

INTERNATIONAL AIRCRAFT NOISE CERTIFICATION

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I. INTRODUCTION.

On November 16, 1998, the Council of the European Union¹ adopted a common position² proposing adoption of a Council regulation that would ban certain aircraft from being registered in any EU member nation on or after April 1, 1999,³ and from being operated within the EU on or after April 1, 2002.⁴ The regulation has ignited an international dispute that threatens future technological advances in aircraft and aircraft engine design, as well as US-EU trade relations.

If implemented, the regulation would ban EU member nations from registering many older aircraft that have been modified to meet present-day noise emissions standards either by installing newer, quieter engines, a process known as “re-engining,” or by one of several other technological means collectively referred to as “hushkits.”⁵ In addition, the regulation would ban the use of many re-engined or hushkitted aircraft within the EU after April 1, 2002.⁶

¹ (Hereinafter EU).

² *Council Common Position* (EC) No. 66/98, 1998 O.J. (C404) 1 (adopted Nov. 16, 1998; published Dec. 23, 1998) (hereinafter *Common Position*).

³ *Id.* at art. 3.1.

⁴ *Id.* at art. 3.4.

⁵ *Id.* at art. 2.2.

⁶ *Id.* at art. 3.4.

The regulation does contain a number of exemptions. If the regulation is implemented, an aircraft registered in an EU member nation on the effective date of the registration ban would be exempt from the ban and could be transferred freely from the national registry of one EU member nation to the registry of another EU member nation, but upon any transfer of an aircraft to the registry of a non-EU member nation, the aircraft could not again be registered in an EU member nation.⁷ Aircraft registered in the EU on the effective date of the registration ban would also be exempt from the ban on the use of affected aircraft within the EU after April 1, 2002, provided only that the aircraft was actually operated within the EU prior to the effective date of the registration ban.⁸

An aircraft registered outside the EU that was operated within the EU between April 1, 1995, and the effective date of the registration ban could also continue to be operated in the EU after April 1, 2002, but only for so long as it remains on the register of the nation where it was registered on the effective date of the registration ban.⁹

Reaction to the regulation outside the EU has been vociferous, emotionally charged, and nearly unanimous in opposition. The general consensus appears to be that the regulation is industrial protectionism masquerading under the guise of environmentalism. Many in the aviation industry have charged that the proposed

⁷ *Id.* at art. 3.2.

⁸ *Id.* at art. 3.4.

⁹ *Id.* at art. 3.3.

regulation is an eleventh-hour attempt to rewrite decades-old internationally agreed-upon aircraft noise certification standards in such a manner as to benefit the EU's airlines and aerospace industry, at the expense of airlines and aerospace firms in the United States and the rest of the world.

Critics of the regulation point out that it would establish specific design standards rather than performance standards, which is the preferred method of aircraft certification regulation. The critics further charge that the design standards incorporated into the regulation would draw the line between permitted and prohibited aircraft at a point that excludes many US manufactured products, and includes EU manufactured products, and in any event probably would not result in any noise reduction benefits in the areas around EU airports. For example, a re-engined aircraft would be subject to the restrictions of the regulation only if the newly installed engines have a "by-pass ratio"¹⁰ of less than 3 to 1.¹¹ The regulation, if implemented, would effectively punish aircraft operators that have re-engined their aircraft, at great

¹⁰ The "by-pass ratio" of a jet engine is the ratio of the air mass flow through the by-pass ducts of the engine, to the air mass flow through the combustion chamber of the engine. See ICAO, International Standards and Recommended Practices, Environmental Protection, Annex 16 to the Convention on International Civil Aviation, Vol. I, Part I, (3d ed. Jul. 1993).

¹¹ Common Position, *supra* at art. 2.2. Although increasing an engine's by-pass ratio is one of several methods by which a manufacturer may reduce the noise emissions of its engines, it is merely one of a host of criteria considered in the design of an aircraft engine. To date, the European Commission does not appear to have produced any data that indicates that existing engines having by-pass ratios above 3 to 1 are quieter than those with by-pass ratios less than 3 to 1.

expense, with engines manufactured in the United States. One of the most popular engines for re-engining is the Pratt & Whitney JT8D. Manufactured in the United States and Canada, the JT8D has a by-pass ratio of 1.74 to 1,¹² and consequently, aircraft re-engined with the JT8D would be affected by the regulation. Conversely, aircraft re-engined with another popular engine, the Rolls-Royce Tay 651, manufactured in the United Kingdom, would not be affected by the regulation; the Rolls-Royce Tay 651 has a by-pass ratio of 3.1 to 1.

Some have suggested that the ban on hushkitted aircraft may actually result in unintended, adverse environmental noise effects around Europe's airports. The aircraft most affected by the regulation would be the smaller, mostly US-built jet transports such as the Boeing 727 and the DC-9 that can only meet current noise emissions standards by being fitted with hushkits or new engines. The maximum level of noise emissions permitted by modern standards is, however, determined by the weight of the aircraft; larger aircraft are permitted to emit greater levels of noise, and therefore often can meet modern noise standards without hushkits. By banning hushkitted aircraft, the EU may very likely find that air carriers will be forced to operate larger, noisier aircraft in markets that currently may be served by smaller, quieter, hushkitted aircraft.

¹² See <http://www.pratt-whitney.com/engines/gallery/jt8d.html>.

In response to the proposed regulation, Northwest Airlines, Inc.,¹³ on January 15, 1999, filed a complaint under 49 U.S.C. § 41310 with the United States Department of Transportation against the Council of the EU and its fifteen member nations.¹⁴ In its complaint, Northwest Airlines alleged that the regulation, if adopted would cause the violation by each of the EU's member nations of a number of international treaties and agreements including the Chicago Convention,¹⁵ dozens of bilateral air services agreements to which individual EU member nations are a party, and several international trade agreements.¹⁶

On April 29, 1999, the EU adopted the regulation; however, in response to strenuous U.S. diplomatic objections, triggered at least in part by the Complaint of Northwest Airlines, the EU delayed implementation of the registration ban for approximately one year. The delay in the implementation of the registration ban provides additional time for the US and the EU to reach some form of resolution to the issue. Both the US and the EU appear to be taking hard-line positions on the matter. The EU appears to be unwilling to repeal the regulation under any circumstances, but may be willing to negotiate delays or modifications to the regulation on condition that

¹³ (Hereinafter Northwest Airlines).

¹⁴ Complaint of Northwest Airlines, Inc., against the Council of the European Union and the Governments of the 15 EU Member States, United States Department of Transportation, Docket OST-99-5011-1, filed Jan. 15, 1999 (hereinafter Complaint of Northwest Airlines).

