Appendix D
Regulatory Methodology Used by Other Countries

D.1 Introduction

Air commerce is very much an international business. Aircraft designed and built in one country are imported and operated in other countries. Airlines based in one country have route networks that extend to many other countries. A complicated set of international agreements is, therefore, required to ensure the safe design and operation of aircraft operated internationally and has led to the status that the regulatory methodologies used by most nations are relatively similar.

D.2 Foreign Airworthiness Authorities and Regulations

Each country is responsible for setting appropriate requirements and enforcement procedures to ensure the safe design and operation of aircraft in that country. This includes aircraft registered and operated in that country and foreign-registered aircraft operated to that country in international commerce.

Most countries have their own airworthiness authorities and codes or regulations to some degree of detail. In addition to their own regulations, many countries also accept sections of other countries' codes for aircraft certification and approval, particularly Federal Aviation Regulations (FARs) of the United States and British Civil Airworthiness Requirements (BCARs) of the United Kingdom. In addition, Joint Airworthiness Regulations (JARs) from the Joint Aviation Authorities of Europe.

Table D-1 identifies airworthiness authorities and additional country codes adopted for issuance of a certificate of airworthiness.

D.3 Regulations Covering Foreign Air Carriers

Airlines based in one country that wish to transport passengers and/or goods into another country must comply with the requirements imposed on foreign carriers by the host country before the service can start. Generally, such agreements are more or less reciprocal.

In the United States, the requirements are contained in FAR 129, "Operations: Foreign Air Carriers and Foreign Operators of U.S. Registered Aircraft Engaged in Common Carriage," and mandate essentially that the aircraft and aircrew involved be certificated in the country of registry, and that the operation of the aircraft observe the air traffic rules and procedures prescribed for U.S. air carriers.

In other countries, the requirements are generally similar to those in the United States.

D.4 Certification of Foreign-Manufactured Aircraft

Aircraft manufactured in one country are often sold and exported to other countries for operation. This is particularly true of large transport aircraft manufactured in the United States, the United Kingdom, and the Airbus consortium countries (France, Spain, West Germany, and the United Kingdom).

The aircraft must meet specified airworthiness regulations of the importing country and must receive from the exporting country whatever licenses or permits are needed for it to be exported.

During the 1950s and 1960s, large transport aircraft were manufactured almost exclusively in the United States, the United Kingdom, and the Soviet Union. Many of these aircraft were purchased and imported by other countries. Most countries not allied with the Soviet Union purchased and imported large transport aircraft from the United States or the United Kingdom. Since these aircraft were certificated to the FARs or the very similar BCARs, it was expeditious and beneficial for other countries to base their own regulations on FARs and/or BCARs.

