure. The aircraft crashed into mountains in Gunma Prefecture, was heavily damaged, and burst into flames. In this accident, 520 persons were killed and 4 seriously injured.
- ❖ **Oct. 26 '86** On October 26, 1986, when an Airbus A300 aircraft was flying from Manila to Osaka as a scheduled flight, an explosive blew up in a lavatory. Part of the aircraft was damaged and the pressure in the cabin decreased rapidly. Therefore, it made an emergency landing at the Osaka International Airport. In this accident, 8 persons were seriously injured and 101 slightly injured.
- ❖ **Sep. 27 '90** On September 27, 1990, when a Kawasaki BK117B-type helicopter used for a company's scheduled flight was flying from the Miyazaki Airport to the Nobeoka Heliport, it crashed into a slope close to the top of a mountain in Miyazaki Prefecture. In this accident, the 10 persons aboard the helicopter were killed.
- ❖ **Aug. 5 '91** On August 5, 1991, when an Aerospatiale SA365N-type helicopter used for a non-scheduled flight was flying from a place in Hyogo Prefecture to the Kobe Heliport, it crashed into a slope near the top of a mountain in the prefecture. In this accident, the 8 persons aboard the helicopter were killed.
- ❖ **Sep. 19 '91** On September 19, 1991, an abnormal condition arose on a Boeing 747 aircraft which was flying from Tokyo to New York as a scheduled flight, and the aircraft returned to the New Tokyo International Airport. Because a fire broke out at a place near one of the engines while it was traveling along the runway for a landing, emergency evacuation was conducted. During this emergency evacuation, 8 persons were seriously injured and 38 slightly injured.
- ❖ **Apr. 18 '93** On April 18, 1993, when a Douglas DC-9 aircraft flying from Nagoya to Hanamaki as a scheduled flight landed at the Hanamaki Airport, it experienced a hard landing. The aircraft came to rest on the runway and burst into flames. In this accident, 3 persons were seriously injured and 55 slightly injured.
- ❖ **May. 2 '93** On May 2, 1993, when a Boeing 747 aircraft flying from Kagoshima to Tokyo as a scheduled flight landed at the Tokyo International Airport and was traveling along the runway, the cabin was filled with smoke. Therefore, emergency evacuation was conducted. In this emergency evacuation, 9 persons were seriously injured and 112 slightly injured.
- ❖ **Apr. 26 '94** On April 26, 1994, when an Airbus A300 aircraft flying from Taipei to Nagoya as a scheduled flight was approaching the Nagoya Airport for landing, it crashed into an area next to the runway and burst into flames. In this accident, 264 persons were killed and 7 seriously injured.
- ❖ **Jun. 13 '96** On June 13, 1996, when a Douglas DC-10 aircraft flying from Fukuoka to Bali as a scheduled flight was traveling along the runway at the Fukuoka Airport for a take-off, it overran the runway because the take-off was discontinued. The aircraft came to rest in an anti-noise green buffer zone approximately 620 meters away from the edge of the runway and burst into flames. In this accident, 3 persons were killed, 18 seriously injured, and 152 slightly injured.
- ❖ **Jan. 24 '97** On January 24, 1997, when an Aerospatiale AS365N-type helicopter used for a company's scheduled flight was flying from Susono City in Shizuoka Prefecture to Toyota city, it crashed into a slope near the top of a mountain along the Mikawa-wan Skyline Driveway and the 8 persons aboard the helicopter were all killed.

Among the major accidents involving aircraft of Japanese nationality that occurred outside Japan, those in which investigators from Japan joined a team of investigators organized by the state of occurrence are as follows (State of conducting investigation):

- ❖ **Dec. 17 '75** On December 17, 1975, when a Boeing 747 aircraft bound for Tokyo as a scheduled flight was traveling along a frozen taxiway at the Anchorage International Airport, it slipped out of the taxiway and was damaged. In this accident, 11 persons aboard the aircraft were injured. (United States)
- ❖ **Jan. 14 '77** On January 14, 1977, a Douglas DC-8 aircraft chartered as a cargo flight for Tokyo crashed, was heavily damaged, and burst into flames immediately after take off at the Anchorage International Airport. In this accident, 5 persons aboard the aircraft were all killed. (United States)
- ❖ **Sep. 27 '77** On September 27, 1977, a Douglas DC-8 aircraft flying from Tokyo to Kuala Lumpur via Hong Kong as a scheduled flight crashed somewhere short of the Kuala Lumpur Airport, was heavily damaged, and burst into flames. In this accident, 34 persons were killed and 45 injured. (Malaysia)
- ❖ **Sep. 17 '82** On September 17, 1982, an abnormal condition arose in the hydraulic system of a Douglas DC-8 aircraft flying from Shanghai to Tokyo as a scheduled flight immediately after it took off and therefore, it returned to Shanghai. When the aircraft landed, however, it overran the runway and the aircraft was heavily damaged. In this accident, 39 persons aboard the aircraft were injured. (China)
- ❖ **May. 5 '89** On May 5, 1989, a Bell 412-type helicopter flying for the transportation of personnel crashed into a tract of vacant land at Tienching City in China. In this accident, 10 persons aboard the helicopter were all killed. (China)