Aviation Safety
Module 7-8
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The Chicago Convention of 1944 created the International Civil Aviation Organization [ICAO] and gave it quasi-legislative authority to promulgate standards and recommended practices [SARPs] as Annexes to the Chicago Convention. These standards are binding upon member States that fail to notify ICAO of the differences in their domestic law.
Article 12 of the Convention requires every contracting State to keep its regulations uniform, to the greatest extent possible, with those established under the Convention.

Article 37 attempts to achieve uniformity in air navigation, by requiring that every contracting State cooperate in achieving the “highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft personnel, airways and auxiliary services in all matters in which uniformity will facilitate and improve air navigation.”

The sentence that follows provides, “[T]o this end [ICAO] shall adopt and amend from time to time . . . international standards and recommended practices and procedures” addressing various aspects of air navigation.

Therefore, ICAO’s 191 member States have an affirmative obligation to conform their domestic laws, rules, and regulations to the international leveling standards adopted by ICAO.
Annex 1 (Personnel Licensing), Annex 6 (Operation of Air-craft), and Annex 8 (Airworthiness of Aircraft) require ICAO’s member States to promulgate domestic laws and regulations to certify airmen, aircraft, and aircraft operators as airworthy and competent to carry out safe operations in international aviation.

Subject to the notification of differences under Article 38 of the Convention, the legal regime effectively assumes that States are in compliance with these safety mandates.

This assumption of universal compliance goes further with the Chicago Convention requirement that an airman or operator certificate, or certificate or airworthiness, issued by one contracting State shall be recognized as valid by all others.

Under Article 33, States are obliged to recognize the validity of the certificates of airworthiness and personnel licenses issued by the State in which the aircraft is registered, so long as the standards under which such certificates or licenses were rendered are at least as stringent as those established under the Chicago Convention.
The ICAO Council is authorized to adopt international standards and recommended practices [SARPs] on issues affecting the safety and efficiency of air navigation and, for convenience, designate them as Annexes to the Chicago Convention.

SARPs become effective as Annexes to the Convention not less than three months after they are approved by a two-thirds vote of the Council, unless during that period they are disapproved by a majority of the members of the ICAO General Assembly.

Typically, they are not issued until after extensive consultation with member States, and consensus is achieved, a process that takes two years or longer.
The Chicago Convention
The Chicago Convention

Standards & Recommended Practices
The Chicago Convention

Standards & Recommended Practices

National Legislation
The Chicago Convention
The Chicago Convention
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ICAO
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Standards & Recommended Practices

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States

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Regulations

Airlines
Manufacturers
Airmen

Regulatory Agency

ICAO

The Chicago Convention
## Aircraft Certification

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**REGULATION OF AVIATION PERSONNEL**

| Flight Crew          | • Pilot Licence  
                      | • Ratings        |
|----------------------|------------------|
| Aircraft Maintenance Engineers | • Aircraft Maintenance Engineer Licence  
                                 | • Ratings        |
| Air Traffic Controllers | • Air Traffic Controller Licence  
<pre><code>                            | • Ratings        |
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In the mid-1950s, a series of accidents brought to the surface an underlying need for significant safety enhancement in aviation.

In 1956, a Trans World Airlines Constellation collided with a United Airlines’ DC 7 over the Grand Canyon. In early 1957, a Douglas Aircraft company owned DC 7 collided with an Air Force F 89 over Sunland, California.

The DC 7 crashed into a junior high school, killing three and injuring seventy others. In 1958, a United Airlines’ DC 7 collided with an Air Force F 100 near Las Vegas, Nevada. The U.S. Congress responded with the promulgation of the Federal Aviation Act of 1958, and the creation of the Federal Aviation Agency (later to become the Federal Aviation “Administration” under the Department of Transportation Act of 1966).