Table D-1. Air Worthiness Authorities and Country Codes

Country	Airworthiness Authority	Airworthiness Standards
Argentina	Direccion Nacional de Aeronavegabilidad	Information Bulletins No. 13 and 24
Australia	Department of Transport Airworthiness Division	Australian Air Navigation Order 101
Brazil	Departmento de Aviacaco Civil	Brazilian Aeronautical Certification Requirements
Canada	Airworthiness Division Transport Canada	FAR Parts 23, 25, 27, 29, 31, 33,and 35 JAR 22 TSOs
Denmark	Director of Civil Aviation	FAR BCAR JAR
Finland	National Board of Aviation Flight Safety Department	JAR 25 FAR Finnish Aviation Regulations detail any deviations
France	Direction Generale de l'Aviation Civile (DGAC)	JAR 25 FAR Parts 23, 27, and 29
Germany, Federal Republic of	Luftfahrtbundesamt (LBA)	FAR Parts 23, 25, 27, and 29 JAR 22 and 25
Indonesia	Directorate General of Air Communications	Civil Aviation Safety Regulations, based on FAR Parts 23, 25, 27, 29, 33,35, and 37
Ireland	Department of Transport Aeronautical Airworthiness Service	BCAR FAR
Italy	Ministereo dei Trasporti Direzi- one Generale Dell'Aviazionne Civile	Parts 223, 225, 226, 228, 231, 233, and 235 of RAI Technical Rules, based on FAR Parts 23, 25, 27, 29, 31, 33 and 35 JAR
Japan	Airworthiness Division Civil Aviation Bureau Ministry of Transport	Annex to Civil Aeronautics Regulations of Japan
Mexico	Direccion General de Aeronautica Civil	Reglamento de Operacion de Aeronaves Civiles y Circular relativos a certificados de aeronavegabilidad
Netherlands, Kingdom of	Aeronautical Inspection Directorate	Netherlands Airworthiness Requirements, based on JAR and FAR
New Zealand	Director of Civil Aviation Ministry of Transport	New Zealand Civil Airworthness Requirements C-1, C-2, C-3, and C-4
Norway	Civil Aviation Administration Aeronautical Inspection Department	JAR FAR BCAR
Sweden	Board of Civil Aviation Flight Safety Department	FAR JAR Swedish Civil Aviation Regulations detail any deviations
Switzerland	Federal Office for Civil Aviation	FAR Franch Airworthiness Code (LFSM) JAR German Airworthiness Code (LFSM) BCAR
United Kingdom	Civil Aviation Authority	BCAR JAR
United States	Federal Aviation Administration	FAR

Beginning in the 1970s, aircraft began to be manufactured in more countries. In addition, the aircraft manufacturing industry has an increasing number of international companies and, as a result, many multinational business ventures have evolved. Foreign governments have approached this growth in the airplane industry by organizing their own airworthiness authorities and regulations and by entering into international agreements regarding airplane certification.

D.4.1 Bilateral Airworthiness Agreements

A useful procedure to reduce the problems associated with certification of aircraft by importing countries is the Bilateral Airworthiness Agreement (BAA). These agreements generally state that for those requirements in the two countries' regulations that overlap, the importing country will accept the exporting country's certification of compliance. Requirements imposed by the importing country that are not included in the exporting country's regulations must be separately shown to have been met.

The United States negotiates BAAs primarily with countries who have an aeronautical product they desire to export to the United States. When a request is made to establish a BAA, the FAA must evaluate the foreign airworthiness authority's technical competence, capabilities, and regulatory authority, and the country's airworthiness laws and regulations to ensure that an equivalent level of safety will be met. Currently, the United States has 24 such agreements. Those countries have BAAs with the United States; those BAA components are identified in table D-2. A copy of each BAA can be found in Advisory Circular 21-18, "Bilateral Airworthiness Agreements."

BAAs are not considered to be trade agreements; they are technical agreements, existing only to facilitate the reciprocal acceptance of certification. Most BAAs address the following issues:

1. The importing country shall give the same validity to the certification given by the exporting country.

2. The aeronautical authority of the importing country shall have the right to make acceptance of any certification by the airworthiness authority of the exporting country. This depends on the product meeting any additional requirements that the importing country finds necessary that would be applicable for a similar product produced in the importing country.

3. Each airworthiness authority shall keep the other informed on all relevant laws, regulations, and requirements.

4. In the event of conflicting interpretations of a regulation, the interpretation of the country originating the relation shall prevail.

In the United States, the Federal Aviation Administration (FAA) implements BAAs through the export and import certification regulations of FAR Part 21.

D.4.2 Joint Airworthiness Regulations (JARs)

The Joint Aviation Authorities (JAA) is an associated body of the European Civil Aviation Conference (ECAC) representing the civil aviation regulatory authorities of a number of European States who have agreed to co-operate in developing and implementing common safety regulatory standards and procedures. This co-operation is intended to provide high and consistent standards of safety and a "level playing-field" for competition in Europe. Much emphasis is also placed on harmonizing the JAA regulations with those of the USA.

