AIRCRAFT NOISE – A THREAT TO AVIATION

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Abstract. Almost five years ago, the Sixteenth Session of the ICAO Assembly adopted a resolution on aircraft noise in the vicinity of airports. The resolution was followed by a special international meeting on noise in Montreal in 1969 which called for recommendations for the development of noise requirements for existing subsonic jet aircraft "as a matter of the utmost urgency." Despite increasing public, local and congressional demands for noise relief and the demonstrated technical feasibility of modifying current aircraft to afford significant noise reductions, nothing of a tangible nature, other than research, has been accomplished to date. While curfews and restrictive legislation limiting the growth of aviation have abounded, U.S. governmental agencies have failed to carry out the mandate given them by Public Law 90-411 in 1968 which directed the FAA to "... prescribe and amend such rules and regulations... to provide for the control and abatement of aircraft noise...", as far as the existing fleet of aircraft is concerned.

Almost five years ago, the Sixteenth Session of the ICAO Assembly adopted a resolution on aircraft noise in the vicinity of airports which stated in part,

... the problem of aircraft noise is so serious in the vicinity of many of the world's airports that public reaction is mounting to a degree that gives cause for great concern and requires urgent solution.

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Agitation for noise relief began long before ICAO's recognition of its need. The NATCC (National Air Transport Coordinating Committee, an industry organization composed of the airlines, The Port of New York Authority, old CAA, and the pilot organizations) was formed in the early 1950's in response to complaints about the noise of propeller-driven aircraft operating at LaGuardia and Newark Airports. By the time jet service was initiated, the public had already become incensed at the prospect of jet disturbance and was organizing in anticipation of sleepless nights and interrupted daytime activities.

Despite the early introduction of a Preferential Runway System at Kennedy to direct take-offs over Jamaica Bay, the corresponding landing direction brought aircraft over the densely populated area north of the airport with noise levels on the order of 120 PNdB and above. A threatened march on the airport – after several days of repeated landings on the same runway – resulted in a reassessment of the airport traffic control procedures. The high frequency whine of the jet engine, heard by the observer under the landing path, became the primary concern rather than the jet exhaust roar so familiar to those exposed to take-off and flyover activity. As a result, preferential runway procedure was revamped to place the greatest emphasis upon overwater arrivals. The Port of New York Authority, now The Port Authority of New York and New Jersey, continued to monitor take-off noise at the edge of the
communities surrounding the three major airports in the area, establishing a limit of 112 PNdB. This was based upon the 75th percentile of the distribution of the noise of large, four-engine, propeller-driven aircraft which had operated prior to the introduction of jets.

Complaints, however, continued to increase as the amount of jet traffic built up at airports throughout the country, and it became apparent that the first generation of jet aircraft, even the turbofans, was just too noisy to be accepted by the communities and that the passage of time rather than ameliorating the condition would only hasten the day of reckoning. That day is upon us now. As the FAA stated as early as 1967, Aircraft noise has developed into a world-wide problem in the decade that civil jet aircraft have operated in large numbers. It is, of course, most severe in major metropolitan areas where aircraft traffic is heavy and the capacity of airports is being reached; it is also straining the understanding and patience of people on the ground. With even the most conservative traffic projections for the next decade showing large increases, it is obvious that the air transportation system is choking itself on both airport capacity and noise. Aircraft noise has become so severe at some locations (with only current airborne traffic) that it is inhibiting solutions to the capacity problem. Communities near airports resist airport expansion out of concern for increased noise due to more and larger aircraft which means more noise. Communities nearly everywhere resist the development of new airports nearby because of the noise factor.

The community resistance to noise has resulted in restrictions upon aircraft operations that have led to reduced efficiency, lower productivity, higher operating costs and poorer service.

The Perferential Runway System is a device by which flight paths are established to avoid areas which are considered to be noise sensitive, by directing the traffic over so-called nonsensitive areas. This has proven to be extremely effective and is in wide use at many airports throughout the world. However, it has been accompanied in some situations by awkward air traffic control procedures, longer flight tracks and less airport capacity.

The imposition of curfews has increased in the last several years, and its spread seriously threatens the orderly growth of aviation transportation. Cargo operation, for example, the most dynamically growing sector of aviation, relies upon night operations to retain its competitive status with other forms of surface delivery. Aircraft positioning for early morning departures must, at times, be done at night. Delayed aircraft, which are scheduled for late evening arrival and departures, must continue into the night to avoid cancellations or diversions.

With the increase in air carrier operations projected for the 1980's after the leveling-out process of the 1970's has run its course, the use of night hours will represent a means of increasing airport capacity not normally available during the day since the adding of runways at most major airports is limited by space and environmental considerations. Surely, an attractive fare structure could be created to provide sufficient incentive to replace a warm bed with a warm seat. (My secretary, to whom I dictated this passage, assured me that for a $200 round-trip fare to Europe, she'd give up sleep anytime.)

Furthermore, with modern maintenance techniques and the high reliability of jet