

Safety Regulation Of The Concorde Supersonic Transport: Realistic Confinement Of The National Environmental Policy Act*

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INTRODUCTION

Rarely if ever in the past has government provided the forum for so dramatic a confrontation between man's technological ingenuity and his concern for environmental quality as in the controversy over the Concorde Supersonic Transport. Depending upon the observer's point of view; Concorde has been depicted as both an "elegant"¹ delta-wing airplane and a "bird of prey;"² as "one of the most positive steps forward made in aviation . . . since the industrial revolution"³ and "the Edsel of the airways;"⁴ as a symbol of progress and a symbol of environmental degradation.

On February 4, 1976, supporters of Concorde scored a partial victory when Secretary of Transportation William T. Coleman, Jr. issued a 61-page decision authorizing British Airways and Air France to conduct a 16-month demonstration of Concorde service with four flights per day to

* The views contained herein are those of the author and not the Department of Transportation.

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1. A. WILSON, *THE CONCORDE FIASCO* 154 (Penguin ed. 1973).

2. *The New York Times*, February 24, 1976, at 34, col. 5 (Letter to the Editor from John J. Butler, Chairman, Heathrow Association for the Control of Aircraft Noise).

3. C. GARDNER, *CONCORDE: THE QUESTIONS ANSWERED* 1 (promotional booklet published by British Aircraft Corporation, U.S.A.).

4. *New York and the Concorde*, *The Washington Post*, February 27, 1976, at A24, col. 2 (editorial).

John F. Kennedy International Airport, New York, and two flights per day to Dulles International Airport, outside of Washington, D.C.⁵ Secretary Coleman's decision was based on an extensive environmental review under the National Environmental Policy Act of 1969 (NEPA)⁶ which centered around the preparation and release by the Department's Federal Aviation Administration (FAA) of a four-volume environmental impact statement. Like the public debate which surrounded—and continues to surround—Concord, the impact statement concentrated on four questions involving the potential ecological consequences of Concorde operations to and from the United States: (1) How would Concorde flights affect the cleanliness of the air? (2) How would Concorde flights affect the consumption of scarce fuel resources? (3) Would the emission of Concorde exhausts in the stratosphere increase the incidence of skin cancer by reducing the density of the earth's ozone layer? and (4) What would be the noise impact of Concorde flights on the residents of communities surrounding Kennedy and Dulles Airports?⁷

It was, therefore, ironic that when the Environmental Defense Fund (EDF) petitioned the United States Court of Appeals for the District of Columbia to overturn Secretary Coleman's decision authorizing a 16-month Concorde demonstration, EDF rested its case not on the potential threats of air pollution, fuel inefficiency, ozone depletion and noise on which the nation's attention had been fixed but on the aircraft's safety. EDF contended that several serious questions cast doubt on Concorde's operational safety. Since the physical safety of passengers in the air and persons on the ground was an aspect of "the quality of the human environment,"⁸ the group argued, the FAA's failure to discuss these safety questions in its environmental impact statement violated NEPA.

Having heard oral argument the same day, the Court of Appeals on May 19, 1976, issued its decision in *Environmental Defense Fund v. DOT*⁹ and the other cases which had been consolidated with it:¹⁰

5. Concorde flights to Dulles Airport, which is owned and operated by the federal government, began May 24, 1976. The start of Concorde service to Kennedy Airport has been halted as of this writing by a resolution of the Port Authority of New York and New Jersey, airport proprietor, barring Concorde service until SST operations have been conducted for six months at Dulles. British Airways and Air France have challenged this restriction in a suit filed in the United States District Court for the Southern District of New York. *British Airways Bd. & Compagnie Nationale Air France v. Port Auth. of New York & New Jersey*, No. 76-1276 (S.D.N.Y., filed March 17, 1976). Scheduled commercial Concorde service had been inaugurated on January 21, 1976 with British Airways' flights from London to Bahrain and Air France's flights from Paris to Rio de Janeiro.

6. 42 U.S.C. §§ 4321 *et seq.* (1970).

7. See notes 15-22 and accompanying text, *infra*.

8. NEPA § 102(2)(C), 42 U.S.C. § 4332(2)(C) (1970).

9. No. 76-1105 (D.C. Cir., May 19, 1976).

10. Additional petitions for review were filed by the State of New York (contending that the

The Secretary has decided, for the reasons stated in his opinion, "to permit British Airways and Air France to conduct limited scheduled commercial flights into the United States for a period not to exceed sixteen months under limitations and restrictions set forth [in that opinion]." The purpose of the trial period is to provide additional information to assist the Secretary in his evaluation of the "environmental, technological, and international considerations" which continued operation of Concorde into this country would involve.

This court is in agreement with the Secretary that in the circumstances of this case his order for such a trial period is within his authority and competence, and is not arbitrary or capricious or otherwise in violation of law.

By this brief order, the Court of Appeals resolved all issues, including the issue of Concorde safety, in favor of the Government. Yet its failure to produce an accompanying opinion leaves its reasoning and the scope of its holding to speculation. The purpose of this article is to analyze whether aircraft safety is an "environmental" question within the meaning of NEPA and to review the legal bases on which the court may have concluded that it is not.

BACKGROUND

The Concorde Supersonic Transport was developed as a joint project of the British and French governments and their respective aircraft manufacturers and contractors. Although the two countries had initially given independent consideration to the development of a civil supersonic aircraft in the 1950's, they decided in 1961 to combine their efforts. In November, 1962, the Anglo-French Concorde Treaty was signed, leading to cooperation in the design and manufacture of the aircraft between British Aircraft Corporation and Aerospatiale France.

Despite aviation's experience with supersonic military aircraft for over twenty years, the airframe and engine design approved in 1965 for commercial use represented a new amalgam of trade-offs between the competing demands of economics and aeronautics. If too large, Concorde would suffer a "range" penalty rendering it incapable of flying supersonically over the long North Atlantic route for which its creators perceived a valuable market, or a "payload" penalty in the form of fewer available seats for fare-paying passengers. If too small, the attendant

Secretary's decision violated NEPA's "substantive mandate" by giving insufficient weight to environmental values), and the counties of Fairfax and Loudoun, Virginia and Nassau, New York (contending that Concorde operations to the United States could not be legally authorized prior to the issuance by FAA of noise standards for supersonic transports under section 611 of the Federal Aviation Act, 49 U.S.C. § 1431) (1970). The Aviation Consumer Action Project intervened (arguing that under section 610 of the Federal Aviation Act, 49 U.S.C. § 1430 (1970), Concorde was required to obtain either a U.S. airworthiness certificate or a waiver of this requirement before operating to the United States).

limitations on the capacity of the aircraft would threaten the profitability of operations or force the fare so high as to price the aircraft's services out of the market.

The Concorde which ultimately emerged is a four-engine delta-wing turbojet aircraft capable of carrying approximately 100 to 125 passengers—or a payload of 25,000 pounds—over a range of approximately 4,000 miles. It can cruise at approximately 1,350 miles per hour, or approximately twice the speed of sound, at an altitude of between 50,000 and 60,000 feet and reduce the seven-hour subsonic travel time between Washington and London by three hours and thirty minutes.¹¹ The current fair for Concorde service between the United States and Europe is 20% above the comparable first-class fare on subsonic aircraft. With a pricetag of \$60-62 million each, nine of the sixteen production aircraft which are either completed or in the course of construction have been sold; five to British Airways and four to Air France.