*Creation of the FAA*
### Accident & Incident Investigation

| **Sole Objective** | • Accident prevention  
|                   | • Not to apportion blame or liability |
|                   | |
| **Notification**  | • Flight Crew  
|                   | • Operator |
|                   | |
| **Investigator in charge** | • State of Occurrence |
|                   | |
| **Accredited Representatives** | • State of Registry  
| | • State of the Operator  
| | • State of Design  
| | • State of the Manufacturer  
| | • State providing information, facilities or experts |
|                   | |
| **Investigation Phases** | • On notification  
| | • Field Phase  
| | • Analysis Phase  
| | • Report Writing Phase |
|                   | |
| **Report** | • Draft Final Report  
| | • Final Report  
| | • Safety Recommendations |
ACCIDENT & INCIDENT INVESTIGATION

At risk behaviors
Forced by system
Risk tolerance
Can be shaped
Safe behaviors

What people do

Sets Policy
Sets core values
Budgets
Performance
Measures
Directs
Plans

Manages
Shapes behaviour
Monitors
Implements

Risk/

Senior management

Local supervision

Culture

Individual behaviours

Physical safeguards

Accident/

Loss

(Source: Reason, 1994)
Annex 13 recommends that any court or administrative action designed to apportion blame or impose liability should be independent from the accident or incident investigation:

“[t]he accident investigation authority shall have independence in the conduct of the investigation and have unrestricted authority over its conduct . . .”.

The State shall establish “an independent accident and incident investigation process, the sole objective of which is the prevention of accidents and incidents, and not the apportioning of blame or liability. . . . In the operation of the SSP (State Safety Programme), the State maintains the independence of the accident and incident investigation organization from other State aviation organizations.”

The investigation consists of the gathering, recording and analysis of all available relevant information, the drawing of conclusions, including the determination of causes and/or contributing factors and, when appropriate, the making of safety recommendations.
Annex 13 requires that States establish both a mandatory and a voluntary incident reporting system.

Such a system must be “non-punitive and afford protection to the sources of the information”, because a “non-punitive environment is fundamental to voluntary reporting”.

In its guidance material, ICAO observes, “Ideally, State-run voluntary incident reporting systems are operated by an organization separate from the aviation administration responsible for the enforcement of aviation regulations.”
The State conducting the investigation should recognize the need for coordination between the investigator-in-charge (IIC) and judicial authorities.

Most of the evidence gathered should remain confidential unless the judicial authorities determine “that their disclosure outweighs the any adverse domestic and international impact such action may have on that or any future investigations . . .”.

Evidence gathered during the accident or incident investigation, including that given voluntarily, “could be utilized inappropriately for subsequent disciplinary, civil, administrative and criminal proceedings. If such information is distributed, it may, in the future, no longer be openly disclosed to investigators. Lack of access to such information would impede the investigation process and seriously affect flight safety.”

Hence, extreme caution is urged in using evidence gathered for safety investigation purposes in liability or punitive judicial or administrative proceedings, lest the willingness of those involved in an aviation accident be chilled from volunteering useful information.
Non-disclosure of records

5.12 The State conducting the investigation of an accident or incident shall not make the following records available for purposes other than accident or incident investigation, unless the appropriate authority for the administration of justice in that State determines that their disclosure outweighs the adverse domestic and international impact such action may have on that or any future investigations:

a) all statements taken from persons by the investigation authorities in the course of their investigation;

b) all communications between persons having been involved in the operation of the aircraft;

c) medical or private information regarding persons involved in the accident or incident;

d) cockpit voice recordings and transcripts from such recordings;

e) recordings and transcriptions of recordings from air traffic control units;

f) cockpit airborne image recordings and any part or transcripts from such recordings; and

g) opinions expressed in the analysis of information, including flight recorder information.

5.12.1 These records shall be included in the final report or its appendices only when pertinent to the analysis of the accident or incident. Parts of the records not relevant to the analysis shall not be disclosed.
Non-disclosure of records

Note 1.— Information contained in the records listed above, which includes information given voluntarily by persons interviewed during the investigation of an accident or incident, could be utilized inappropriately for subsequent disciplinary, civil, administrative and criminal proceedings. If such information is distributed, it may, in the future, no longer be openly disclosed to investigators. Lack of access to such information would impede the investigation process and seriously affect flight safety.

Note 2.— Attachment E contains legal guidance for the protection of information from safety data collection and processing systems.