¹⁵ Convention on International Civil Aviation, December 7, 1944, 61 Stat. 1180, 15 U.N.T.S. 295, ICAO Doc. 7300/6 (hereinafter Chicago Convention).

¹⁶ Complaint of Northwest Airlines, *supra* note 14, at 1.

the US commit itself to work towards accelerating the establishment of the next generation of aircraft noise certification standards through the International Civil Aviation Organization.¹⁷ The United States Government, on the other hand, appears to be willing to accelerate work towards the development of a more stringent international noise certification standard, but only if the EU repeals its regulation.

Although Northwest Airline's complaint provides the framework for the current international dispute concerning the EU's proposed rule, it is not the intent of this article to evaluate all the issues presented by Northwest Airlines. The purpose of this article is to review the current state of international aircraft certification under the Chicago Convention as related to aircraft noise regulation, and to evaluate the legality of the EU's regulation in light of the Chicago Convention. The legality of the regulation under international treaties, agreements, and rules related to trade and commerce will be left to other commentators.

II. BACKGROUND AND HISTORICAL PERSPECTIVE.

a. ICAO.

The international body responsible for developing aircraft noise certification standards is the International Civil Aviation Organization. ICAO was established near

¹⁷ (Hereinafter ICAO).

the end of World War II pursuant to the Chicago Convention. Signed on December 7, 1944, the Chicago Convention as an international treaty is the product of the International Civil Aviation Conference held in Chicago, Illinois, in late fall of 1944. The goal of the conferees, led by the United States and Great Britain, was to establish economic and technical standards to govern the anticipated post-war growth in international civil aviation. However, political differences between the United States and many of the allied powers resulted in a document addressing primarily the technical aspects of international civil aviation and lacking any substance regarding most economic issues.

The governing body of ICAO is the Assembly, which is comprised of representatives from every contracting State.¹⁸ Each contracting State is entitled to equal representation in the Assembly on a one State, one vote basis.¹⁹ The Assembly meets once every three years. The permanent body of ICAO is the Council, which reports to the Assembly, and is comprised of thirty-three members²⁰ selected for three year terms from those States that are of chief importance in air transport, are the largest contributors to the provision of facilities for international air navigation, and any other State if its inclusion will ensure that all major geographical areas of the world

¹⁸ Chicago Convention, *supra* note 15, at art 48(a).

¹⁹ Chicago Convention, *supra* note 15, at art 48(b).

²⁰ Chicago Convention, *supra* note 15, at art 50(a), as amended.

are represented on the Council.²¹ Several lesser bodies and committees provide technical assistance and expertise to the Council.

Possibly the single most important concept embodied in the Chicago Convention is the recognition of the complete and exclusive sovereignty of each State over the airspace above its territory.²² The conferees, although recognizing that each State must have an unqualified right to control its skies, also recognized that a high degree of uniformity and predictability in regulatory and technical standards would be necessary in order to foster post-war growth of international civil air transportation systems. Chapter VI of the Chicago Convention, encompassing Articles 37 through 42, was intended to provide the desired degree of uniformity and predictability.

The Chicago Convention requires that parties to the convention “collaborate in securing 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 such uniformity will facilitate and improve air navigation.”²³ In order to achieve the desired level of uniformity, the Chicago Convention further provides that ICAO adopt and amend, as necessary, International Standards and Recommended Practices and Procedures²⁴ regarding:

²¹ Chicago Convention, *supra* note 15, at art 50(b).

²² Chicago Convention, *supra* note 15, at art 1.

²³ Chicago Convention, *supra* note 15, at art 37.

- (i) Communications systems and air navigation aids, including ground markings;
- (ii) Characteristics of airports and landing areas;
- (iii) Rules of the air and air traffic control practices;
- (iv) Licensing of operating and mechanical personnel;
- (v) Airworthiness of aircraft;
- (vi) Registration and identification of aircraft;
- (vii) Collection and exchange of meteorological information;
- (viii) Logbooks;
- (ix) Aeronautical maps and charts;
- (x) Customs and immigration procedures;
- (xi) Aircraft in distress and investigation of accidents;

“and such other matters concerned with the safety, regularity, and efficiency of air navigation as may from time to time appear appropriate.”²⁵ ICAO fulfills its obligations through the adoption of technical annexes.

The Chicago Convention requires any State that finds it impracticable to comply with, or to conform its regulations to, the SARPs developed and adopted by ICAO, or that finds it necessary to adopt regulations or practices differing from the SARPs,

²⁴ (Hereinafter SARPs).

²⁵ Chicago Convention, *supra* note 15, at art 37.

immediately to notify ICAO of the differences between its own regulation or practice, and that adopted by ICAO.²⁶

b. Airworthiness Standards: General.

With respect to airworthiness standards, Articles 31, 33, 39 and 40 of the Chicago Convention combine to provide a distinct disincentive for the filing of notices under Article 38. Article 31 of the Chicago Convention requires that any aircraft used in international air navigation be issued a certificate of airworthiness issued or rendered valid by the State in which it is registered. Article 33 requires that all contracting States recognize as valid a certificate of airworthiness issued or rendered valid by the State in which the aircraft is registered, provided the standards pursuant to which the certificate was issued meet or exceed the minimum standards adopted by ICAO. Article 39 of the Chicago Convention requires that the certificate of airworthiness of any aircraft which fails to meet any standard adopted by ICAO shall contain an endorsement or attachment identifying the details of the non-compliance, and Article 40 prohibits the operation of any aircraft that is subject to an endorsement under Article 39 in international navigation, except with the permission of the foreign State or States into which flight will be conducted.

The Chicago Convention does not require that all States adopt identical airworthiness standards. Although the convention strongly urges a high degree of

²⁶ Chicago Convention, *supra* note 15, at art 38.

uniformity, it is expected that States will adopt their own standards. However, the combination of the ability of any State to ban use within its airspace of any aircraft that does not meet minimum standards adopted by ICAO, together with the requirement that all States recognize the certificates issued by any State that has standards that meet or exceed the standards adopted by ICAO, forces any State that wishes to use aircraft in international air transportation to adopt standards meeting or exceeding those of ICAO, and assures each State that if its standards meet or exceed those of ICAO, its aircraft will be permitted to operate in any other contracting State.

