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ENVIRONMENTAL NOISE CAUSED BY AIR TRAFFIC

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Air transport industry is growing faster than a legal framework producing and introducing technological and operational advances which reduce the environment impact at a source. The paper elaborates the Directive 2002/30/EC of the European Parliament and of the Council of 26 March 2002 on the establishment of the rules and procedures with regard to the introduction of noise-related operating restrictions at Community airports and Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessments and management of environmental noise. The author is focused on a balanced approach principle and on the role of the airport industry and local authorities in order to achieve improvements to the environmental performances of air transport operations. In author's opinion there is a need for clear regulation with sanctions at international, regional and local level in concert with voluntary agreements and initiatives between airports and airlines on course of action to minimise noise.

Key words: environmental noise, air traffic, balanced approach, voluntary agreement.

1. INTRODUCTION

The present situation is that large airports located in the centre of large conurbations are getting ever larger, and expansion of small tourist airports located in the centre of tourist areas is resulting in unwanted or harmful outdoor sound called environmental noise. Sustainable development of air transport necessitates the introduction of measures aimed at reducing the noise nuisance from aircraft and airports with particular noise problems. Aircrafts and airport noise is one of the most difficult noise problems to address and it is a sensitive issue for residents and tourists in the areas near airports.

2. EUROPEAN UNION MAIN SOURCES OF LAW

2.1. Directive 2002/30/EC of the European Parliament and of the Council of 26 March 2002 on the establishment of the rules and procedure with regard to the introduction of noise-related operating restrictions at Community airports

The objective of Directive 2002/30/EC is to lay down the rules for the Community to facilitate the introduction of operating restrictions in a consistent manner at airport level so as to limit and reduce the number of people significantly affected by harmful effects of noise, as well to provide a framework which safeguards internal market requirements. Moreover, the aim is to promote development of airport capacity in harmony with the environment, to facilitate the achievement of specific noise abatement objectives at the level of individual airports and to enable measures to be chosen from those available with the aim to achieving maximum environmental benefit in the most cost-effective manner.

Noise management is structured around a balanced approach to solving noise problems on airport-to airport basis which requires careful assessment of reduction of airplane noise at source, land-use planning and management measures, noise abatement operational procedures and local operating restrictions relating to noise problems.

Member States shall adopt a balanced approach in dealing with noise problems at airports in their territory in addition to considering economic incentives. Measures or combination of measures should not be more restrictive than necessary in order to achieve the environmental objectives established for a specific airport.

Rules on assessment should include information on current inventory, the forecast without application of new measures and the assessment of additional measures.

2.2. Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating the assessments and management of environmental noise

According to the Directive 2002/49/EC called the Environmental Noise Directive the actions on determination of exposure to environmental noise, through noise mapping, by methods of assessment common to the Member States should be implemented progressively along with ensuring that information on environmental noise and its effects is made available to the public. Also to that end should be the adoption of action plans by Member States, based upon noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where the exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.

Member States shall designate at appropriate levels the competent authorities and bodies responsible for implementing this Directive, including the authorities responsible for making and where relevant, approving noise maps and action plans for

agglomerations, major roads, major railways and major airports, as well as collecting noise maps and actions plans, using harmonised indicators Lden (day-evening-night equivalent level) and Lnight (night-time equivalent level).

Informing and consulting the public has a meaning of making available and disseminating to the public all the information concerning environmental noise to one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organisations or groups, in line with the principles on access to information, public participation in decision-making and access to justice in environmental matters of the Aarhus Convention.

Competent authorities shall draw up action plans to reduce noise where necessary and maintain environmental noise quality where it is good. The Directive does not set limit value, nor does it prescribe the measures to be used in the action plan, which remain at the discretion of the competent authorities.

The Directive is in line with development a long-term, European Union strategy, which includes objectives to reduce the number of people affected by the noise in the longer term, and provides a framework for developing existing Community policy on noise reduction from source.

3. BALANCED APPROACH IN NOISE NUISANCE

The balanced approach calls for the reconciliation, as far as practicable, of two opposite parameters: on the one hand, noise mitigation measures have to meet local requirements that can vary from one airport to another to another and on the other hand, the selected measures have to be universal enough to satisfy the global requirements of airlines and manufactures who cannot modify their services or products beyond certain limits.

The long-term goal must be to achieve improvements to the environmental performances of air transport operations that outweigh the environmental impact of the growth of this sector.

The use of aircraft with better environmental performances can contribute to a more effective use of available airport capacity and facilitate airport infrastructure development in line with the market requirements.