5.12.2 The names of the persons involved in the accident or incident shall not be disclosed to the public by the accident investigation authority.
* Annex 19 - Safety Management Systems (SMS)

- **Proactive (Present)**
  - Actively seeks the identification of hazardous conditions through the analysis of the organization's processes
  - Analyzes system processes and environment to identify potential/future problems

- **Reactive (Past)**
  - Responds to events that have already happened, such as incidents and accidents

- **Predictive (Future)**

Source: FAA
Safety management System must, at minimum:

* a) identify safety hazards;
* b) ensure the implementation of remedial action necessary to maintain agreed safety performance;
* c) provide for continuous monitoring and regular assessment of the safety performance; and
* d) aim at a continuous improvement of the overall performance of the safety management system.

A safety management system shall clearly define lines of safety accountability throughout the operator’s organization, including a direct accountability for safety on the part of senior management.
• The National Transportation Safety Board (NTSB) handles aircraft accident investigations mandated under Annex 6 and appeals decisions of the Administrator of the FAA. Though it has no authority to issue regulations, the NTSB does have the responsibility to make regulatory recommendations to the FAA to avoid future accidents.

• The Transportation Security Administration of the US Department of Homeland Security regulates aviation security.

• The Office of the Secretary of Transportation has jurisdiction over economic regulatory issues such as airline financial fitness, competition policy, and consumer protection. The Secretary of Transportation is statutorily commanded to assign and maintain safety as “the highest priority in air commerce.”

• The FAA was established by the Federal Aviation Act of 1958 and subsequently became a part of the U.S. DOT upon its creation in 1967.
* The FAA is headed by an Administrator, appointed by the President with the advice and consent of the Senate, and serves for a five years term.

* The FAA Administrator is required to consider the maintenance and enhancement of safety and security as among the highest priorities in the public interest.

* The FAA is charged with promoting aviation safety, ensuring the safe and efficient utilization of the national airspace, and providing oversight of the U.S. airport system.

* Although it does not own and operate airports (they are owned and operated by local institutions, usually governments), the FAA issues airport operating certificates, regulates them, and administers financial support to them.

* The FAA handles all other aspects of airman, aircraft, airport, and airline safety as well as providing air traffic control and navigation services.

* It may require design or maintenance changes from aircraft manufacturers and carriers through the issuance of Airworthiness Directives [AD].

* Under U.S. law, actions of the Secretary of Transportation and of the FAA Administrator must be consistent with the international obligations imposed by the Chicago Convention.
The FAA licenses and regulates airline flight operations personnel, including flight crews, maintenance personnel and dispatchers, and exercises plenary jurisdiction over airline safety, training and maintenance procedures, technical flight standards, communications and ground equipment.

The FAA Administrator is directed to promote the safety of flight of civil aircraft in air commerce by prescribing rules, regulations, minimum standards, methods, and procedures.
* Article 31 requires that every aircraft flown internationally must be provided with a certificate of airworthiness by the State in which it is registered.

* Under Article 33, such certificates of airworthiness must be recognized by other States, provided that the requirements under which they were issued met or exceeded ICAO SARPs.

* Article 12 requires every State to adopt rules of the air to insure that aircraft flying over its territory, and aircraft carrying its nationality mark, will comply with the laws regulating the flight and maneuver of aircraft there in force.

* Article 83bis provides that when the operator of a leased, chartered, or interchanged aircraft has his principal place of business or permanent residence in another State, the State of registry may delegate to the State of the operator those functions that that State of registry can more properly perform, if it so consents to such delegation.

* **Chicago Convention:** Aircraft Airworthiness
* Annex 6 addresses the “Operation of Aircraft.” Its provisions go beyond flight operations, however, and include aircraft instruments and equipment, maintenance, and security.

* Annex 8 addresses “Airworthiness of Aircraft” in detail. It addresses flight performance, aircraft structures, design and construction, engines, propellers, powerplants, instruments and equipment, operating limitations, and continuing airworthiness requirements.

* It requires that a Certificate of Airworthiness be issued by the State on the basis of satisfactory evidence that the aircraft complies with the relevant airworthiness requirements.