ICAO's first attempt at establishing an international minimum airworthiness standard, designated Annex 8, was adopted on March 1, 1949.²⁷ Annex 8 contained (i) general airworthiness procedures applicable to all aircraft, and (ii) comprehensive minimum airworthiness characteristics applicable to aircraft for which an Article 31 certificate of airworthiness would be issued. However, the comprehensive minimum airworthiness characteristics standards were applicable to only a single category of aircraft.²⁸ Rather than develop comprehensive standards for each category of aircraft, ICAO subsequently elected to abandon altogether the approach of setting comprehensive standards for various categories, and instead to adopt an airworthiness policy containing broad, general performance objectives applicable to all aircraft, and to require each State to develop its own comprehensive standards for

²⁷ ICAO, International Standards and Recommended Practices, Airworthiness, Annex 8 to the Convention on International Civil Aviation, (Mar. 1949) (hereinafter Annex 8). See also Resolution of Adoption for Annex 8, ICAO Council, Proceedings of the 6th Sess., ICAO Doc. 6957 (1950).

²⁸ *Id.*

each category of aircraft, or to adopt comprehensive standards developed by another contracting State. Annex 8 requires that:

“[a] Contracting State shall not issue or render valid a Certificate of Airworthiness for which it intends to claim recognition pursuant to Article 33 of the Convention on International Civil Aviation, unless the aircraft complies with a comprehensive and detailed national airworthiness code established for that class of aircraft by the State of Registry or by any other Contracting State. This national code shall be such that compliance with it shall ensure compliance with [the general performance criteria contained in Annex 8].”²⁹

In essence, by adopting an approach of setting minimum performance criteria and leaving development and adoption of more comprehensive national codes to the States, ICAO incorporated the respective national codes into Annex 8 by reference, and thereby raised each national code to the status of an international regulation.

c. Airworthiness Standards: Noise

Aircraft noise emissions and the effects on populations surrounding airports first became a serious problem with the advent of jet propulsion for civil airliners in 1952. ICAO noise and environmental standards have their genesis in the 1966 International

²⁹ Annex 8, *supra* note 27 at sec. 2.2.

Conference on the Reduction of Noise and Disturbance caused by Civil Aircraft,³⁰ 14 years after the introduction of the first jet transport, the ill-fated de Havilland Comet, and a mere seven years after the introduction of the first American built jet transport, the Boeing 707. Two years later, ICAO adopted Assembly Resolution 16-3, Aircraft Noise in the Vicinity of Airports, and thereby resolved, *inter alia*, to convene an international ICAO conference to consider the problem of aircraft noise in the vicinity of airports, and to establish standards for measuring and limiting aircraft noise.³¹ As a result of Assembly Resolution 16-3, late in 1969, the Special Meeting on Aircraft Noise in the Vicinity of Aerodromes convened in Montreal.³²

One of the results of the Special Meeting on Aircraft Noise in the Vicinity of Aerodromes was the establishment of the Committee on Aircraft Noise.³³ The purpose of the committee was to assist ICAO in developing noise certification standards for aircraft. Based on recommendations of the committee, and pursuant to Article 37 of the Chicago Convention, ICAO adopted Annex 16 to the Chicago Convention in April of 1971.³⁴ In 1981, ICAO expanded the scope of Annex 16

³⁰ Jeffrey Goh, *Problems of Transnational Regulation: A Case Study of Aircraft Noise Regulation in the European Community*, 23 Transp. L. J. 277, 281. (1995).

³¹ See ICAO, *International Standards and Recommended Practices, Environmental Protection*, Annex 16 to the Convention on International Civil Aviation, Vol. I, v, (3d ed. Jul. 1993).

³² Goh, *supra* note 30.

³³ Goh, *supra* note 30, at 284.

³⁴ ICAO, *International Standards and Recommended Practices, Aircraft Noise*, Annex 16 to the Convention on International Civil Aviation (Apr. 1971).

beyond noise certification standards to include certification standards regarding gaseous emissions, and the title of Annex 16 was changed to Environmental Protection to reflect the expanded scope of the Annex. Similarly, the name of the Committee on Aircraft Noise was changed in 1983 to the Committee on Aviation Environmental Protection³⁵ to reflect a widening scope of environmental concerns. CAEP is staffed by experts in aviation and environmental fields, and provides recommendations and advice to the ICAO Council and the ICAO Assembly.³⁶ Aircraft noise certification standards are now in Volume I of Annex 16.³⁷ Volume II of Annex 16 contains aircraft engine emissions certification standards.³⁸

From the beginning, Annex 16 was intended to establish performance standards for aircraft design and certification. As in Annex 8, ICAO has established minimum standards that aircraft must meet in order to be certified as airworthy. The purpose behind setting standards was to ensure that aircraft designed and built in the future were quieter. In other words, Annex 16 was intended to force advances in

³⁵ (Hereinafter CAEP).

³⁶ See Heather L. Miller, *Civil Aircraft Emissions and International Treaty Law*, 63 J. Air L. & Comm. 697, 714.

³⁷ ICAO, International Standards and Recommended Practices, Environmental Protection, Annex 16 to the Convention on International Civil Aviation, Vol. I, Aircraft Noise (3d ed. Jul. 1993) (hereinafter Annex 16, Volume 1).

³⁸ ICAO, International Standards and Recommended Practices, Environmental Protection, Annex 16 to the Convention on International Civil Aviation, Vol. II, Aircraft Emissions (2d ed. Nov. 1993) (hereinafter Annex 16, Volume 2).

quiet-engine technology, it was not intended to be used as a basis for operational restrictions designed to eliminate older aircraft from service. Economics and normal fleet replacement cycles were expected to result in a phasing out over time of noisier aircraft in favor of newer, quieter aircraft.

Chapter 2 of Annex 16, Volume 1,³⁹ contains noise emission standards for most subsonic jet-powered airplanes for which a certificate of airworthiness for the prototype aircraft was received and accepted by the certifying authority before October 6, 1977.⁴⁰ Chapter 2 also applies to certain jet-powered aircraft built prior to October 6, 1977; specifically, (i) each individual jet-powered aircraft powered by engines with a by-pass ratio of 2 or more that received its certificate of airworthiness on or after March 1, 1972, regardless of when the prototype version of such aircraft received its certificate of airworthiness,⁴¹ and (ii) each individual jet-powered aircraft powered by engines with a by-pass ratio of less than 2 that received its individual certificate of airworthiness on or after January 1, 1976, but only if the application for the certificate of airworthiness for the prototype version was accepted on or after January 1, 1976.⁴²

³⁹ (Hereinafter Chapter 2).

⁴⁰ Annex 16, Volume 1, *supra* note 37, at sec. 2.1.1.

⁴¹ Annex 16, Volume 1, *supra* note 37, at sec. 2.1.1(b).

⁴² Annex 16, Volume 1, *supra* note 37, at sec. 2.1.1(c).

Chapter 3 of Annex 16, Volume 1,⁴³ contains the standards applicable to subsonic jet-powered airplanes for which a certificate of airworthiness for the prototype aircraft was received and accepted by the certifying authority on or after October 6, 1977.⁴⁴ As one might expect, Chapter 3 standards are more stringent than Chapter 2 standards.