The first prototype Concorde (001) and (002) flew in 1969. These were followed by the two pre-production aircraft (01 and 02). Subsequent testing included a series of flights in 1973-1975 to Boston, Miami, Dallas-Fort Worth, Washington, D.C., Los Angeles, Anchorage, Fairbanks and other U.S. cities.

On October 10, 1975 and December 5, 1975, the French and British governments, respectively, issued certificates of airworthiness to the Concorde. The Concorde's manufacturers' application to the FAA for a U.S. type certificate—the prerequisite to purchase of the plane by a U.S. carrier¹²—had been pending since 1965. However, the European certificates qualified British Airways and Air France to apply to the FAA in 1975 for permission to make two scheduled flights each per day to Kennedy Airport and one scheduled flight each per day to Dulles Airport.¹³

11. Concorde is 204 feet long with a wing span of 84 feet and an overall height of 40 feet. It is powered by four Rolls-Royce (Bristol) Snecma Olympus 593 engines which are mounted in pairs in underwing nacelles and equipped with afterburners for takeoff and acceleration to supersonic speed. The aircraft is constructed principally of aluminum alloy, with titanium and steel used in power-plant areas and in landing-gear components.

12. Federal aviation regulations provide that no United States air carrier may operate an aircraft unless that aircraft is registered in the United States and carries a current airworthiness certificate issued by FAA. 14 C.F.R. § 121.153 (1976). An FAA airworthiness certificate will be issued upon a finding that the individual aircraft conforms to its underlying type certificate and is in condition for safe operation. Federal Aviation Act § 603(c), 49 U.S.C. § 1423(c) (1970). The requirements for type certificates are set out in Federal Aviation Act § 603(a), 49 U.S.C. § 1423(a) (1970).

13. Technically, the decision before the Secretary of Transportation was whether to approve amendment of the "operations specifications" of British Airways and Air France. Federal aviation regulations, 14 C.F.R. Part 129 (1976), require that foreign air carriers intending to conduct commercial operations in the United States submit for FAA approval a list including the

Anticipating that this authorization could constitute "major Federal action significantly affecting the quality of the human environment"¹⁴ within the meaning of NEPA, the FAA undertook an environmental review which included a draft environmental impact statement, released for public comment on March 3, 1975, hearings on the draft, a final environmental impact statement released on November 13, 1975, and a final public hearing which was personally chaired by Secretary Coleman on January 5, 1976.

Even before the draft environmental impact statement had been released, public debate began to center on the ecological concerns which would ultimately lead Secretary Coleman to describe the Concorde decision as "difficult and close."¹⁵ First and foremost was the airplane's noise. To observers buoyed by the significant strides the United States had made toward solving the aircraft noise problem through the introduction of the quieter widebodies¹⁶ and the requirement that all new subsonic jets manufactured in this country meet federally-prescribed noise emission standards,¹⁷ Concorde was anathema. Although there was no danger of sonic boom (civil supersonic flight over the United States is prohibited)¹⁸ the noise emitted by Concorde at subsonic speed posed a potential environmental threat. Tests indicated that while on landing the Concorde was slightly quieter than a B-707, on take-off it was twice as loud as a B-707, four times as loud as a B-747 and eight times as loud as a DC-10.¹⁹ Moreover, the low-frequency rumble of the Concorde made a

types of aircraft to be flown, the airports to be served, and the routes and flight procedures to be followed. Up until the time that British Airways and Air France submitted their amendments to add the proposed Concorde operations to their operations specifications, the approval of such applications by FAA had been virtually routine. The unique circumstances surrounding the Concorde application caused a departure from this pattern.

14. NEPA § 102(2)(C), 42 U.S.C. § 4332(2)(C) (1970).

15. THE SECRETARY'S DECISION ON CONCORDE SUPERSONIC TRANSPORT 59 (February 4, 1976) [hereinafter cited as SECRETARY'S DECISION].

16. The B-747, DC-10 and L-1011.

17. See 14 C.F.R. Part 36 (1976) (This regulation allows civil flight at supersonic speeds over the United States only for testing purposes).

18. 14 C.F.R. § 91.55 (1976).

19. 1 Final Environmental Impact Statement on Concorde Supersonic Transport Aircraft VII-1 (1975).

A variety of methodologies for the measurement of noise have been developed. Two significantly different noise descriptions employed in the Concorde Environmental Impact Statement are the "single-event" method, which measures the average noise of a single fly-over in units of EPNdB (effective perceived noise level in decibels), and the "noise exposure forecast" method, which measures the noise impact of the total aircraft operations conducted at an airport each day. On a single-event basis, tests showed that Concorde subjected 47.6 square miles of land to brief noise events of at least 100 EPNdB—the noise of heavy city traffic at 25 feet—as compared with 7.49 square miles and 2.91 square miles for the B-707 and B-747, respectively. On a "noise exposure forecast" basis, however, tests indicated that little change in cumulative noise impact would be effected by the proposed Concorde operations. Nevertheless, the

qualitative as well as quantitative difference.²⁰

Environmentalists were also disturbed by the claim that nitrogen in the Concorde exhaust would reduce the concentration of ozone in the stratosphere, permitting more ultraviolet radiation to reach the earth's surface and thereby causing an increase in the rate of nonmelanomic, or non-fatal skin cancer.²¹ Still others, including the Federal Energy Administration, criticized the relative fuel inefficiency of Concorde as compared with subsonic jet transports and urged that for this reason

Concorde Environmental Impact Statement concluded: "The perceived loudness of the Concorde will be annoying. It will interfere with communications and may cause startle." *Id.*

20. Concorde sound has five times the low frequency content, and therefore five times the vibrational effect, of subsonic jet noise. This is because low frequency sound dissipates less rapidly in the atmosphere and more closely matches the resonant vibrations of man-made structures.

Tests found that while the vibrations caused by Concorde overflight would generally be barely perceptible, they might on occasion be sufficiently strong to cause "some household rattle of dishes, pictures, lamps and other bric-a-brac being disturbed." 1 Concorde Environmental Impact Statement, *supra* note 19, at VI-97.

21. Analysis of this question in the environmental impact statement was based primarily on reports by DOT's Climatic Impact Assessment Program (CIAP), CIAP REPORT OF FINDINGS: THE EFFECT OF STRATOSPHERIC POLLUTION BY AIRCRAFT (1974), and the National Academy of Sciences (NAS), ENVIRONMENTAL IMPACT OF STRATOSPHERIC FLIGHT (1975). Both the CIAP and NAS studies found the causal link between Concorde flight and increased skin cancer clouded by theoretical uncertainties and numerous other causes of ozone variation. Because the effects of natural variations in the thickness of the ozone layer—caused principally by solar activity—far overshadow manmade effects, the linkage between Concorde flights and ozone reduction is difficult to confirm empirically. The World Meteorological Organization concluded that 30-50 SSTs would not have an effect on the ozone layer "that would be significant or that could be distinguished from natural variations." Statement of the World Meteorological Organization on Modifications of the Ozone Layer Due to Human Activities, Nov. 26, 1975. The situation is further complicated by the fact that aircraft are among more than 30 possible causes of change in ultraviolet radiation, including nuclear testing, volcanic eruptions, and fluorocarbons from aerosol sprays.

Assuming the validity of the theory of ozone reduction, the Concorde Environmental Impact Statement, using data from the CIAP report, calculated that six daily Concorde flights operated over a 30-year period could reduce the density of the ozone layer by about .04 percent, resulting in the addition of approximately 200 new cases of nonmelanomic skin cancer to the current rate of 250,000 per year in the United States. Concorde Environmental Impact Statement, *supra* note 19, at VI-120.