Table D-2. Summary of Products Eligible for U.S. Import Under Bilateral Agreements

BILATERAL COUNTRIES (Revised 1999)	**Aircraft**	**Replacement/Modification Parts for Exported Aircraft**	**Aircraft Engines**	**Replacement/Modification Parts for Exported Engines**	**Propellers**	**Replacement/Modification Parts for Exported**	**Appliances**	**Replacement/Modification Parts for Exported**	**Materials**	**Parts**	**Subassemblies**	**Third Country Provisions**	**Maintenance**	**Agreement Date**	**See Reference Notes Number**
Argentina	X	X	X	X	X	X	X	X	X	X	X			1991	
Australia	X	X	X	X	X	X	X	X	X	X	X	X		1975	1, 2, 3
Austria	X	X	X	X	X	X								1959	
Belgium	X	X	X	X	X	X	X	X	X	X	X	X		1973	1, 2
Brazil	X	X	X	X	X	X	X	X	X	X	X	X		1976	1, 2
Canada	X	X	X	X	X	X	X	X	X	X	X	X	X	1984	1, 2
China	X	X					X							1991	4
Czech Republic	X	X	X	X	X	X	X	X						1970	
Denmark	X	X	X	X	X	X	X	X	X	X	X	X		1970	2
Finland	X	X					X	X						1974	5
France	X	X	X	X	X	X	X	X	X	X	X	X		1973	1, 2
Germany	X	X	X	X	X	X	X	X	X	X	X	X	X	1999 1998	1, 2, 13
Indonesia														1992	6
Israel	X	X	X	X	X	X	X	X	X	X	X			1974	2
Italy	X	X	X	X	X	X	X	X	X	X	X	X		1973	1, 2
Japan	X	X	X	X	X	X	X	X	X	X	X	X		1977	1, 2
Malaysia	X	X					X							1997	7
Netherlands	X	X	X	X	X	X	X	X	X	X	X	X		1974	1, 2
New Zealand	X	X	X	X	X	X	X	X	X	X	X			1979	2, 8
Norway	X	X					X	X						1978	
Poland	X	X	X	X	X	X	X	X	X	X	X	X		1980	2, 9
Romania	X	X												1976	10
Russia	X	X							X					1998	11
Singapore							X	X	X	X	X	X		1981	1, 2, 12
South Africa	X	X	X	X	X	X	X	X	X	X	X			1984	2
Spain	X	X					X	X						1978	
Sweden	X	X	X	X	X	X	X	X	X	X	X	X		1973	1, 2
Switzerland	X	X	X	X	X	X	X	X	X	X	X			1977	2
United Kingdom	X	X	X	X	X	X	X	X	X	X	X	X		1972	1, 2

The JAA Membership is based on signing the "JAA Arrangements" document originally signed by the then current member States in Cyprus in 1990. Based on these Arrangements and related commitments, the JAA's objectives and functions may be summarised as follows:

Objectives:

- To ensure, through co-operation on regulation, common high levels of aviation safety within the Member States.
- To achieve a cost effective safety system so as to contribute to an efficient aviation industry.

- To contribute, through the uniform applications of common standards, to fair and equal competition within the member states.

- To promote, through international co-operation, the JAA standards and system to improve the safety of aviation worldwide.

Functions:

- To develop and adopt Joint Aviation Requirements (JARs) in the fields of aircraft design and manufacture, aircraft operations and maintenance, and the licensing of aviation personnel.

- To develop administrative and technical procedures for the implementation of JARs.

- To implement JARs and the related administrative and technical procedures in a co-ordinated and uniform manner.

- To adopt measures to ensure, whenever possible, that pursuance of the JAA safety objective does not unreasonably distort competition between the aviation industries of Member States or place companies of Member States at a competitive disadvantage with companies of non-Member States.

- To provide the principal center of professional expertise in Europe on the harmonization of aviation safety regulation.

- To establish procedures for joint certification of products and services and where it is considered appropriate to perform joint certification.

- To co-operate on the harmonization of requirements and procedures with other safety regulatory authorities, especially the Federal Aviation Administration (FAA).

- Where feasible, to co-operate with foreign safety regulatory authorities, especially the FAA, on the certification of products and services.