Although noise regulation in many jurisdictions is targeted at subsonic, jet-powered, transport category aircraft, Annex 16, Volume 1, is not limited to such aircraft; the Annex contains in various chapters standards applicable to supersonic airplanes,⁴⁵ propeller-driven airplanes,⁴⁶ short takeoff and landing (“STOL”) airplanes,⁴⁷ helicopters,⁴⁸ and auxiliary power units.⁴⁹ At the time Annex 16 was adopted, many of the aircraft then in the world’s commercial civil air transportation fleets could not meet the standards imposed by Annex 16. These aircraft are referred to as Non Noise Certificated (NNC) Aircraft. NNC Aircraft are also commonly referred to as Chapter 1 Aircraft, although such reference is somewhat misleading as Annex 16 does not specify any standards for NNC Aircraft, nor are they addressed in Chapter 1 of Annex 16, Volume 2.

⁴³ (Hereinafter Chapter 3).

⁴⁴ Annex 16, Volume 1, *supra* note 37, at sec. 3.1.1.

⁴⁵ Annex 16, Volume 1, *supra* note 37, at chapter 4.

⁴⁶ Annex 16, Volume 1, *supra* note 37, at chapters 3, 5, 6, and 10.

⁴⁷ Annex 16, Volume 1, *supra* note 37, at chapter 7.

⁴⁸ Annex 16, Volume 1, *supra* note 37, at chapters 8 and 11.

⁴⁹ Annex 16, Volume 1, *supra* note 37, at chapter 9.

III. AIRCRAFT NOISE CERTIFICATION UNDER ANNEX 16.

ICAO does not certify aircraft as meeting the requirements specified in Annex 16. Noise certification is the responsibility of the State in which an aircraft is registered. The State in which an aircraft is registered may grant or validate noise certification based on satisfactory evidence that the aircraft meets noise standards at least equal to the standards provided in Annex 16.⁵⁰ Noise certification may be documented by a Noise Certificate or other document issued by the State of registry, and required by such State to be carried on-board the aircraft during international operations. Documents evidencing noise certification must contain at least the following information:

- (i) State of Registry; nationality and registration marks;
- (ii) manufacturer's serial number;
- (iii) manufacturer's type and model designation; engine type and model designations; and, if applicable, propeller type and model designations;
- (iv) statement of any additional modifications incorporated for the purpose of compliance with the applicable noise certification standards (*i.e.*, *hushkits*);
- (v) the maximum mass at which compliance with the applicable noise certification standards has been demonstrated;

⁵⁰ Annex 16, Volume 1, *supra* note 37, at sec. 1.2.

- (vi) for airplanes for which application for certification of the prototype was submitted on or after October 6, 1977, and for helicopters for which application for certification of the prototype was submitted on or after January 1, 1985: the average noise level(s) at the reference point(s) for which compliance with the applicable standard has been demonstrated to the satisfaction of the certifying authority; and
- (vii) the chapter of Annex 16, Volume 1, according to which the aircraft was certificated.⁵¹

As previously stated, Chapter 2 contains noise emission standards for most subsonic jet-powered airplanes for which a certificate of airworthiness for the prototype aircraft was received and accepted by the certifying authority before October 6, 1977, and for certain other jet-powered aircraft built prior to October 6, 1977.⁵² Noise certification of aircraft to which Chapter 2 applies requires noise measurements at three different points: the *Lateral Noise Measurement Point*; the *Flyover Noise Measurement Point*; and the *Approach Noise Measurement Point*.⁵³

a. *The Lateral Noise Measurement Point.*

⁵¹ Annex 16, Volume 1, *supra* note 37, at sec. 1.3.

⁵² Annex 16, Volume 1, *supra* note 37, at sec. 2.1.1.

⁵³ Annex 16, Volume 1, *supra* note 37, at sec. 2.3.

The measurement at the *Lateral Noise Measurement Point*, also referred to as the *Sideline Measurement Point*, is taken during takeoff at the point on a line parallel to, and 650 meters (approximately 709 yards) from, the centerline of the takeoff runway, and extending beyond the departure end of the runway along the flight path of the aircraft, at which the noise level is the greatest.⁵⁴ Because the point on the line at which the noise level is greatest may vary among different aircraft types, several different measurements along the line of measurement may be required merely to identify the precise *Lateral Noise Measurement Point* for a specific aircraft type.

b. *The Flyover Noise Measurement Point.*

The measurement at the *Flyover Noise Measurement Point*, also referred to as the *Takeoff Measurement Point*, is also taken during takeoff, and is taken at a point that is directly below the flight path of the aircraft, on the extended centerline of the takeoff runway, and 6.5 kilometers (approximately 3.9 miles) from the point at which the aircraft started its takeoff roll.⁵⁵ The *Flyover Noise Measurement Point* is a more precisely defined point than the *Lateral Noise Measurement Point* in that it does not vary from aircraft type to aircraft type. All else being equal, an aircraft that is capable of a steeper climb gradient should produce a lower noise level measurement at the *Flyover Noise Measurement Point* than an aircraft that has a shallower climb gradient because the aircraft that has the steeper gradient would pass the *Flyover Noise*

⁵⁴ Annex 16, Volume 1, *supra* note 37, at sec. 2.3.1(a).

⁵⁵ Annex 16, Volume 1, *supra* note 37, at sec. 2.3.1(b).

Measurement Point at a higher altitude (i.e. at a greater vertical distance from the measuring device).

c. *The Approach Noise Measurement Point.*

As its name suggests, the measurement at the *Approach Noise Measurement Point* is taken during the final approach phase of flight mere moments prior to landing. The measurement is taken at a point that is directly below the flight path of the aircraft, on the extended centerline of the landing runway, and at the point where the aircraft is 120 meters (approximately 395 feet) above the ground.⁵⁶ Unlike the Flyover Noise Measurement Point, the Approach Noise Measurement Point does not necessarily favor aircraft that have superior performance characteristics because the measurement assumes a standard three degree (3°) approach gradient/glide slope, and consequently, all aircraft would descend through 120 meters at the same distance from the landing runway. Assuming level terrain, aircraft on a 3° glide slope would descend through 120 meters at a point 2 kilometers (approximately 1.2 miles) from the runway threshold.