The balanced approach is an important step towards achieving noise-reduction. But it might be necessary to achieve sustainable noise-reduction through more stringent technical standards, such as more stringent noise standards for aircraft combined with the action to take noisy aircrafts out of service.

4. THE ROLE OF AIRPORT INDUSTRY AND LOCAL AUTHORITIES

Aircraft noise problems have led to operational limitations and opposition to airport expansions and construction. Uncoordinated policy developments to address aircraft noise could hinder the role of aviation in economic development.

Most of aircraft noise is from take-off, landing and turning and is a major problem near airports and flight paths. While individual aircraft are quieter, increasing air traffic means more people are affected.

Namely, current aircraft noise is affecting the quality of life of people living close to airports and increases in air traffic outstrip technological progress in making individual flights quieter.

The International Civil Aviation Association (ICAO), a UN Specialized Agency, has established Strategic Objectives for the period 2005-2010, dealing also with environmental protection in order to minimize the adverse effect of global civil aviation on the environment. Consequently the objective is to develop, adopt and promote new and amended measures to limit or to reduce the number of people affected by significant aircraft noise to limit or reduce the impact of aircraft engine emission on local air quality and to limit and reduce the impact of aviation greenhouse gas emission on the global climate.

ICAO advises States and airport to be transparent when considering mitigation measures by assessing the noise problem at the airport concerned based on objective, measurable criteria and other relevant factors, evaluating the likely costs and benefits of the various measures and based on that evaluation, selecting measures that achieve maximum benefit most cost-effectively and by disseminating the evaluation results for the purposes of stakeholder consultations.

The operating restriction should be based on the noise performance of aircraft and limited to restrictions of a partial nature whenever possible. Also in enforcing restriction, consideration should be focused to the possible consequences for air services where there is no suitable transport alternative available as well as to the special circumstances of operators coming from developing countries.

Local rules for implementation at the level of airports are part of a policy aimed at integrating environmental requirements into sectoral policies in a coherent way. It includes measures to be applied at the level of the airports in order to reconcile the need for action on environmental grounds with the necessity to prevent distortive proliferation of local rules.

It is crucial that the current indicators be supplemented by noise pollution indicators representative of noise-causing events and their frequency. These indicators should also reflect the noise experienced by living people under flight paths.

It would be preferable for each European Union Member State to envisage the creation of an independent institution for monitoring airport-related sound pollution. These independent institutions should also be given authority, in addition to seeking information and responding to complaints, to supervise the restrictions on operations, procedures, take-off angles, altitudes for turning and the use of runways according to the norms regarding wind and preferential system. Each institution should be able to apply sanctions, with the possibility of fines, where regulations are not respected.

5. CONCLUSIONS

Aircraft noise could constrain airport expansion unless substantial noise reduction is made. Noise management covers the reduction of noise at source, through technological progress sanctioned by successive certification standards and fleet renewal, accompanied by other mitigation measures including land use planning and management, noise abatement procedures and aircraft operating restrictions.

When setting the flight trajectories the priority must be taking the population and tourist density into account. Before any decision relative to spatial planning in the vicinity of airports, the authorities must have at their disposal the data regarding physical measurement of noise, as well as information on the effects of noise on the people concerned. The goal is to address the local noise problem in the most cost-effective manner, on the understanding that the solutions need to be tailored to the specific characteristics of airports concerned.

The benefits for the Environmental Noise Directive are that it provides a harmonized structure for balanced approach and it is useful in ensuring that all interests are taken into account when restrictions are considered. The shortcomings are that the Directive has been used in the case of limited number of airports and some stakeholders are of the opinion that it is not sufficiently clear. In addition the deficiency of the Directive is that some Member States already had similar provisions under national law prior to the entry into force of the Directive. Ultimately, the fact is that the number of people affected by noise has increased since the Directive came into force.

The author is urging voluntary incentives such as agreements between airports and local communities on the number or types of day and night flights, as well as voluntary initiatives between airports and airlines on procedure to minimise noise. Guidance to airport operators on potential mitigation instruments such as a list of take-off noise limits reasonably achievable by different aircrafts types are of utmost importance.

In authors opinion there is a need for regulation with sanctions for failure to follow noise preferential routes, take-off noise, or the number of night flights, enforced through fines on offending airliners and airports. In addition, in author's opinion economic instruments such as landing charges that vary according to the noise performance of aircraft should be enforced or an airliner's track record kept.

To promote the integration of noise in policy making at local level actions should be focused to make the case of noise integrated into local strategic planning, in concert with responding to all relevant government consultations. Also, at local level it is important that noise considerations be included in decision making, as well as to work with noise interest groups in order to raise awareness. The evolution is required to identify and highlight examples of where noise has been and has not been adequately integrated into policy making.

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