* To demonstrate airworthiness, there must be an “approved design” comprised of drawings, specifications, reports, inspections, and flight testing. Aircraft that have been damaged, have fallen into disrepair, or have otherwise become less than airworthy shall not be flown until they are made airworthy again.
* The FAA holds broad authority to:
  ✓ prescribe minimum standards for the design, material, construction, quality of assembly and performance of aircraft, engines, and propellers;
  ✓ issue type, production, and airworthiness certificates;
  ✓ Certify the airworthiness of aircraft; and
  ✓ provide comprehensive inspection of aircraft and air operators.
* Airlines must have and maintain FAA certificates of airworthiness for all of their aircraft.
* An airline’s flight personnel, flight and emergency procedures, aircraft and maintenance facilities are subject to periodic inspection and tests by the FAA.
* The FAA also holds broad jurisdiction over navigation and air traffic control, including collision avoidance and wind shear detection.

*The FAA and Aircraft Air Worthiness
Part of the government’s comprehensive effort to promote aviation safety includes the promulgation of “Airworthiness Directives” [ADs].

Design and construction standards for aircraft are included in the ADs.

No person may lawfully operate an aircraft except in accordance with any applicable AD. Under the Federal Aviation Act, “airworthiness” requires aircraft to be in conformance with the aircraft’s type certificate, and be in condition for a safe flight.
Article 32 of the Chicago Convention requires that member States issue certificates of competency and licenses to the pilot and operating crew of every aircraft registered in said State and flown in international aviation.

With respect to flights above its territories, each State may refuse to recognize such certificates and licenses issued by another State to its own nationals.

Article 33 provides that certificates of competency and licenses shall be recognized as valid by other contracting States so long as the requirements under which they were issued were equal to or greater than the minimum standards established by ICAO.
* Annex 1 to the Chicago Convention addresses personnel licensing.
* No one may act as a flight crewmember without a valid license in compliance with the Annex.
* To secure a license or type rating, the applicant must satisfy age, knowledge, experience, flight instruction, and skill requirements.
* The licensing process also must include a medical fitness evaluation.
* Similar requirements are established for flight navigators, flight engineers, and aircraft maintenance personnel.
* The FAA issues all licenses specified in Annex 1 and validates foreign licenses.

* After investigation, if it is found that the applicant is physically able to perform the duties required for the "airman" certification and possesses the appropriate qualifications, the Secretary will issue a certificate designating the capacity in which the applicant is authorized to operate and the class, restrictions, and aircraft types for which certification is valid.

* The certificate specifies its terms, conditions, duration, physical fitness requirements, and any other qualifications deemed necessary in the interest of safety.
* “. . . an individual who engages, as the person in command or any individual who engages, as the person in command and or as pilot, mechanic, or member of the crew, in the navigation of aircraft while under way; and (except to the extent the Administrator may otherwise provide with respect to individuals employed outside the United States) any individual who is directly in charge of the inspection, maintenance, overhauling, or repair of aircraft, aircraft engines, propellers, or appliances; and any individual who serves in the capacity of aircraft dispatcher or air traffic control tower operator.”

* FAA Definition of an “Airman”
The purpose of the drug and alcohol regulations is, “to establish a program designed to help prevent accidents and injuries resulting from the use of prohibited drugs or the misuse of alcohol by employees who perform safety-sensitive functions in aviation.”

Persons performing the following “safety sensitive functions” must be tested for drugs and alcohol:

- (a) Flight crewmember duties.
- (b) Flight attendant duties.
- (c) Flight instruction duties.
- (d) Aircraft dispatcher duties.
- (e) Aircraft maintenance and preventive maintenance duties.
- (f) Ground security coordinator duties.
- (g) Aviation screening duties.
- (h) Air traffic control duties.

14 CFR § 120.105.

**FAA Drug Testing: Who Must Be Tested?**
**Required Tests.** Five types of employee tests are required: (1) pre-employment (including transfer of an employee to a safety-sensitive position); (2) reasonable suspicion; (3) post-accident; (4) random; and (5) return to duty/follow-up (periodic). Drug testing is required in all five situations, while alcohol testing is required in all five except pre-employment.

* The rule requires that the DOT procedures in 49 C.F.R. pt. 40 be applied to safety-sensitive aviation employees.

**FAA Drug Testing:** Types of Tests
Prior to the first time an employee performs a safety-sensitive function, the employer must ensure that the employee is tested and has a negative result for marijuana, cocaine, opiates, amphetamines, or PCP, and alcohol.

For alcohol, pre-employment testing is discretionary. If the employer chooses to administer an alcohol test, the individual must have an alcohol concentration level below 0.02 before he or she is allowed to perform a safety-sensitive function.