Annex 16 provides for the measurement of aircraft noise emissions, and the Effective Perceived Noise Level (“EPNL”) produced by such emissions, in units of “EPNdB.” A detailed explanation concerning the physics, engineering, and human psychological factors accounted for by the EPNdB scale is beyond the scope of this

⁵⁶ Annex 16, Volume 1, *supra* note 37, at sec. 2.3.1(c).

article (as well as the comprehension of this author). For purposes of this article, it is sufficient to note only that the EPNdB scale is a single number evaluator of the subjective effects of aircraft noise on human beings.⁵⁷

The level of noise that a particular aircraft is permitted to produce is dependent on the weight of the aircraft. Subsonic jet-powered airplanes weighing 34,000 kilograms (approximately 74,800 lbs.) or less and certificated under Chapter 2 are limited to 102 EPNdB of noise emissions as measured at the *Lateral Noise Measurement Point* and the *Approach Noise Measurement Point*,⁵⁸ and 93 EPNdB of noise emissions as measured at the *Flyover Noise Measurement Point*.⁵⁹ The level of permitted noise emissions increases linearly with the logarithm of the weight of the aircraft at the rate of 2 EPNdB per doubling of the weight as measured at the *Lateral Noise Measurement Point* and the *Approach Noise Measurement Point*, and 5 EPNdB per doubling of the weight as measured at the *Flyover Noise Measurement Point*, up to a maximum noise emission level for aircraft weighing 272,000 kilograms (approximately 598,400 lbs.) of 108 EPNdB of noise emissions as measured at any point.^{60/61}

Table 1.

⁵⁷ Annex 16, Volume 1, *supra* note 37, at appendix 1, sec. 4.1.1.

⁵⁸ Annex 16, Volume 1, *supra* note 37, at sec. 2.4.1(a).

⁵⁹ Annex 16, Volume 1, *supra* note 37, at sec. 2.4.1(b).

⁶⁰ Annex 16, Volume 1, *supra* note 37, at sec. 2.4.1(a).

⁶¹ Annex 16, Volume 1, *supra* note 37, at sec. 2.4.1(b).

Aircraft	Lateral and Approach Noise	Flyover Noise Measurement
Weight	Measurement Point limits	Point Limit
34,000 kg. (74,800 lbs.) or less	102 EPNdB	93 EPNdB
68,000 kg. (149,600 lbs.)	104 EPNdB	98 EPNdB
136,000 kg. (299,200 lbs.)	106 EPNdB	103 EPNdB
272,000 kg. (598,400 lbs.) or more	108 EPNdB	108 EPNdB

Chapter 2 provides allowances for aircraft that meet the required standards at one or two, but not all of the measuring points. An aircraft that is not within the standards at all three measuring points may still meet Chapter 2 requirements if: (i) the excess emissions are no more than 3 EPNdB outside the limits at any single measuring point, (ii) if it is outside the limits at two measuring points, the sum of the

excess emissions at both points is no more than 4 EPNdB, and (iii) the excess emissions are completely offset by reductions in emissions at other measuring points.⁶² Thus, for example, an aircraft that exceeds the noise emissions standards by 1 EPNdB at two of the measuring points may still qualify for certification under Chapter 2 only if the noise emissions as measured at the third measuring point are 2 EPNdB below the limit for such point.

Noise certification procedures under Chapter 3 are similar to those under Chapter 2, albeit somewhat more complicated. The level of noise that a particular aircraft may produce is dependent not only on the weight of the aircraft, but also on the number of engines. The *Approach Noise Measurement Point* and the *Flyover Noise Measurement Point*, are defined in Chapter 3 substantially in the same manner as in Chapter 2.⁶³ The *Lateral Noise Measurement Point*, however, is taken on a line parallel to, and 450 meters (approximately 491 yards) from, the centerline of the takeoff runway, as opposed to 650 meters from the centerline as required by Chapter 2.⁶⁴

Aircraft weighing 35,000 kg (approximately 77,000 lbs.) or less and certificated under Chapter 3 are limited to 94 EPNdB of noise emissions as measured at the

⁶² Annex 16, Volume 1, *supra* note 37, at sec. 2.5.

⁶³ See, generally, Annex 16, Volume 1, *supra* note 37, at sec. 3.3.

⁶⁴ Annex 16, Volume 1, *supra* note 37, at sec. 3.3.1(a).

*Lateral Noise Measurement Point.*⁶⁵ The level of permitted noise emissions increases linearly with the logarithm of the weight of the aircraft up to 103 EPNdB for aircraft weighing 400,000 kilograms (approximately 880,000 lbs.) or more.

Table 2.

Aircraft	
<u>Weight</u>	<u>Lateral Noise Measurement Limit</u>
35,000 kg. (77,000 lbs.) or less	94 EPNdB
400,000 kg. (880,000 lbs.) or more	103 EPNdB

Aircraft weighing 35,000 kg (approximately 77,000 lbs.) or less are limited to 98 EPNdB of noise emissions as measured at the *Approach Noise Measurement Point*.⁶⁶ The level of permitted noise emissions increases linearly with the logarithm of the weight of the aircraft up to 105 EPNdB for aircraft weighing 280,000 kilograms (approximately 616,000 lbs.) or more.

⁶⁵ Annex 16, Volume 1, *supra* note 37, at sec. 3.4.1.1.

⁶⁶ Annex 16, Volume 1, *supra* note 37, at sec. 3.4.1.3.

Table 3.

Aircraft

Weight Approach Noise Measurement Limit

35,000 kg.

(77,000 lbs.) 98 EPNdB

or less

280,000 kg.

(616,000 lbs.) 105 EPNdB

or more

Aircraft weighing 385,000 kg (approximately 847,000 lbs.) or more and having (i) one or two engines, (ii) three engines, or (iii) four or more engines, are limited to 101 EPNdB, 104 EPNdB, or 106 EPNdB, of noise emissions, respectively, as measured at the *Flyover Noise Measurement Point*.⁶⁷ The level of permitted noise emissions in each case decreases linearly with the logarithm of the weight of the aircraft by 4 EPNdB per halving of weight down to 89 EPNdB.

Table 4.

⁶⁷ Annex 16, Volume 1, *supra* note 37, at sec. 3.4.1.2.

Aircraft	Flyover Noise Measurement Point Limit		
Weight	1 or 2 engines	3 engines	4 or more engines

approx.

20,200 kg. (44,440 lbs.) or less	89 EPNdB	89 EPNdB	89 EPNdB
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approx.