Secretary Coleman acknowledged this possibility for the purposes of his decision. SECRETARY'S DECISION, *supra* note 15, at 37. In resolving, nonetheless, to approve a 16-month Concorde demonstration, Coleman placed considerable weight on three factors. First, the estimate of 200 new cases of non-fatal skin cancer was based on 30 years of continuous Concorde operations; the CIAP report estimated, however, that technology could be developed within 10-15 years to reduce by half the amount of nitrogen oxides in Concorde's exhaust, although at a cost of many millions. Second, because of rapid dispersion of stratospheric impurities throughout the hemisphere, Concorde operations anywhere in the northern hemisphere would affect the ozone layer covering the United States. Finally, among the many other potential man-made causes of ozone reduction were several that were far more deleterious than the proposed Concorde flights but which had gone so far unchecked. Fluorocarbons from aerosol sprays and refrigerants, for example, were estimated to cause 12-50 times as much ozone reduction as the proposed Concorde flights. SECRETARY'S DECISION, *supra* note 15, at 37-40.

Concorde flights to the United States should not be authorized.²²

In addition to these environmental attacks, however, came a number of claims that the Concorde simply was not a safe airplane. Given the necessity for absolute assurance that any new aircraft is safe, history made the developers of the Concorde especially sensitive to claims of flaws. Just as they are pioneering today in supersonic flight, the British pioneered in the early 1950's in subsonic flight with the development of the de Havilland Comet, the world's first jet airliner.

Like the Concorde, the Comet's main attraction was speed. The aircraft's revolutionary ability to cruise at 500 miles per hour led one observer to describe it as "a sort of Wellsian time-machine."²³ Boasted one executive of British Overseas Airways Corporation (the predecessor of British Airways): "When B.O.A.C. gets Comets into service, New Yorkers will be able to take a swim in Bermuda and dry themselves at home."²⁴ To operate efficiently and attain such speed, however, it was necessary for a jet transport such as the Comet to cruise at much higher altitudes than piston-engine aircraft, about 45,000 feet. At this altitude the atmosphere is extremely thin, necessitating cabin pressurization. The strains of pressurization required, in turn, that the fuselage be very strong. But the need to accommodate enough fuel for Comet's thirsty jet engines and enough passengers to turn a profit placed a premium on lightness of construction. To solve this dilemma, de Havilland decided on a very light skin made of aluminum alloy which was glued, rather than riveted, to the plane's frame, following the technique which had been used in several slower and lower-flying aircraft.²⁵

22. The relative fuel inefficiency of Concorde in "per seat-mile" terms is illustrated by the following comparison of fuel consumption for a 3,000 nautical mile trip:

<i>Aircraft</i>	<i>Passenger Capacity</i>	<i>Fuel Pounds</i>	<i>Gallons</i>
Boeing 707-300	145	95,500	13,071
DC-8-61	200	94,500	13,500
Boeing 747	375	170,000	24,285
DC-10	250	98,000	14,000
Concorde	110	146,000	20,857

Source: SECRETARY'S DECISION, *supra* note 15, at 29. However, Secretary Coleman noted in his decision that Concorde's relative fuel efficiency could improve on a "per passenger mile" basis if Concorde operated with substantially higher load factors than subsonic jets. SECRETARY'S DECISION, *supra* note 15, at 29-30. Indeed, high load factors appeared to be a prerequisite to economically viable Concorde operations since the direct operating cost of the Concorde per seat mile was three to four times as much as that of current subsonic jets. Concorde Environmental Impact Statement, *supra* note 19, Vol. I at III-3.

23. D. DEMPSTER, *THE TALE OF THE COMET* 105 (1958).

24. T. HEWAT & WATERTON, *THE COMET RIDDLE* 38 (1955).

25. *Id.* at 30.

The solution proved illusory. In quick succession following their entry into service, four Comets operated by B.O.A.C. crashed during 1953 and 1954, killing a total of 111 persons.²⁶ After the entire fleet had been grounded, tests revealed a metal fatigue failure in the fuselage. Although the necessary design changes were accomplished and the plane was eventually reintroduced into commercial service, sales never regained pace with the American B-707 and DC-8. The Comet program was a failure.²⁷

The story of the Comet was not the only reminder to developers of the Concorde of the unforeseen hazards wrought by radical design changes. Even as the Concorde was in the final stages of development, the world was shocked by the crash of the Soviet Union's TU-144, the Russian version of the SST, at the Paris Air Show in June, 1973. In full view of 300,000 spectators at Le Bourget Airport, the disaster resulted in the deaths of all six crew members and seven persons on the ground.²⁸ While it may have been apparent to aeronautical engineers familiar with the design differences that the crash of the TU-144 was not an omen for the Concorde, less sophisticated members of the public associated the similar basic shapes and aerodynamic characteristics of the two planes.

Concorde's manufacturers sought to erase any links to the past by subjecting the aircraft to the most thorough testing program ever conducted for a commercial airliner, including nearly 5,000 hours of test flying (compared to approximately 1,500 hours for the B-747). Nevertheless, critics of Concorde cited five major shortcomings.

1. *Range and Fuel Reserves*

Given the enormous amount of fuel consumed by the Concorde in supersonic flight and the parameters of size and weight which limit the amount of fuel which can be carried, some commentators questioned whether Concorde could fly the Paris to Washington route and still have enough fuel in reserve to accomplish any necessary "holding" or diversion to an alternate airport in the event of emergency or inclement weather.²⁹ Skepticism regarding Concorde's range led, in turn, to the

26. *Id.* at 7.

27. A total of 77 Comets were ultimately sold for commercial service. A. WILSON, *THE CONCORDE FIASCO* 16 (Penguin ed. 1973).

28. *Id.* at 137-142.

29. 14 C.F.R. § 91.23 (1976), provides in part:

No person may operate a civil aircraft in IFR [instrument flight rules] conditions unless it

theory that Concorde would require preferential treatment by air traffic controllers to avoid prolonged holding patterns. Analysis by FAA indicated that Concorde would carry fuel reserves adequate to meet both its own standards and the more stringent British standards. However, EDF demanded an explanation of apparently contradictory testimony by a French aviation official³⁰ at Secretary Coleman's hearing on the Concorde issue and a 1972 memorandum of "Interagency Minutes" which related a request by the British and French for an FAA exemption "to permit the Concorde to arrive at U.S. airports with less than the normal fuel reserves on the basis of the Concorde's speed."³¹

2. Fuel Tank Fires and Explosions

The provision of a system to control fuel tank fires was thought by some observers to pose a particular problem for Concorde as a result of the aircraft's unique design. Because the temperature of Concorde's fuel rises as it circulates throughout the aircraft during flight, cooling its skin, critics charged that there was a greater risk of fire in Concorde than in subsonic jets and that the aircraft's manufacturers had not provided adequate means for fire prevention and extinguishment. As evidence of this danger, critics pointed to the fact that Concorde was not equipped with a "nitrogen inerting" system which, they suggested, was the only adequate means of fuel tank fire suppression. The absence of such a

carries enough fuel (considering weather reports and forecasts, and weather conditions) to —

- (a) Complete the flight to the first airport of intended landing;
- (b) Fly from that airport to the alternate airport; and
- (c) Fly thereafter for 45 minutes at normal cruising speed. *Id.*

30. Although 14 C.F.R. § 91.23 appears to require that aircraft carry enough fuel to "hold" for 45 minutes after flying to an alternate airport, note 29 *supra*, Claude Frantzen, Assistant Director for Technical Affairs of the French Secretariat Generale a l'Aviation Civile, had the following exchange with the Secretary of Transportation at the Concorde public hearing:

Secretary Coleman: What is your prediction of what the holding fuel will be once you get to the United States and where you would land?