JAA's work was started in 1970 (when it was known as the Joint Airworthiness Authorities). Originally its objectives were only to produce common certification codes for large aeroplanes and for engines. This was to meet the needs of European industry, particularly for products manufactured by international consortia (eg., Airbus). Since 1987 its work has been extended to operations, maintenance, licensing and certification/design standards for all classes of aircraft. Common procedures and the approval of design, production, and maintenance organizations are covered. A single Joint Certification team, working on behalf of all the JAA countries, is used for certification of new aircraft and engines. After the successful completion of the evaluations, Type Certificates are issued simultaneously, and on a common basis, by all States.

The JAA originated as the Authorities' response to the technical and economic needs of the European aviation industry. However, since 1 January 1992, JAA codes, as they are completed, are referenced in the European Community Regulation on Harmonized Technical Standards and become law in the EC States.

Industry is fully represented in committees and working groups developing requirements and procedures and in a joint assembly and joint boards where policy issues are debated.

The JAA, as presently constituted, carries out its tasks of approval, certification and safety monitoring using staff of the national authorities, who also retain the responsibility for the legal findings of granting licenses and certificates, etc. The JAA Headquarters is responsible for the process of rulemaking, harmonization and standardization, (using specialist staff from the national authorities), the decision-making system, the "infrastructure," and various related tasks.

The relevant committees and working groups for the work in the Materials Handbook are the following:

- JAA Research Committee

  The committee is tasked to promote, coordinate, and disseminate the results of aviation safety research carried out in JAA countries and to prepare proposals for aviation safety research funds by the European Commission and to liaison with the EU as necessary.

- Project Advisory Group on Occupant Survivability

  This group, reporting to the JAA Research Committee, is tasked to advise on the Research Committee on matters related to Occupant Survivability

- The Cabin Safety Study Group

  This group reports to the JAA Certification Director at the JAA Headquarters.
  The purpose of the Cabin Safety Study group is to consider the Cabin Safety Requirements related to the design and construction and equipment requirements for the JAR-25.

In 1979 a milestone was passed when JAR 25, which was based on FAR 25 and covered large transport aircraft, was adopted. France, the Netherlands, the United Kingdom, and West Germany have adopted JAR 25 as their sole, common code for certification of large transport aircraft. Incidentally, FAR 25 Amendments are not automatically adopted into JAR 25; they must first be accepted by the Steering Committee before incorporation.

REFERENCE NOTES

1. These bilateral agreements contain a third-party country provision which provides for import/export certification of products by the CAA of a country other than the country of manufacture. In these instances, the exporting country must certify that the products conform to the design covered by the certificate or approval of the importing country (which would be other than country of manufacture) and that the products are in proper state of airworthiness. This provision only applies when all three countries (i.e., manufacturing, importing, and exporting countries) have similar agreements for the reciprocal acceptance of such certifications covering the same class of products. The specific text of the applicable bilateral agreements should be consulted for any limitations.

2. The U.S. has bilateral agreements with these countries which provide for the reciprocal acceptance of conformity inspections (certificates of conformity) for components (i.e., materials, parts, and subassemblies) produced within the limits of each particular bilateral, provided that

   a. an agreement exists between the manufacturers in the importing and exporting countries;

   b. the component is of such complexity that a determination of conformity cannot readily be made by the manufacturer in the importing country;

   c. the airworthiness authorities of the importing country have notified the airworthiness authorities of the exporting country of the applicable design, test, and quality control requirements; and

   d. the authority of the exporting country is willing to undertake the conformity inspection task.

3. The U.S./Australian BAA contains a two-party country provision which provides for

   a. reciprocal certification whereby Australia can issue an export certificate for a U.S.-manufactured product located in that country which is to be exported to the U.S.

b. conversely, the U.S. can issue an export certificate for an Australian-manufactured product that is located in the U.S. and is to be exported to Australia.

c. such certifications will state that the product conforms to the importing country's type design and is in a proper state of airworthiness.