**FAA Pre-Employment Testing Requirements**
An employer shall conduct testing when it has a reasonable suspicion that the employee has used a prohibited drug, or is under the influence of alcohol. Reasonable “a reasonable and articulable belief that the employee is using a prohibited drug on the basis of specific contemporaneous physical, behavioral, or performance indicators of probable drug use.”

14 CFR § 120.109.
Post-accident testing must occur whenever a human life is lost in a transportation accident, and that post-accident testing also may be required by DOT whenever bodily injury, significant property damage, or other serious accident occurs.

As soon as practicable, and not more than 32 hours following an accident involving an accident, the employer must test an employee is his performance either contributed to an accident or can not be completely discounted as a contributing factor to the accident.

14 CFR § 120.109.
* The principal purpose of testing employees randomly is deterrence.
* DOT may prescribe regulations for conducting periodic recurring testing of transportation employees responsible for safety-sensitive functions for the misuse of alcohol or a controlled substance in violation of law or government regulation.
* The selection of such employees for random drug and alcohol testing shall be made by a scientifically valid method so as to ensure each employee has an equal chance of being tested each time tests are conducted.
* The dates for conducting the random testing should be spread reasonably throughout the year, though they should be performed at least quarterly. Random testing for alcohol misuse is restricted to safety-sensitive performance, while random drug testing may be performed at any time throughout the workday.
* The minimum annual percentage rate for random drug testing is 50 percent of covered employees, and 10 percent for alcohol testing.
Once an employee has failed or refused to take a drug or alcohol test, an Substance Abuse Professional [SAP] must evaluate the employee, prescribe a treatment regimen, and determine whether the employee has fulfilled the SAP’s recommendations.

Before such an employee is allowed to return to a safety-sensitive job, he or she must have passed the return to duty drug test, and if the SAP so determines, an alcohol test.

**FAA Return-to-Duty Testing Requirements**
Whenever the SAP determines it appropriate, the employee may be subjected to unannounced follow-up drug and/or alcohol testing. Follow-up testing for drug abuse or alcohol misuse shall consist of at least six tests within the first 12 months of the employee’s return to duty. The SAP, and not the employer, determines whether the employee requires up to 60 months of follow-up testing. The SAP determines both the length of follow-up testing and the number of follow-up tests.

Several States have legalized medical marijuana. The Department of Transportation’s Drug and Alcohol Testing Regulation does not authorize “medical marijuana” under a state law to be a valid medical explanation for a transportation employee’s positive drug test result. It provides that an MRO must not “verify a test negative based on information that a physician recommended that the employee use a drug listed in Schedule I of the Controlled Substances Act. (e.g., under a state law that purports to authorize such recommendations, such as the “medical marijuana” laws that some states have adopted.)”

* FAA Follow-Up Testing Requirements
* The FAA may issue an air carrier operating certificate.

* The FAA has established a Certification, Standardization, and Evaluation Team (CSET) for the certification of commercial air-lines.

* An air carrier operator has significant responsibility to “inspect, maintain, overhaul, and repair all aircraft . . . in its fleet.”

* Air Carrier Operating Certification
In determining whether a new applicant is fit, the DOT assesses whether the applicant:

1. has the managerial and operational ability to conduct the proposed operations;
2. has sufficient financial resources available to commence operations without undue risk; and
3. will comply with its statutory and regulatory obligations under the law (or, in the regulatory language often used, has demonstrated a satisfactory “compliance disposition”).

In initial certification of an airline, the DOT Office of the Secretary evaluates the financial, managerial, and operational fitness of an applicant in determining whether it will issue it a Certificate of Public Convenience and Necessity.

The fitness of foreign airlines is also evaluated before they are issued a permit to serve points in the United States.
Air traffic control and flight information services are governed by Annex 11 - Air Traffic Services.

In the United States, the FAA provides air navigation and air traffic control services.
* Annex 18 details the requirements for “The Safe Transport of Dangerous Goods by Air.”
* In the United States, the transportation of hazardous material is subjected to comprehensive regulation.
* The Associate Administrator for Hazardous Material Safety, in the DOT’s Research and Special Programs Administration, has jurisdiction over the transportation of dangerous goods by air.
* The regulations incorporate the ICAO Technical Instruction by reference.
* When information is made available to an FAA field office regarding an alleged violation, a letter announcing the initiation of an investigation is sent to the individual believed responsible.