Mr. Frantzen: Mr. Secretary, to relieve all fears, let us take the example of the longest route for which application has been filed—Paris to Dulles. In that case, let us state that both Government requirements and airline usual policy will lead to the fact that when Concorde will land at Dulles, it will have on board a quantity of fuel not less than seven tons, which would have allowed another additional 35 minutes of hold, or a diversion to the alternate airport and there fifteen minutes of hold at this alternate, an approach, a short pattern circuit and the landing.

Transcript of Public
Hearing 35 (January 5,
1976).

31. The so-called "Interagency Meeting of Regulatory Actions Affecting SSTs", which was held at the Department of State on October 10, 1972, was attended by representatives of the White House, Department of State, FAA, Environmental Protection Agency, Civil Aeronautics Board and Council on Environmental Quality.

system, they charged, was one reason why the FAA had so far refused to issue a U.S. type certificate to Concorde. Defenders of the aircraft countered that Concorde's design incorporated a number of features to eliminate the possibility of fuel tank fire and that the "nitrogen inerting" system was merely one of a number of available methods of fuel tank fire suppression. By issuing certificates of airworthiness to Concorde, the British and French had determined that the aircraft was safe from fuel tank fire, according to the plane's operators.³²

3. *The Turn to "Beat the Meter" at JFK*

For many years the Port Authority of New York and New Jersey, which operates Kennedy Airport, has imposed a noise limit of 112 PNdB (perceived noise in decibels) as measured at selected locations under the take-off paths in communities surrounding the field. Notices are sent to violators of the 112 PNdB standard and habitual offenders are ultimately subject to injunctive action by the Port Authority. British Airways and Air France personnel estimated that in order to avoid exceeding the prescribed noise limit when departing runway 31L,³³ it would be necessary for Concorde to execute a 26 degree left turn beginning at an altitude of approximately 100 feet. The International Federation of Airline Pilots Associations, the Port Authority, EDF and others expressed serious reservations about the safety of such a sharp turn performed at such a low altitude. The FAA, however, concluded on the basis of flight tests and simulation that the maneuver was safe.³⁴

4. *High Altitude Decompression*

Because of the unusually high altitude at which Concorde cruises—up to 60,000 feet—EDF charged that the aircraft posed an unusually serious threat to the safety of its occupants in the event of decompression. In the additional time required to descend to a lower cruising altitude, some maintained, all but the healthiest young adults could suffer loss of oxygen sufficient to maintain consciousness. Why, if not for this reason, EDF asked, had Concorde's manufacturers decided to provide passengers with conventional drop-down oxygen masks while providing the crew with special pressure-breathing equipment?³⁵ British Airways and Air

32. Brief for Respondent/Appellee Compagnie Nationale Air France at 31, *Environmental Defense Fund v. DOT*, No. 76-1105 (D.C. Cir., May 19, 1976).

33. In the case of Runway 31L, one of the runways from which Concorde would take off, the noise meter is located 19,251 feet beyond the start of the runway and 389 feet to the right of the runway center line on a utility pole in Howard Beach, New York.

34. SECRETARY'S DECISION, *supra* note 15, App. II, at 7.

35. Brief for Petitioner at 56, *Environmental Defense Fund v. DOT*, No. 76-1105 (D.C. Cir., May 19, 1976).

France responded that design of the aircraft according to rigid structural specifications reduced the danger of decompression to the equivalent of subsonic aircraft. By installing very small windows, for example, Concorde's manufacturers assured that in the event of a window blow-out at cruise altitude, the pressure leak rate would be slow enough to allow an emergency descent without danger to the cabin occupants. While acknowledging that under the Chicago Convention and bilateral agreements it was bound by the airworthiness determinations of Britain and France,³⁶ FAA announced its independent finding that the Concorde had been built "to more rigid structural requirements than any present subsonic transport aircraft," and that "passenger safety will be commensurate with that of present-day aircraft."³⁷ The FAA found it "highly improbable" that the cabin altitude would ever exceed 37,000 feet.³⁸ Conventional drop-down masks, the same system used in subsonic transports, would assure adequate oxygen at cabin altitudes of approximately 40,000 feet. The provision of pressure breathing equipment for the crew, FAA found, was an "added safety feature . . . to assure no interference with their ability to perform their duties in the event of pressurization loss."³⁹ The FAA acknowledged, however, that before the United States would issue its own type certificate to Concorde, the aircraft would have to comply with FAA's own, and possibly more demanding, decompression standards.⁴⁰

5. *Temperature Shear*

Dotting the stratosphere, within which the Concorde cruises, are pockets of air with temperature differing sharply from that of surrounding air. Because Concorde's engine thrust is very sensitive to air temperature, such changes in temperature could cause the aircraft, when cruising on autopilot, to accelerate and climb or to decelerate and descend. In answer to arguments that this constituted a safety hazard, Concorde's manufacturers responded that pilot override procedures had been developed to eliminate the difficulty.⁴¹

The Legal Framework: NEPA and the Chicago Convention

To the scores of charges that Concorde was an ecological evil the Environmental Defense Fund added the charge that Concorde was simply unsafe, and that the FAA was required by NEPA to spell out its potential safety hazards in an environmental impact statement.

36. See text accompanying notes 46-48 *infra*.

37. SECRETARY'S DECISION, *supra* note 15, App. II at 24.

38. *Id.*

39. *Id.*

40. SECRETARY'S DECISION, *supra* note 15, App. II at 23.

41. SECRETARY'S DECISION, *supra* note 15, App. II, at 29.

NEPA does identify safety as one of its statutory goals. The Act declares that it shall be the responsibility of the Federal Government to "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings"⁴² and to "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences."⁴³ These and other goals of NEPA are to be fulfilled through the preparation for all "major Federal actions significantly affecting the quality of the human environment" of a "detailed statement" which discusses "the environmental impact of the proposed action" and alternatives.⁴⁴ Under these provisions, EDF argued, FAA was required to spell out "the full range of responsible opinion"⁴⁵ regarding Concorde's operational safety in the environmental impact statement.

The extent to which FAA was required to treat Concorde safety as part of the NEPA notice-and-comment review, however, was not solely a question of domestic law. The fact that Concorde operations by British Airways and Air France were to be carried on within the framework of a multilateral treaty addressing aviation safety added another dimension to the problem. Article 33 of the Convention on International Civil Aviation (Chicago Convention),⁴⁶ to which the United States, Britain, France and 125 other nations are parties, provides:

Certificates 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.

At the same time, the United States retains, under Article 11 of the Chicago Convention, the right to apply its own laws and regulations to foreign aircraft "relating to the admission to or departure from its territory" or "to the operation and navigation of such aircraft while within its territory."⁴⁷

42. NEPA § 101(b)(2), 42 U.S.C. § 4331(b)(2) (1970).

43. NEPA § 101(b)(3), 42 U.S.C. § 4331(b)(3) (1970).

44. NEPA § 102(2)(C), 42 U.S.C. § 4332(2)(C) (1970).

45. *Committee for Nuclear Responsibility v. Seaborg*, 463 F.2d 783, 787 (D.C. Cir. 1971).