4. The Schedule of Implementation Procedures for the U.S./China BAA provides for U.S. acceptance of Chinese TSO appliances, fixed-wing aircraft not exceeding 12,500 lbs., and commuter category airplanes up to 19 passengers with a maximum certificated takeoff weight of 19,000 lbs.

5. Although this bilateral agreement contains a provision for including appliances and replacement or modification parts, therefore, by mutual consent of both countries' aviation authorities, no appliances nor replacement/ modification parts have been included to date.

6. The Schedule of Implementation Procedures for the U.S./Indonesia BAA is limited, when exporting aeronautical products from Indonesia to the U.S., to the production approval and airworthiness certification or approval of civil aeronautical products for which the Indonesian manufacturer holds the manufacturing rights to a U.S. type certificate under a licensing agreement with a U.S. manufacturer or with a manufacturer in another state with which the U.S. has an agreement for the reciprocal acceptance of type design certifications.

7. The U.S./Malaysia Implementation Procedures for Airworthiness provides for U.S. acceptance of Malaysian TSO appliances and small metal airplanes of up to nine passengers with a maximum certificated takeoff weight of 12,500 lbs.

8. The U.S./New Zealand BAA is limited to

   a. Export from New Zealand to the U.S.:

      i. Fixed-wing aircraft constructed in New Zealand not exceeding a maximum weight of 12,500 pounds and their spare (replacement) parts;

      ii. Appliances for use on civil aircraft and their spare (replacement) parts;

      iii. Components for fixed-wing aircraft not exceeding 12,500 pounds

   b. Export from U.S. to New Zealand:

      i. U.S.-constructed civil aircraft, aircraft engines and propellers and their spare (replacement) parts;
      ii. Appliances for use on civil aircraft and their spare (replacement) parts;
      iii. Components for use on civil aircraft and related products.

9. The U.S./Poland BAA is limited to

   a. Products which may be exported from Poland to U.S. (or U.S. possession):

      i. Civil gliders and replacement/modification parts therefore designed and produced in Poland;

      ii. Piston engines of 1,000 h.p. or less with associated propellers and accessories and replacement/ modification parts therefore produced in Poland;

      iii. Small fixed-wing aircraft of 12,500 pounds of less and replacement/modification parts therefore;

      iv. Helicopters with associated accessories and replacement/ modification parts therefore;

      v. Turbine engines and replacement/modification parts therefore; and,

vi. Components and appliances for U.S.-manufactured products of the types specified in subparagraphs i., ii., iii., iv., and v. above.

b. Products which may be exported from the U.S. to Poland:

i. U.S.-designed and produced aircraft, engines, propellers, components, appliances, and replacement/ modification parts therefore; and

ii. U.S.-produced components and appliances for Polish-manufactured products and replacement and spare parts therefore.

10. The U.S./Romania bilateral provides for U.S. acceptance of Romanian and motorized gliders only.

11. The U.S./Russia Implementation Procedures for Airworthiness limit U.S. acceptance to Russian—

a. New and used, metal aircraft having up to nine passengers and a maximum certificated takeoff weight of 12,500 lbs or less,

b. New and used transport category aircraft (cargo configuration only) with FAA-certificated engines, propellers, and avionics, approved for Category I and Category II instrument approach procedures; and

c. Metallic materials.

Aircraft eligible for import to the U.S. must have been designed to the applicable Russian aviation regulations (APs). Aircraft built to early regulations are not covered under this agreement.

12. The U.S./Singapore BAA is limited to –

a. Export from Singapore to the U.S.:

i. U.S.-designed component for use in the manufacture of an aircraft or related product in the U.S. (Note: Such components may also be shipped directly from Singapore to other States [other than the U.S.], when authorized by the FAA, for use as a replacement or modification part on U.S.-registered aircraft located in the other State) and;

ii. Appliances approved under Federal Aviation Regulations, § 21.617, Technical Standard Order Design Approval.

iii. Note 1 of this document (third party country provision) only applies to those products listed under the foregoing subparagraphs 1. and 2. exported from Singapore to the U.S.

b. Export from the U.S. to Singapore:

i. All products listed in the summary chart (page 1 of this appendix); and

ii. Note 1 of this document (third-party country provision) applies to all products listed in the summary chart, exported from the U.S. to Singapore.