* This letter advises the individual that certain facts and circumstances, made available to the FAA, indicate that a violation may have occurred.

* The individual is given the opportunity to respond to the allegations and advise the FAA field office.

* After the field office has completed its investigation, a report of the findings is forwarded to the appropriate Regional Counsel.
A warning letter is issued when a more serious sanction is unnecessary to deter repetition; and where, hypothetically, any average certificate holder might have done the same thing under similar circumstances.

It should bring to the attention of the violator the facts and circumstances of the occurrence.

It is intended to advise that such operations or practices are contrary to the regulations.

It is to state that the matter has been corrected and/or does not warrant legal enforcement action, and to request future compliance with the regulations.

The letter is constructed in such a manner as to leave no doubt that a violation has occurred, but that the person involved is not charged with the violation.
* A letter of correction is issued when the act is of a type which can be corrected, and the alleged violator acknowledges the violations (discrepancies, inadequacies, and areas of improvement).

* There is to be agreement that corrective action acceptable to the FAA is being taken, or will be taken within a reasonable time, or that satisfactory and prompt corrective action has been initiated.

* A letter of correction may also be used where the problem can be corrected by training, and its sole purpose is to correct bona fide non compliance items.

* If corrective action is not completed as agreed, legal enforcement action may be taken.

* Administrative Action: Letter of Correction
In determining whether an act of non compliance by an airman may be resolved with administrative action, certain conditions must be met:

- No significant unsafe condition can have existed;
- Lack of competency or qualification was not involved;
- The violation was not deliberate; and/or
- The alleged violator has a constructive attitude toward compliance and does not have a history of similar violations.

* Is Administrative Action Sufficient?
The FAA has comprehensive licensing and enforcement responsibilities.

The FAA holds broad emergency powers to suspend or revoke various operating and airworthiness licenses and certificates.

If, as a result of an investigation, it is determined that safety in air commerce or air transportation and the public interest so requires, an order amending, modifying, suspending, or revoking any airman certificate may be issued.

At various times, the FAA has used such power to suspend operations of a certain aircraft type, to suspend operations of an airline, or to suspend the operations of the entire airline industry.

Prior to any such action, however, the Administrator must advise the certificate holder as to any charges relied upon for the proposed action.

Except in an emergency, the certificate holder will be given the opportunity to be heard as to why his or her certificate should not be suspended, revoked, or amended.
* The U.S. government regulates safety through issuance and/or revocation of certificates not only of airmen, but of aircraft, air carriers, air navigation facilities, aircraft maintenance providers, and air carrier airports.

* Generally speaking, a person with a grievance must first exhaust his administrative remedies before the case may be taken to the federal court for review.

* The administrative appeal process normally begins with the agency concerned.

* If not satisfied at the originating agency level, the issue may be taken to another governmental agency appointed as a reviewing authority (in the case of aviation, the NTSB).

* If the issue cannot be resolved at the administrative level, and all available administrative appeals have been exhausted, appeal may then be made to the United States Court of Appeals.

* **Administrative Procedure**
* Article 26 provides:

* In the event of an accident to an aircraft of a contracting State occurring in the territory of another contracting State, and involving death or serious injury, or indicating serious technical defect in the aircraft or air navigation facilities, the State in which the accident occurs will institute an inquiry into the circumstances of the accident, in accordance, so far as its laws permit, with the procedure which may be recommended by the International Civil Aviation Organization. The State in which the aircraft is registered shall be given the opportunity to appoint observers to be present at the inquiry and the State holding the inquiry shall communicate the report and findings in the matter to that State.
An accident investigation can serve several different purposes:

- To provide corrective action;
- To punish a wrongdoer; or
- To compensate injured parties.

But under Annex 13, the *sole* objective is prevention of future accidents, not the apportionment of blame or liability for prior accidents or incidents. Specifically, Annex 13 provides, *inter alia*: "The *sole objective* of the investigation of an accident or incident shall be the prevention of accidents and incidents. It is not the purpose of this activity to apportion blame or liability."
Annex 13 provides that “the accident investigation authority shall have independence in the conduct of the investigation and have unrestricted authority over its conduct . . . .”