46. 61 Stat. 1180, T.I.A.S. No. 1591 (Aug. 9, 1946). The United States bilateral airtransport agreements with Great Britain and France, authorizing commercial operations between the contracting parties on specific routes, include similar provisions. See United States-Great Britain Air Transport Agreement [hereinafter cited as Bermuda Agreement], 60 Stat. 1499, T.I.A.S. No. 1507 Art. 4 (February 11, 1946); United States-France Air Transport Agreement [hereinafter cited as Paris Agreement], 61 Stat. 3445, T.I.A.S. No. 1697, Art. IV, (March 27, 1946).

47. Article IV, *supra* note 46, states in full:

Subject to the provisions of this Convention, the laws and regulations of a contracting State relating to the admission to or departure from its territory of aircraft

Thus, as to matters relating to entry, exit and navigation, the United States may apply its own safety regulations; as to matters relating to "airworthiness," the United States is bound to accept the safety assurances of any other contracting party so long as the test applied by that country meets the minimum standards adopted by the International Civil Aviation Organization. As applied to Concorde, this means that, the United States is free under Article 11 to apply its own regulations regarding, for example, fuel reserves, since fuel reserves is a matter relating to the "admission or departure" of the airplane, it is severely circumscribed by Article 33 in the extent to which it may examine, for example, the adequacy of Concorde's system for fuel tank fire suppression. Admission and departure is an "airworthiness" matter as to which the United States is obligated to accept the assurance of the British and French aviation authorities.⁴⁸

Safety as an "Environmental" Issue

Although the Court of Appeals wrote no opinion in *Environmental Defense Fund v. Department of Transportation*, its order affirming the decision of the Secretary of Transportation to authorize a limited pattern of commercial Concorde flights presumably was based either on its judgment that the Department of Transportation and Federal Aviation Administration had, in fact, complied with NEPA by giving sufficient attention to Concorde safety in the environmental review,⁴⁹ or its determi-

engaged in international air navigation, or to the operation and navigation of such aircraft while within its territory, shall be applied to the aircraft of all contracting States without distinction as to nationality, and shall be complied with by such aircraft upon entering or departing from or while within the territory of that State.

Similar provisions are contained in Art. 5(1) of the Bermuda Agreement, *supra*, note 46 and Art. V(a) of the Paris Agreement, *supra* note 46. In addition, the Bermuda Agreement, *supra* note 46, in Art. 2(2) provides:

The designated air carrier or carriers may be required to satisfy the aeronautical authorities of the Contracting Party granting the rights that it or they is or are qualified to fulfill the conditions prescribed by or under the laws and regulations normally applied by those authorities to the operations of commercial air carriers.

Art. II(b) of the Paris Agreement, *supra* note 46 is identical.

48. The Federal Aviation Act explicitly acknowledges the force of the Chicago Convention by providing in section 1102, 49 U.S.C. § 1502 (1970), that the Department of Transportation and FAA shall exercise their powers under the Act "consistently with any obligation assumed by the United States in any treaty, convention or agreement that may be in force between the United States and any foreign country" and providing in section 1108(b), 49 U.S.C. § 1508 (1970), that "[f]oreign aircraft . . . may be navigated in the United States by airmen holding certificates or licenses issued or rendered valid by the United States or by the nation in which the aircraft is registered if such foreign nation grants a similar privilege with respect to aircraft of the United States"

49. Ample evidence in the record existed to support a finding that DOT and FAA did, in fact, analyze Concorde's operating ability—including airworthiness—as an integral part of its environmental review and thereby complied with any obligations which NEPA may have imposed with regard to safety. The draft Environmental Impact Statement included discussions of whether the Concorde could operate safely and without special accommodation in the U.S. air traffic control

nation that Concorde safety was a matter entirely outside the scope of the NEPA. Assuming the Court chose the latter theory, there are several possible bases for its conclusion.

Fundamentally, the question of NEPA's scope is one of statutory interpretation. While it is true that safety is given passing mention in NEPA⁵⁰ and that, in a literal sense, the physical safety of human beings may be an aspect of "the quality of the human environment,"⁵¹ the provisions of NEPA considered together and the context of NEPA's legislative history suggest that aircraft safety is not an "environmental issue" within the meaning of that Act.

If NEPA's provisions are, as some have observed, "opaque"⁵² or "woefully ambiguous,"⁵³ the fault probably can be traced to a lack of legislative prescience. With only an inkling of what new developments the future would bring, Congress intentionally drew NEPA broadly enough to encompass "all the factors that affect the quality of life."⁵⁴ It declared that its purpose was to "encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation."⁵⁵

One court has declared the scope of this declaration to be "as broad as the mind can conceive."⁵⁶ Nevertheless, operational safety does not sit comfortably among the more common connotations of "environmental impact" associated with Concorde such as noise, climatic impact, ozone

system. The final environmental impact statement discussed the safety of the controversial 25-degree turn on departure from JFK runway 31L, Concorde's range and fuel reserves, air traffic control and high altitude decompression. Simultaneous with the release of the final impact statement, moreover, Secretary Coleman issued a notice scheduling a public hearing for January 5, 1976 inviting written and oral submissions on Concorde safety, as well as environmental and international consideration. Comment was specifically invited on safety issues including fuel reserves, air traffic procedures, explosive decompression, fuel tank fire suppression, temperature shear, and the safety of the departure turn from Runway 31L at Kennedy Airport. 40 Fed. Reg. 53612 (1975). An addendum to the Environmental Impact Statement issued together with the Secretary's decision addressed the fuel reserve question and the Concorde decision itself set forth the Secretary's own discussion of and conclusions regarding the aircraft's safety along with an analysis by the FAA.

50. See text accompanying notes 42-44, *supra*.

51. NEPA § 102(2)(C), 42 U.S.C. § 4332 (2)(C) (1970).

52. *City of New York v. United States*, 337 F. Supp. 150, 159 (E.D.N.Y. 1972) (Chief Judge Friendly for 3-judge court).

53. Voight, *The National Environmental Policy Act and The Independent Regulatory Agency*, 5 NATURAL RESOURCES LAWYER 13 (1972).

54. *Jones v. Department of Hous. and Urban Dev.* 390 F. Supp. 579, 591 (D. La. 1974). See also *Scientists Institute for Public Information, Inc. v. AEC*, 481 F. 2d 1079, 1088 (D.C. Cir. 1973).

55. NEPA § 2, 42 U.S.C. § 4321 (1970).

56. *First Nat'l Bank v. Richardson*, 484 F.2d 1369, 1377 (7th Cir. 1973).

depletion and air pollution. *Union of Concerned Scientists v. AEC*⁵⁷ suggests one basis for distinction. Petitioners challenged the licensing of a nuclear generating plant on the ground that the environmental impact statement prepared by the agency failed to discuss the views of several AEC scientists that the reactor's emergency cooling system was inadequate. The Court of Appeals dismissed the challenge holding, *inter alia*, that the operational efficiency of the reactor was not an issue addressed by NEPA. The Court stated:

[W]e are unconvinced that the views here referred to by petitioner are in fact environmental views. Saying that the project won't work is not the same as saying that it will have greater environmental impact than the [impact statement] suggests, even if such failure would have environmental consequences. The basic objection is to the feasibility, not the environmental impact.⁵⁸

Applying this analysis to the Concorde case, it appears that the Environmental Defense Fund's challenge was not to the plane's environmental side-effects—the more traditional environmental impact—but to its ability to function as an aircraft. The challenge was to the plane's feasibility, an argument that “the project won't work.”