13. On August 23, 1999, Implementation Procedures for Airworthiness were concluded under the U.S./Germany Bilateral Aviation Safety Agreement. This IPA includes reciprocal acceptance of all aeronautical products and STCs. (The IPA replaces the 1974 U.S./Germany Bilateral Airworthiness Agreement.) A Maintenance Implementation Procedure was concluded with Germany in 1997 for reciprocal acceptance of repair station certifications (contact AFS-300).

BILATERAL AGREEMENTS

	Country	Agreement Type	Application/Scope of U.S. Acceptance
1.	Argentina	• BAA • Schedule of Implementation Procedures	Applies to all aeronautical products, including components
2.	Australia	• BAA	Applies to all aeronautical products and certain components
3.	Austria	• BAA	Applies to all aeronautical products
4.	Belgium	• BAA	Applies to all aeronautical products and certain components
5.	Brazil	• BAA	Applies to all aeronautical products and certain components
6.	Canada	• BAA • Schedule of Implementation Procedures	Applies to all aeronautical products, including components
7.	China	• BAA • Schedule of Implementation Procedures	Applies to fixed-wing aircraft not exceeding 12,500 lbs., commuter category airplanes up to 19 passengers with a maximum certificated takeoff weight of 19,000 lbs. or less, and TSO appliances
8.	Czech Republic	• BAA • Operating Procedures	Applies to all aeronautical products
9.	Denmark	• BAA	Applies to all aeronautical products and certain components
10.	Finland	• BAA	Applies to gliders and aircraft appliances
11.	France	• BAA	Applies to all aeronautical products and certain components
12.	Germany	• BASA Executive Agreement • Implementation Procedures for Airworthiness	Applies to all aeronautical products and certain components
13.	Indonesia	• BAA • Schedule of Implementation Procedures	Applies to production oversight in Indonesia under licensing agreements with U.S. manufacturers
14.	Israel	• BAA	Applies to all aeronautical products, appliances, and components
15.	Italy	• BAA	Applies to all aeronautical products and certain components
16.	Japan	• BAA	Applies to all aeronautical products and certain components
17.	Malaysia	• BASA • Implementation Procedures for Airworthiness	Applies to TSO appliances and small, all metal airplanes up to nine passengers with a maximum certificated takeoff weight of 12,500 lbs.
18.	Netherlands	• BAA	Applies to all aeronautical products and certain components
19.	New Zealand	• BAA	Applies to fixed-wing aircraft not exceeding 12,500 lbs.
20.	Norway	• BAA	Applies to all categories of civil aircraft and appliances
21.	Poland	• BAA	Applies to certain components, gliders, piston engines of 1,000 h.p. or less, associated propellers, helicopters, turbine engines, and fixed-wing aircraft not exceeding 12,500 lbs.

	Country	Agreement Type	Application/Scope of U.S. Acceptance
22.	Romania	• BAA	Applies to gliders and motorized gliders
23.	Russia	• BASA Executive Agreement • Implementation Procedures for Airworthiness	Applies to small, all metal airplanes up to nine passengers with a maximum certificated takeoff weight of 12,500 lbs and to transport category cargo airplanes (both with FAA-certificated engines, propellers, and avionics).
24.	Singapore	• BAA	Applies to TSO appliances and components
25.	South Africa	• BAA	Applies to all categories of civil aircraft
26.	Spain	• BAA	Applies to all categories of civil aircraft and appliances
27.	Sweden	• BAA	Applies to all aeronautical products and certain components
28.	Switzerland	• BAA	Applies to all aeronautical products and certain components
29.	United Kingdom	• BAA	Applies to all aeronautical products and certain components