The investigation consists of the gathering, recording and analysis of all available relevant information, if possible the determination of the cause(s), and the completion of the Final Report followed, where appropriate, by safety recommendations.
Annex 13 recommends that States establish a voluntary incident reporting system. It also insists that such a system be “non-punitive and afford protection to the sources of the information”, because a “non-punitive environment is fundamental to voluntary reporting.”

In its guidance material, ICAO observes, “Ideally, State-run voluntary incident reporting systems are operated by an organization separate from the aviation administration responsible for the enforcement of aviation regulations.”

* Article 26 of the Chicago Convention requires the State where the accident occurred (the State of Occurrence) to conduct the investigation.
* Annex 13 permits the State of Occurrence to delegate the whole or part of the investigation to another State.
* If the event occurred outside the territory of any State, then the State of Registry shall conduct the investigation.
* The investigating State shall designate the IIC.
* It also may recruit technical expertise from any source to assist with the investigation.
* Article 26 provides that the State of aircraft registry may be given the opportunity to appoint observers to the investigation. Annex 13 provides that an accredited representative to participate in the investigation may be appointed by the State of Registry, Operator, Design and Manufacture. Any State which, upon request, provides information, facilities or experts to the investigating State also may appoint an accredited representative to participate in the investigation. At the discretion of the investigator, advisers proposed by the operator, designer or manufacturer may be engaged in the investigation. The investigator may also seek the assistance of the air navigation service provider, or airport operator, or any other relevant party.

*Who Participates?*
* To have access to the accident aircraft or wreckage, flight recorders, and air traffic control records;
* To have access to relevant records;
* To require persons to answer questions or furnish information;
* To require the aircraft or wreckage to be preserved pending examination;
* To examine and test an aircraft or any part thereof; and
* To require autopsy/medical/toxicological examinations on crew members, passengers and others involved.

* Powers of the Investigator
Since its formal independence in 1974, the NTSB has become a global leader in performing the mission of accident investigations. One source noted that the NTSB, “enjoys the reputation of being the most important safety investigative authority in the world; the caliber of its investigations has become the international standard. The NTSB is considered to be the best in the business and has served as a model for independent investigative authorities in many countries.”

The primary mission of the NTSB is to investigate the facts and circumstances, and determine the probable cause of safety incidents and accidents in all modes of transport, and issue recommendations to transportation agencies such as the FAA so as to reduce the likelihood of recurrence. Though the NTSB has the power to investigate and make recommendations, it is without regulatory or enforcement jurisdiction. The FAA has the power to promulgate and enforce regulations, and the responsibility to consider and respond to NTSB recommendations.

Annually, the Department of Transportation must report to the Congress what action, if any, it has taken on the NTSB recommendations, such as the issuance, or amendment, of Federal Aviation Regulations [FARs]; in turn, the NTSB is directed to review that report, and submit comments to the appropriate Congressional committees.

Historically, the FAA has responded positively to 90% of the NTSB’s urgent recommendations, and 80% of all its recommendations.
The NTSB’s investigations consist of four phases: (1) launch; (2) fact finding; (3) analysis; and (4) report production. When a “major accident” occurs, a fact-finding team normally is dispatched to the scene within hours of notification. The team leader is a senior investigator termed the investigator-in-charge.

The NTSB considers an event to constitute a “major accident” if it either involves an issue related to a current safety study or investigation, impacts public confidence or transportation safety in a significant way, or is catastrophic.
Section 1441(e) of Title 49 of the United States Code governs the use at trial of NTSB reports and states:

No part of any report or reports of the National Transportation Safety Board relating to any accident or the investigation thereof, shall be admitted as evidence or used in any suit or action for damages growing out of any matter mentioned in such report or reports.

Although US law provides that NTSB reports “relating to any accident or the investigation thereof” may not be introduced as evidence in “any suit or action for damages growing out of any matter mentioned in such report”, and further preclude NTSB investigators from testifying in court, the reality is that such reports are viewed as “roadmaps to liability”, and often trial is postponed until the Final Report is prepared. For its part, the NTSB has promulgated regulations attempting to differentiate between (admissible) factual accident reports, and (inadmissible) Board accident reports (which include the probable cause finding).

Admissibility in Court