Even if aircraft safety is an “environmental issue,” however, it may not be the kind of environmental issue which Congress intended should be addressed in a detailed statement. NEPA states that one of the primary factors motivating Congress to mandate the preparation of an environmental impact statement was the desire to “insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations.”⁵⁹ In other words, Congress directed federal agencies to give weight to environmental costs and benefits which had previously been denied, ignored or given short shrift by federal agencies in the sometimes single-minded pursuit of their respective programs.⁶⁰ It would be difficult to find a poorer example of such a subject than aviation safety regulation. Long established as the primary business of the FAA and its predecessor agencies, aviation safety was, in the words of NEPA, one of those “technical considerations” upon which the regulatory agencies' attention was already focused. Assuming aviation safety was an “environ-

57. 499 F.2d 1069 (D.C. Cir. 1974).

58. *Id.* at 1083, n.34.

59. NEPA §102(2)(B), 42 U.S.C. § 4332(2) (B) (1970).

60. *Sierra Club v. Morton*, 510 F.2d 813, 821 (5th Cir. 1975); *Latham v. Brinegar*, 506 F.2d 677, 689 (9th Cir. 1974); *Calvert Cliffs Coordinating Comm., Inc. v. AEC*, 449 F.2d 1109, 1112 (D.C. Cir. 1971); *Students Challenging Reg. Agency Proc. v. United States*, 371 F. Supp. 1291, 1299 (D.D.C. 1974), *rev'd. on other grounds sub nom. Aberdeen & Rockfish R.R. v. SCRAP* 422 U.S. 289 (1975).

mental" matter at all, it certainly was not one of those "presently unquantified" environmental subjects to which NEPA sought to give new prominence.

Considerations of basic efficiency support this view. Given the current clamoring for regulatory reform, one is reluctant to attribute to Congress the intention of forcing FAA to duplicate in its environmental review the very same safety assessment performed in its regulatory capacity.

Interestingly, a U.S. Court of Appeals decision involving the Environmental Protection Agency (EPA) provides the best example of this approach. In *International Harvester v. Ruckelshaus*⁶¹ the Court held that EPA need not file an environmental impact statement in connection with a one-year suspension of emission standards under provisions of the Clean Air Act, provided the Administrator file a written statement that the action was in the public interest. Under Section 202(b) of that Act,⁶² manufacturers of light-duty vehicles were required to reduce the exhaust emissions of hydrocarbons and carbon monoxide for 1975 models by at least ninety percent from the emission levels permissible in the 1970 model year. However, Section 202(b)(5)(D)⁶³ contained an escape hatch, allowing the EPA Administrator to postpone the deadline by a year if he made specific findings regarding the availability of control technology, the manufacturers' good faith in attempting to meet the deadline, and the necessity for postponement in the public interest. In holding that NEPA did not require the Administrator to prepare an environmental impact statement in connection with his decision on a suspension of the deadline, Judge Leventhal, for the Court, observed:

The purpose of NEPA is to assure presentation to Congress and the public of the environmental impact of executive action. Here Congress has already decided that the environmental dangers require the statutory standards. The only executive decision is of a one year deferral, and the very stuff of such a decision, at least with a public interest determination, is to assess, *inter alia*, the environmental consequences of action and inaction. NEPA's objective will be fully served. As we stated in *Natural Resources Defense Council, Inc. v. Morton*, 148 U.S. App. D.C. 5, 15, 458 F.2d 827,837 (1972), the requirements of NEPA should be subject to a "construction of reasonableness." Although we do not reach the question whether EPA is automatically and completely exempt from NEPA, we see little need in requiring a NEPA statement from an agency whose *raison d'être* is the protection of the environment and whose decision on suspension is necessarily infused with the environmental considerations so perti-

61. 478 F.2d 615 (D.C. Cir. 1973).

62. 42 U.S.C. § 1857f-1(b) (1970) (current version at 42 U.S.C. § 1857f-1(b) (Supp. 1974)).

63. 42 U.S.C. § 1857f-1(b)(5)(D) (1970) (current version at 42 U.S.C. § 1857f-1(b)(5)(B) (Supp. 1974)).

ment to Congress in designing the statutory framework. To require a "statement," in addition to a decision setting forth the same considerations, would be a legalism carried to the extreme.⁶⁴

Just as the "raison d'etre" of EPA is protection of the environment, so the "raison d'etre" of FAA is the regulation of safety; just as the "very stuff" of EPA's decision on a suspension of auto emission standards is its environmental consequences, so the "very stuff" of FAA's decision—at least that part of the decision relating to Concorde's operational characteristics—is its safety consequences.

As a matter of administrative practice, other federal agencies have drawn the same line in complying with NEPA. For example, the Occupational Safety and Health Administration recently adopted standards for agricultural equipment, noting that "[m]achinery accidents have been a major cause of employee injury and death on the farm."⁶⁵ Despite the significance of this standard for farm safety, OSHA prepared no environmental impact statement, following the reasoning of *International Harvester* that safety was the "very stuff" of the regulatory decision. The environmental impact statement prepared by the Department of Transportation's National Highway Traffic Safety Administration in connection with its proposal to require a passive restraint system such as an airbag for the protection of automobile passengers⁶⁶ reflects the same distinction. It includes a discussion of the proposal's impact on resource consumption (consisting primarily of materials used in the airbag system itself and reduced fuel efficiency attributable to the additional weight of the airbag system) but omits any discussion of whether the system effectively promotes automobile safety (whether, for example, any danger would be created by accidental deployment of the airbag).

This pattern is repeated in the other federal agencies with responsibility for safety regulation such as the Nuclear Regulatory Commission, Food and Drug Administration, Consumer Product Safety Commission and National Aeronautics and Space Administration.

The decision in *Nader v. Butterfield*,⁶⁷ one instance in which a court did require that FAA conduct an environmental assessment on a question of safety, is entirely consistent with the *International Harvester* rationale. The court held that NEPA required FAA to prepare a "negative impact statement" describing the radiation emissions of the X-ray devices approved by FAA for the inspection of baggage and explaining why these emissions were not sufficiently serious to require a full-blown environmental

64. 478 F.2d at 650, n.130.

65. 41 Fed. Reg. 10190 (1976).

66. See 39 Fed. Reg. 10272 (1974); the regulatory history of the airbag is reviewed in W.H. Lawrence, *The Economic Impact of Air Bags*, 25 Am. U.L. Rev. 371 (1976).