28,600 kg. (62,920 lbs.)	89 EPNdB	89 EPNdB	90 EPNdB
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48,125 kg. (105,875 lbs.)	89 EPNdB	92 EPNdB	94 EPNdB
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96,250 kg. (211,750 lbs.)	93 EPNdB	96 EPNdB	98 EPNdB
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192,500 kg. (423,500 lbs.)	97 EPNdB	100 EPNdB	102 EPNdB
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385,000 kg. (847,000 lbs.)	101 EPNdB	104 EPNdB	106 EPNdB
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or more

As in Chapter 2, Chapter 3 provides allowances for aircraft that meet the required standards at one or two, but not all of the measuring points. However, Chapter 3 is not quite as generous as Chapter 2. An aircraft that is not within the standards at all three measuring points may still meet Chapter 3 requirements if: (i) the excess emissions are no more than 2 EPNdB outside the limits at any single measuring point, (ii) if it is outside the limits at two measuring points, the sum of the excess emissions at the points is no more than 3 EPNdB, and (iii) the excess emissions are completely offset by reductions in emissions at other measuring points.⁶⁸

IV. LEGAL FRAMEWORK OF INTERNATIONAL AIRCRAFT NOISE REGULATION.

a. Articles 33 and 15 of the Chicago Convention: The Non-discrimination Principle and International Recognition of Airworthiness Certificates.

The EU's regulation, if implemented, would not only establish a regime that requires EU member nations to treat aircraft registered on their own respective registries differently from aircraft registered in non-EU member nations, but would also

⁶⁸ Annex 16, Volume 1, *supra* note 37, at sec. 3.5.1.

require each EU member nation to discriminate between foreign aircraft registered in other EU member nations, and foreign aircraft registered outside the EU.

The Chicago Convention provides that aircraft shall have the nationality of the State in which they are registered.⁶⁹ The Chicago Convention further states that

“[c]ertificates of airworthiness and certificates of competency and licenses issued or rendered valid by the contracting State in which the aircraft is registered, shall be recognized as valid by the other contracting States, provided that the requirements under which such certificates or licenses were issued or rendered valid are equal to or above the minimum standards which may be established from time to time pursuant to this Convention.”⁷⁰

The United States Court of Appeals, District of Columbia Circuit, in 1981, took the opportunity in British Caledonian Airways Limited v. Bond⁷¹ to interpret Article 33 of the Chicago Convention. The case was based on a refusal of the Administrator of the Federal Aviation Administration to recognize the airworthiness certificates of foreign registered DC-10 aircraft in the aftermath of the crash of an American Airlines DC-10 in Chicago in 1979.

⁶⁹ Chicago Convention, *supra* note 15, at art 17.

⁷⁰ Chicago Convention, *supra* note 15, at art 33.

⁷¹ 665 F.2d 1153 (1981).

On May 25, 1979, American Airlines Flight 191 crashed on takeoff. All 271 persons on board the aircraft were killed. Almost immediately, the investigation revealed that the cause of the crash had been a faulty engine pylon, i.e., the assembly that attaches the engine to the wing. The faulty pylon had failed causing the engine to separate from the aircraft severing electrical and hydraulic lines in the process, which, in turn, caused the retraction of the wing slats on the effected wing, and the subsequent loss of control. Within three days of the crash, the Administrator of the Federal Aviation Administration, following the recommendation of the National Transportation Safety Board, ordered inspections of all engine pylons on DC-10 aircraft registered in the United States, and suggested that foreign operators of DC-10s do so as well.

Shortly thereafter, the inspections revealed serious problems with other DC-10 aircraft related to the engine pylon, and it was determined that the problems were related to a procedure in use by some maintenance facilities to reinstall engines that had been removed for maintenance. The procedure could result in the engine being improperly mounted, and stresses resulting from the improper mounting resulted in metal fatigue, and, eventually, failure of the pylon. As a result of the discoveries, on June 5, 1979, the Administrator suspended the type certificate for the DC-10 model, revoked the individual airworthiness certificates of all DC-10s registered in the United States, and issued on an emergency basis Special Federal Aviation Regulation 40⁷² prohibiting foreign registered DC-10s from operating within the United States. Ten

⁷² (Hereinafter SFAR 40).

days later, European aviation officials and European DC-10 operators met to establish a special program for the inspection, maintenance, and recertification of Europe's DC-10 fleet. Another ten days later, Europe requested rescission of SFAR 40 and insisted that the airworthiness certificates issued by the European authorities be recognized under Article 33 of the Chicago Convention. The Administrator, however, refused to rescind SFAR 40 at that time, and consequently, British Caledonian Airways and several other European carrier filed suit on June 27, 1979.

The court held that the Administrator was not entitled to refuse to recognize the plaintiffs' certificates of airworthiness. According to the Court, Article 33 of the Chicago Convention is a self executing provision, and the Chicago Convention requires that one contracting State may refuse to respect the judgment of another contracting State that an aircraft is airworthy only where the latter does not apply standards at least equivalent to those established pursuant to the Chicago Convention. Consequently the Chicago Convention prohibits the Administrator from refusing to recognize the certificates of airworthiness of an aircraft registered in a foreign state absent a showing that such State does not apply standards at least equivalent to those established by ICAO.⁷³

The Chicago Convention establishes a non-discrimination principle that requires each contracting State to permit access to its airports to aircraft registered in foreign contracting States under the same conditions as those applied to aircraft on

⁷³ British Caledonian Airways Limited v. Bond, *supra* note 71 at 1164, 65.

their own registries.⁷⁴ As previously stated, the regulation contains a number of exemptions. Two such exemptions provide that (i) aircraft registered in the EU on April 1, 1999, would be exempt from the ban on use within the EU after April 1, 2002, provided only that the aircraft was actually operated within the EU prior to April 1, 1999,⁷⁵ and (ii) aircraft registered outside the EU would be exempt from the ban on use within the EU after April 1, 2002, provided that the aircraft was operated within the EU between April 1, 1995, and April 1, 1999, but the exemption would apply only for so long as the aircraft remains on the register of the nation where it was registered on April 1, 1999.⁷⁶ The European Council, in a statement that accompanies the Common Position, asserts that the exemptions are intended to ensure non-discriminatory treatment between aircraft registered in member nations and those registered in non-member nations.⁷⁷ The regulations do not, however, achieve non-discrimination.

If an aircraft is registered in an EU member State on April 1, 1999, and is operated by a an entity within the EU, it is a near certainty that such an aircraft will have been operated somewhere within the EU at some time prior to April 1, 1999, and would therefore be permitted to operate in any EU member nation after April 1, 2002. Conversely, aircraft registered outside the EU are not as likely to have been operated in an EU member nation within the four year time frame provided, and are therefore

⁷⁴ Chicago Convention, *supra* note 15, at art 15.

⁷⁵ Common Position, *supra* note 2 at art. 3.4.