67. 373 F. Supp. 1175 (D.D.C. 1974).

impact statement. Unlike the question of the X-ray device's ability to detect weapons, which was the "very stuff" of the FAA's decision and on which the FAA possesses substantial expertise, the question of harm from radiation was precisely the kind of environmental side-effect to which NEPA is intended to apply and which is outside the scope of FAA's "mission." Accordingly, FAA included in the Concorde impact statement a detailed consideration of the potential danger to passengers of cosmic radiation.⁶⁸

If there is a major flaw in this application of the "rule of reasonableness" as a matter of either legislative intent or substantial compliance, it is that there is failure to assign sufficient weight to NEPA's processes for public participation. The agency's zeal in pursuit of its statutory goals will likely produce a decision which serves those goals, but may not be an adequate substitute for the notice, comment and hearing processes which are so vital to NEPA.⁶⁹ While, in the best of all possible governments there would be no reason to doubt the skill or dedication of administrative agencies, experience justifies asking "the endemic question of 'Who shall police the police?'"⁷⁰ In Senator Jackson's words, it may not always be correct to assume that the agency charged with environmental, or safety, protection will be "the good guy."⁷¹ Public scrutiny may enhance the quality of the decision-making process. Judge Leventhal, again writing for a panel of the D.C. Circuit, appeared to recognize this in his decision in *Portland Cement Association v. Ruckelshaus*,⁷² another case dealing with EPA's responsibilities under NEPA. In rejecting the association's conten-

68. Concorde Environmental Impact Statement, *supra* note 19, at VI-139.

69. See, e.g., *Trout Unlimited v. Morton*, 509 F.2d 1276, 1282 (9th Cir. 1974); *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 833 (D.C. Cir. 1972); *City of Romulus v. Wayne County*, 392 F. Supp. 578 (D. Mich. 1975); *Warrn Springs Dam Task Force v. Gribble*, 378 F. Supp. 240, 244 (N.D. Cal. 1974), *stay granted*, 417 U.S. 1301 (1974); *Natural Resources Defense Council v. Tennessee Valley Authority*, 367 F. Supp. 128, 132 (E.D. Tenn. 1973), *aff'd*, 502 F.2d 852 (6th Cir. 1974).

Guidelines for preparation of environmental impact statements issued by the Council on Environmental Quality (CEQ), 40 C.F.R. Part 1500 (1975), stress the importance of public comment in the environmental evaluation. Draft environmental impact statements are to be circulated for comment as early as possible "in order to permit agency decision-makers and outside reviewers to give meaningful consideration to the environmental issues involved." *Id.* § 1500.7. Drafts are to be reviewed by relevant federal agencies, the Environmental Protection Agency, state and local governments and the public, *Id.* § 1500.9, and final statements are to be submitted to all parties that commented on the draft, *Id.* § 1500.10. Agency procedures "shall specifically include provision for public hearings on major actions with environmental impact, whenever appropriate, and for providing the public with relevant information, including information on alternative courses of action." *Id.* § 1500.7(d).

70. *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 384 (D.C. Cir. 1973).

71. 118 Cong. Rec. 33710 (daily ed. October 4, 1972) (Senator Jackson quoting from National Wildlife Federation, CONVENTION RPT. (September 22, 1972)).

72. 486 F.2d 375 (D.C. Cir. 1973).

tion that EPA had violated NEPA by failing to prepare an environmental impact statement when promulgating stationary source emission standards for Portland cement plants under the Clean Air Act, the court found that the rulemaking procedures which the agency had followed provided "the functional equivalent of a NEPA impact statement."⁷³ However, in finding the rulemaking procedure an acceptable substitute, the court placed considerable weight on the opportunity it afforded for public participation, stating:

Although the rule-making process may not import the complete advantages of the structured determinations of NEPA into the decision-making of EPA, it does, in our view strike a workable balance between some of the advantages and disadvantages of full application of NEPA. Without the problems of a NEPA delay conflicting with the constraints of the Clean Air Act, the ability of other agencies to make submissions to EPA concerning proposed rules, provides a channel for informed decision-making. These comments will be part of the record in the rule-making proceeding that EPA must take into account.

EPA's proposed rule, and reasons therefor, are inevitably an alert to environmental issues. The EPA's proposed rule and reasons may omit reference to adverse environmental consequences that another agency might discern, but a draft impact statement may likewise be marred by omissions that another agency identifies.

. . . Similarly, EPA's proposed rule, and reasons therefor, are an alert to the public and the Congress who will have the opportunity to comment as to possible adverse environmental effects of the proposed rule, during the pendency of the rule-making proceeding. And finally, the courts will be able to scrutinize the analysis of environmental considerations, in assuring that a reasoned decision has been reached.⁷⁴

Generally, the opportunity for public participation in FAA's safety deliberations is limited to those instances where the agency plays a legislative role through the adoption of generic rules which establish a design or performance standard. Notice and the opportunity for public comment, for example, accompanied promulgation of FAA's fuel reserve requirement. By contrast, where FAA is performing an adjudicative rule-licensing in this context is a form of adjudication or enforcement since the aircraft's performance is measured against a series of already-established rules-there would normally be no opportunity for the kind of public participation seemingly required by *Portland Cement* in FAA's determination that an aircraft will, in fact, meet its fuel reserve requirements. In this sense the unusual public procedures employed by the Department of Transportation and FAA in considering Concorde safety⁷⁵ represented a departure from normal practice.

73. *Id.* at 384.

74. *Id.* at 386.

75. See note 49 *supra*.

Yet it is difficult to see how it could be otherwise or to imagine what a discussion of aircraft safety in an environmental impact statement would ordinarily contain. NEPA requires that agencies set out "the environmental impact of the proposed action" as well as "any adverse environmental effects which cannot be avoided should the proposal be implemented."⁷⁶ Through this explication, it is intended that the decision-maker will give any potential adverse side-effects of the proposed action their appropriate weight in the overall balancing of the costs and benefits leading to an ultimate decision. Where more familiar environmental harms are alleged, the role of the impact statement in the balancing process may be easily visualized. For example, even though the impact statement might indicate that one effect of Concorde operations would be to increase the number of people exposed to high levels of aircraft noise, the decision-maker might reasonably conclude that the commercial and technological advantages of the proposal outweigh the incremental annoyance. Where safety is concerned, by contrast, NEPA balancing is simply inapposite.⁷⁷ An aircraft is either completely safe within FAA's judgment, in which case there are no adverse environmental effects related to safety to cast into the NEPA balance, or it is unsafe, in which case the costs of authorizing operations necessarily override any countervailing benefits and the NEPA balancing process never comes into play.

Even if it be the case, however, that aircraft safety is an environmental issue and is generally within the scope of NEPA, the need for discussion of Concorde safety in an environmental impact statement is, to a large extent, called into question by Article 33 of the Chicago Convention which provides that the United States will respect the airworthiness certificates issued by the British and French aeronautical authorities. While FAA may enforce its regulations relating to admission, departure or navigation of Concorde in U.S. airspace, Article 33 contemplates that FAA will not apply its own standards to those aspects of operation embraced by the concept of airworthiness. As applied to Concorde, this distinction is critical. Concorde's operating range and its ability to safely execute a climbing turn from Runway 31L at Kennedy Airport, as matters relating to entry and departure, are subject to FAA scrutiny. But fuel tank fire suppression and

76. NEPA § 102(2)(C)(i)-(ii), 42 U.S.C. § 4332(2)(C)(i)-(ii) (1970).

77. NEPA has repeatedly been interpreted to excuse agencies from describing in an environmental impact statement adverse effects which are remote or highly speculative. In *Warm Springs Task Force v. Gribble*, 378 F. Supp. 240 (N.D. Cal. 1974), *stay granted*, 417 U.S. 1301 (1974), for example, the court held that the environmental impact statement did not need to include a report on the calamity which would result from the unlikely failure of a dam and reservoir project. *See also* *Citizens for Safe Power v. Nuclear Regulatory Comm'n*, 524 F.2d 1291, 1301, n. 15 (D.C. Cir. 1975); *Trout Unlimited v. Morton*, 509 F.2d 1276 (9th Cir. 1975); *Environmental Defense Fund v. Corps of Engineers*, 348 F. Supp. 916 (N.D. Miss. 1972). *But compare* *Carolina Environmental Study Group v. United States*, 510 F.2d 796 (D.C. Cir. 1975).

explosive decompression, as matters of airworthiness, are not. Consequently, FAA may not review airworthiness determination in an environmental impact statement.

This argument may, in some eyes, represent a "crabbed" interpretation of NEPA.⁷⁸ In *Environmental Defense Fund v. DOT*, *supra*, the petitioners argued that discussion of Concorde airworthiness in the environmental impact statement would not be an act of futility since Article 33 of the Chicago Convention did not foreclose all avenues of decision. Notwithstanding Article 33, if the discussion of Concorde's safety contained in the environmental impact statement and the public comments submitted in response to that discussion proved sufficiently troubling to the FAA, the United States could exercise its right under Article 38 of the Chicago Convention to notify International Civil Aviation Organization (ICAO) of its intention to require observance of more stringent standards than the minimum standards adopted by that organization.⁷⁹ Further, EDF maintained that the Government's view of the environmental impact statement as a decision-making document—a document upon which the Secretary of Transportation would base his decision whether or not to authorize the requested Concorde flights—was far too narrow. Because NEPA is an environmental "full disclosure" law, the Concorde impact statement was also an educational document.⁸⁰ Discussion of Concorde safety in the environmental impact statement would serve the goals of NEPA by informing the President, Congress and the travelling public of any dangers of Concorde operation. Such information could lead Congress to enact a Concorde ban, or reject the system of reciprocal airworthiness recognition contained in Article 33 of the Chicago Convention.⁸¹

78. *Calvert Cliffs Coordinating Comm. v. AEC*, 449 F.2d 1109, 1117 (D.C. Cir. 1971).

79. Article 38 of the Chicago Convention, *supra* note 48, provides:

Any state which finds it impracticable to comply in all respects with any such international standard or procedure, or to bring its own regulations or practices into full accord with any international standard or procedure after amendment of the latter, or which deems it necessary to adopt regulations or practices differing in any particular respect from those established by an international standard, shall give immediate notification to the International Civil Aviation Organization of the differences between its own practice and that established by the international standard. In the case of amendments to international standards, any State which does not make the appropriate amendments to its own regulations or practices shall give notice to the Council within sixty days of the adoption of the amendment to the international standard, or indicate the action which it proposes to take. In any such case, the Council shall make immediate notification to all other states of the difference which exists between one or more features of an international standard and the corresponding national practice of that State.

80. See *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973); *Monroe County Conservation Council v. Volpe*, 472 F.2d 693, 697 (2d Cir. 1972); *Environmental Defense Fund v. Froehlike*, 473 F.2d 346, 348, 352 (8th Cir. 1972); *Ely v. Velde*, 451 F.2d 1130, 1139 (4th Cir. 1971); *Environmental Defense Fund v. Corps of Engineers*, 348 F. Supp. 916, 932-933 (N.D. Miss. 1972).

81. The fact that an alternative is beyond the authority of the decision-making agency or

Despite the natural appeal of any argument for disclosure, EDF's argument that the Chicago Convention was "irrelevant"⁸² in determining FAA's obligations under NEPA suffered from two serious weaknesses. The first was that FAA did not have any Concorde dangers to disclose. Having analyzed all the operational characteristics of the Concorde, including the airworthiness issues, and concluded that the airplane was safe, the FAA simply did not have any "adverse environmental effects" related to safety to report to the President, the Congress or the travelling public in the impact statement. Second, while the question of whether to ban Concorde from the United States because of its excessive noise, fuel inefficiency and stratospheric emissions has reached the floor of Congress, it is highly unlikely that concern over the plane's airworthiness would move Congress to enact a Concorde ban in the face of both Article 33 of the Chicago Convention and the contrary recommendation of this Government's aviation safety agency. Critics of Concorde safety did not pursue the course—which Article 38 virtually invites—of contesting the adequacy of the minimum safety standards adopted by ICAO. Had they done so, their objections might conceivably have led the United States to notify ICAO under Article 38 that with regard to particular areas of performance, it would require observance of more stringent standards. Instead, critics maintained either that Concorde could not meet the applicable safety standards or that the plane's failure thus far to be type certificated by the FAA proved that it was unsafe. Rejection of the aircraft by Congress on these grounds, as contrasted with the narrower Article 38 notification procedure for which the Convention makes specific provision, would be tantamount to rejection of Article 33 and the Chicago system itself. While the fact that an alternative requires legislative action does not automatically remove it from the range of options to be considered under NEPA, a number of decisions have held that the direction in Section 102(2)(C)(iii) of NEPA⁸³ to discuss "alternatives to the proposed action" in the impact statement does not require the consideration of unrealistic alternatives.⁸⁴ One court has held, for example, that an agency need not address "alternatives so remote from reality as to depend on, say, the

requires new legislation has been held an insufficient basis for excluding it from discussion in a NEPA impact statement. *National Resources Defense Council v. Morton*, 458 F.2d 827, 834 (D.C. Cir. 1972); *Montgomery v. Ellis*, 364 F. Supp. 517, 526 (N.D. Ala. 1973); *Sierra Club v. Froehke*, 359 F. Supp. 1289, 1344 (S.D. Tex. 1973).

82. Brief for Petitioner at 25, *Environmental Defense Fund v. DOT*, Civ. No. 76-1105 (D.C. Cir. May 19, 1976).

83. 49 U.S.C. § 4332(2)(C)(iii) (1970).

84. See *Life of the Land v. Brinegar*, 485 F.2d 460, 472 (9th Cir. 1973), *cert. denied*, 416 U.S. 961 (1974); *Chelsea Neighborhood Ass'ns v. United States Postal Service*, 389 F. Supp. 1171, 1185 (S.D.N.Y. 1975), *aff'd*, 516 F.2d 378 (2d Cir. 1975); *Movement Against Destruction v. Volpe*, 361 F. Supp. 1360, 1388 (D. Md. 1973), *aff'd*, 500 F.2d 29 (4th Cir. 1974).

repeal of the antitrust laws."⁸⁵ The possibility that Congress would reject the Article 33 system—which has served for 30 years as a worldwide passport for U.S. airlines and aircraft manufacturers—would appear to be just as unlikely, rendering a discussion of Concorde airworthiness in the environmental impact statement an empty gesture.

Conclusion

The application of NEPA's admittedly wide-ranging provisions must be informed by an awareness of both the enormous diversity of federal activity and the alternative procedures available for review of agency action. In *Environmental Defense Fund v. DOT*, the petitioners argued unsuccessfully that in deciding to authorize a limited 16-month demonstration of commercial Concorde operations to the United States, the Secretary of Transportation was required by NEPA to discuss Concorde's safety in the environmental impact statement. A more effective approach might have been to challenge the decision that Concorde could perform safely in U.S. airspace under Section 1006 of the Federal Aviation Act⁸⁶ which provides that the U.S. Court of Appeals may set aside orders of the Secretary of Transportation or Federal Aviation Administrator which are unsupported by substantial evidence.

NEPA has already cut a broad swath through federal decision-making, elevating previously neglected environmental values to their deserved place alongside the administrative agencies' other fields of concern. But, as the Concorde case demonstrates, NEPA was neither intended nor formulated as an all-purpose elixir for the ills of government.

85. *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 837 (D.C. Cir. 1972).

86. 49 U.S.C. § 1486 (1970).