⁷⁶ Common Position, *supra* note 2 at art. 3.3.

far more likely to be prohibited from operating within the EU after April 1, 2002. Further, aircraft registered outside the EU would lose their grandfathered status upon any change in State of registry. The result of such a regime would be to require two types of discrimination. First, EU member nations would be required to discriminate in the recognition of airworthiness certificates between otherwise identical aircraft based on whether the aircraft registration is foreign or domestic. Second EU member nations would also be required to discriminate in the recognition of airworthiness certificates between otherwise identical foreign aircraft based on whether the foreign registry is an EU member nation or a non-EU member nation. Such a situation clearly violates the international recognition principles provided by Article 33 and the non-discrimination principles embodied in Article 15.

Ms. Benedicte Claes suggests that the discriminatory provisions of the regulation are “justified in light of the single European aviation market.”⁷⁸ Ms. Claes asserts that the EU’s progress toward the creation of a single European market without internal borders justifies EU member nations in discriminating in favor of air carriers from other EU member nations over air carriers from non-member nations. Ms. Claes makes the points that that the EU should be treated as a single entity for purposes of Article 15 of the Chicago Convention, that the fact that each EU member nation maintains its own civil aircraft registry should be ignored and treated as

⁷⁷ See, generally, Common Position, *supra* note 2 at *Statement of Council's Reasons*.

⁷⁸ Benedicte Claes, *Aircraft Noise Regulation in the European Union: Next US-EU Trade Dispute About Hush-Kits?* _____ (1999).

something of an historical anomaly currently maintained for convenience sake, and that the EU's fifteen civil aviation registries should be treated as a single EU registry for purposes of the regulation.⁷⁹

Arguments based on a single European aviation market are initially compelling. The United States itself serves as an obvious analogy. The United States is a single entity comprised of fifty autonomous States, i.e., a single market comprised of several States. Although the United States does not share the EU's problem of having numerous civil aviation registries, aircraft can move across internal borders freely. Thus analogizing the European aviation market to the United States aviation market, the obvious corollary is that aircraft owned by Europeans should be capable of being bought and sold, and transferred, within the European market as freely as aircraft owned by Americans can be bought and sold, and be transferred, within the United States market.

Such arguments, however, have two serious flaws. First, the arguments do not address the first type of improper discrimination discussed above, i.e., as between foreign and domestic. Second, while the arguments do attempt to address the second type of improper discrimination, i.e., as between foreign aircraft registered in EU member nations and foreign aircraft registered in non-EU member nations, the arguments ignore the fact that the EU is neither a member of ICAO, nor a party to any of the bilateral air services agreements that bind its various member nations. The EU,

⁷⁹ *Id.*

through the collective rights of its fifteen member nations, currently enjoys fifteen votes in the ICAO Assembly, _____ of the thirty-three votes in the ICAO Council, and holds seven of the sixteen seats on the Committee of Aviation Environmental Protection. Claims by the EU that it should be treated as a single market for purposes of ICAO are disingenuous in the absence of a move towards single nation status in ICAO. Acceptance of any claim that the EU should be treated as a single market must be coupled with a requirement that each individual EU member nation withdraw its membership in ICAO and that the EU itself become a signatory to the Chicago Convention. Similarly, if the EU desires to be treated as a single aviation market by the rest of the world, each individual EU member nation should renounce all bilateral air services agreements to which it is a party, and the EU itself should negotiate bilateral air services agreements with non-EU member nations that would be uniformly binding on all its member nations. The foregoing actions would place the EU and its single aviation market on an equal footing with other single-nation markets, such as the United States, throughout the world, i.e., one State, one vote in the ICAO Assembly. The EU, however, is not likely to accept such a drastic reduction in the collective power of its member nations in ICAO any time soon, and each EU member nation can be expected to insist in the strongest possible terms that it has a individual right to ICAO membership. Thus it appears that the single European aviation market argument is little more than an attempt by the EU to have its proverbial cake, and eat it too. That is, the EU appears prepared to argue for single entity status when it benefits the EU, e.g., that the EU should be treated as a single aviation market for purposes of Article 15 of the Chicago Convention, and to insist that each member

nation is an autonomous State when single entity status would be a detriment to the EU, e.g., with respect to voting power in ICAO.

b. The Threat to Future Advances in Aircraft and Aircraft Engine Design.

Each EU member nation is a signatory to the Chicago Convention. As signatories to the Chicago Convention, each of the EU member nations is obligated to recognize the certificates issued by the United States and other contracting States. If adopted, the regulation would directly conflict with that obligation, and may seriously undermine future technological advances in aircraft and aircraft engine design technology by undermining confidence that standards adopted by ICAO will be recognized worldwide.

No EU member nation has asserted that hushkitted or re-engined aircraft certified by the United States or other ICAO contracting States do not meet Chapter 3 standards. Rather, the EU's regulation would ban some hushkitted and re-engined aircraft based on an apparent assertion that such aircraft do not have a great enough margin of compliance to satisfy special interests within the EU. As signatories to the Chicago Convention, each EU member nation participates in the establishment of international aircraft certification standards, and has agreed to the standards set forth in Annex 16. However, the EU now proposes to superimpose a design standard on top of the existing standards set forth in Chapter 3 and agreed to by each member nation of the EU at a point in time when most of the world's airlines have already

completed the process of planning for total Chapter 3 compliance, and have invested hundreds of millions of dollars in technologies designed to meet Chapter 3 standards. If adopted, the EU's regulation would result in a situation in which foreign registered aircraft that meet the most stringent standards established by international consensus would no longer necessarily be welcome within the EU. By adopting the regulation, and the design standards contained therein, the EU would, in essence, be forcing its member nations to reject their obligations under Article 33 of the Chicago Convention and require them to recognize as valid only those certificates that not only meet the minimum ICAO standards, but also the additional standards established by the EU. In doing so, the confidence in a regime of uniform international standard setting is undermined, and the likelihood that other States will elect to superimpose additional standards suited to their own particular interests on top of Chapter 3 standards increases. With each diverging set of standards adopted by individual States, international confidence in the ICAO standards setting process may be further eroded, with the consequence that the aviation industry and many of the world's nations may become unwilling to pursue further advances in aircraft and aircraft engine technology.

c. The United States Phase Out of Chapter 2 Aircraft and The Airport Noise and Capacity Act of 1990.

In their joint response to the complaint filed by Northwest Airlines, British Airways, PLC,⁸⁰ and Virgin Atlantic Airways, Limited,⁸¹ assert that the United States

⁸⁰ (Hereinafter British Airways).

will be in violation of Article 33 of the Chicago Convention as of January 1, 2000, when the United States' ban on Chapter 2 aircraft takes effect because the phase-out date is more than two (2) years ahead of the final phase out date recommended by ICAO.⁸² Lufthansa German Airlines⁸³ makes a similar assertion.⁸⁴ The United States Chapter 2 phase-out date of January 1, 2000, was set by the Airport Noise and Capacity Act of 1990,⁸⁵ section 9308.⁸⁶ The assertions of British Airways, Virgin Atlantic, and Lufthansa are incorrect.

As previously stated, Annex 16 was originally conceived as a certification standard and was not intended to be used for the purpose of establishing operational limitations. However, recognizing the concerns of many ICAO contracting states regarding aircraft noise near major airports, ICAO adopted a policy addressing operational restrictions on aircraft that do not meet Chapter 3 Standards. This policy, currently embodied in ICAO Assembly Resolution 31-11, Appendix D,⁸⁷ implicitly recognizes the right of contracting states to put in place operating restrictions which effectively phase-out use of aircraft that do not meet Chapter 3 standards. Appendix

⁸¹ (Hereinafter Virgin Atlantic).

⁸² Joint Answer of British Airways, PLC, and Virgin Atlantic Airways, Limited, Docket OST-99-5011-4 at 5, filed Feb. 5, 1999 (hereinafter Joint Answer).

⁸³ (Hereinafter Lufthansa).

⁸⁴ Answer of Lufthansa German Airlines, Docket OST-99-5011-5 at 3, filed Feb. 5, 1999.

⁸⁵ 101 P.L. 508 (1990) (hereinafter ANCA).

⁸⁶ Codified at 49 U.S.C. § 47528.

⁸⁷ Originally adopted as ICAO Assembly Resolution 28-3.

D of Assembly Resolution 31-11 represents a compromise balancing the interests of airlines, aircraft manufacturers, and developing countries, against the environmental concerns of States that have serious airport noise problems.⁸⁸ The compromise contained in Assembly Resolution 31-11 recognizes the rights of States to phase out Chapter 2 aircraft, and provides recommended, non-binding time parameters for implementing any phase-out of Chapter 2 aircraft. Assembly Resolution 31-11 does not address or contemplate any restrictions whatsoever on aircraft that comply with the standards set forth in Chapter 3. Although Section 9308 of ANCA requires completion of the phase out of Chapter 2 aircraft more than 2 years ahead of the ICAO guidelines contained in Assembly Resolution 31-11, it also provided for a 10 year phase out period, which is 3 years greater than the 7 year period recommended by ICAO in Assembly Resolution 31-11. Section 9308 of ANCA therefore does not violate any operational standard. Consequently, it is a disingenuous argument to assert that the United States Chapter 2 phase-out date constitutes a violation of Article 33 of the Chicago Convention.

British Airways' and Virgin Atlantic's assertion that 14 C.F.R. § 91.873 violates the Chicago Convention is more credible, however.⁸⁹ Section 91.873, which substantively mirrors ANCA § 9308(b)(1), provides that United States air carriers may apply for a waiver to operate Chapter 2 aircraft in the United States on and after

⁸⁸ R.I.R. Abeyratne, *Legal and Regulatory Issues in International Aviation* at 287, Transnational Publishers, Inc. (1996).

⁸⁹ Joint Answer, *supra* note 82, at 6.

January 1, 2000 under certain limited circumstances.⁹⁰ The waiver provisions appear to facially discriminate between United States and foreign air carriers in that the foreign air carriers are not afforded the same opportunity to apply for a waiver. Northwest Airlines responded to British Airways' and Virgin Atlantic's assertion by stating that "ANCA's legislative history reveals that the omission of foreign carriers in the statute was nothing more than a technical drafting error. In fact, on January 19, 1999, legislation was introduced to correct this error."^{91/92} Northwest may be overstating its case.

The legislative history of ANCA neither indicates a specific intention on the part of Congress to exclude, nor to include, foreign air carriers from the applicability of the waiver provisions. The absence of an affirmatively stated intention to exclude foreign air carriers is not sufficient to assume that no such intention existed. Northwest's technical drafting error theory is, however, plausible. Various speakers quoted in the Congressional Record appear to use the terms "airline(s)" and "air carrier(s)" generically and interchangeably, without specific reference to foreign or United States flags, and, in fact, ANCA⁹³ refers to "air carriers" without specific reference to whether the air carriers are foreign or domestic. The technical drafting error, if Northwest Airline's assertion is to be accepted, arises from the fact that ANCA specifies that the

⁹⁰ 14 C.F.R. § 91.873

⁹¹ Reply of Northwest Airlines, Inc., OST Docket No. OST-99-5011-25 at 9, filed February 12, 1999.

⁹² Air Transportation Improvement Act, S. 82, 106th Cong. § 302 (1999). Section 302 was deleted from S. 82 during markup on Feb. 11, 1999, in response to adoption by the EU of the Common Position.

⁹³ ANCA, *supra* note 85, at § 9308(b)(1).

term "air carrier" shall have the same meaning given to the term under § 101 of the Federal Aviation Act of 1958.⁹⁴ The Federal Aviation Act defines an "air carrier" as "a *citizen of the United States* undertaking by any means, directly or indirectly, to provide air transportation."⁹⁵ A common legal maxim holds that Congress is presumed to have intended what it enacted, and thus we must assume that Congress was conscious of the fact that the term "air carrier" adopted by it in ANCA excluded foreign flag carriers when it enacted ANCA. However, legal presumptions aside, it is at least plausible that Congress erred and was not actually aware that it had discriminated between United States and foreign air carriers when it enacted ANCA. In any event, it is not relevant whether Congress intended to discriminate. The fact remains that ANCA facially discriminates against foreign air carriers in a manner that potentially violates the non-discrimination provisions of the Chicago Convention.

V. CONCLUSION.

The EU regulation, if ultimately given effect, would unilaterally establish design-based aircraft certification standards in a technical area best suited to internationally developed performance-based standards. The EU asserts that the regulation is a necessary and proper means of protecting the environment around Europe's airports. Yet the EU has proffered no data supporting its contentions that the regulation would achieve environmental benefits, and, in fact, the contrary may prove true; the

⁹⁴ ANCA, *supra* note 85, at § 9308(h)(2).

⁹⁵ 49 U.S.C. 40102(a)(2).

regulation, if adopted, may result in a greater noise problem for Europe's airports. The EU's claims that the regulation is necessary to protect the environment around Europe's airports is disingenuous, and appears to be little more than a thinly disguised effort at industrial protectionism. ICAO is the proper forum for establishing international aircraft noise certification standards; if the EU is truly interested in establishing a more stringent noise standard, working through the ICAO system would be the most productive means of achieving greater environmental protection over the long term. Implementation of the regulation could threaten the integrity of the present system of international aircraft certification recognition, and non-discriminatory access to airports, established by the Chicago Convention, as well as the ability of the international community to achieve further advances in aircraft and aircraft engine design.