

1990年代 國際航空運送分野에 있어서의 主要 當面課題와 問題點*

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■ ————— 》 차 례 《 —————

I. 主要 問題點들

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여기서는 현재 國際民間航空運送이 직면하고 있고, 또 앞으로 직면할 수 있는 主要 問題點들을 언급 하는데 그 목적이 있으며, 騒音問題에 관하여는 몇가지 解決方案을 언급하기로 한다.

I. 主要 問題點들

1. 航空社 관련

- (1) 代理店의 航空券 판매에 대한 航空社의 개입.
- (2) 國際航空運送에 있어서 航空社間 公정한 경쟁
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- (4) 航空社間 CODE의 공동 사용(CODE SHARING)
- (5) 서어비스의 교환
- (6) 航空社間 상호 긴밀한 국제적 협조

*본 내용은 지난 5월 19일 서울에서 있었던 “제 1 차 國際航空學術세미나(韓國航空大學附設 航空産業政策研究所 주관)”에 참석한 國際民間航空機構(ICAO) 運送局長인 Vladimir D. Zubkov(소련)氏가 주제 발표한 “1990年代 國際航空運送分野에 있어서의 主要 當面課題와 問題點”을 요약 정리한 것이다.

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2. 空港 및 空港關聯施設 관련

- (1) 航空運送의 지속적 발전에 있어서 空港과 空域의 복잡성과 그 영향
- (2) 空港과 航路航法施設의 경제성
- (3) 國際航空運送에 있어서 出入國 節次의 간소화
- (4) 航空機 현대화와 空港基本施設 개선

3. 國際航空運送業務 관련

- (1) 國際航空運送 運賃과 料率
- (2) 國際民間航空에 대한 불법 개입 방지수단—財政과 費用補償측면
- (3) 地域 經濟統合—非會員國과 관련된 航空業務
- (4) 國際航空運送業務와 관련된 규제
- (5) 航空運航上의 안정성과 경제성과의 상관관계
- (6) 國際航空運送에 있어서의 租稅問題

4. 其他

- (1) 航空運送을 이용하기 힘든 老弱者와 신체장애자들을 위한 교통수단 및 편의시설 확충
- (2) 국가간 정보교환에 대한 國內規則
- (3) 附屬書 16에서 요구한 騒音證明에 미치지 못하는 超音速 航空機의 騒音규제 가능성—경제성 포함

II. JET航空機의 騒音規制

航空機의 騒音規制에 대하여 현재 행해지고 있는 방법들은 다음과 같다.

첫째, 航空機의 離着陸時에 騒音を 감소시킨다. 이를 위하여 별도로 이륙, 접근 및 착륙 절차를 지정한다.

둘째, 夜間 離着陸을 최소로 줄인다.

셋째, 各 空港別 許容 騒音規制 等級을 정하고, 航空機 역시 機種別 騒音 等級을 지정하여, 空港에서 허락하지 않는 離着陸은 금지시킨다. 참고

로 ICAO에서 지정한 航空機의 騒音等級은 다음과 같다.

Non-noise certificated aircraft(騒音が 심한 航空機) : Boeing 707,
McDonnell-Douglas DC-8

Chapter 2 aircraft(騒音が 약간 심한 航空機) : Boeing 727, Boeing 737,
McDonnell-Douglas DC-9

Chapter 3 aircraft(최근에 개발된 低騒音型 航空機) : Airbus A-300계열,
Boeing 757, Boeing 767, McDonnell-Douglas MD-80계열

III. 國際的 協調와 解決策 모색을 위한 ICAO의 役割

위에서 언급한 제반 주요 문제점들은 1990年代 國際 民間航空運送의 발달을 위해 국제적으로 공동 해결해야 할 當面 課題들로서 ICAO는 모든 會員國 代表들과 꾸준히 협조하여 연구 노력하고 공헌함으로써 그 역할과 사명을 다 할 것이다.

Major Problems Associated with Continued Development in the Air Transport Field in the 1990ies

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The objective of this presentation is to describe major air transport problems which international civil aviation is faced with at present and those which may be encountered in the last decade of the 20th century. ICAO's role in tackling these problems as well as some aspects of cooperation between Contracting States and ICAO are also being discussed.

I. Inventory of major problems

This part provides an inventory of present and potential major international air transport problems. They are listed in alphabetical order.

1. Accessibility of air transport for elderly and disabled persons
2. Airline access to distribution channels
3. Airport and airspace congestion and their impact on the continued development of air transport
4. Application of competition laws to international air transport

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5. Code-sharing
6. Computer reservation systems
7. Economic situation of airports and route air navigation facilities
8. Facilitation of international air transport
9. Fleet renewal and investment in airport infrastructure
10. International air transport fares and rates
11. Measures to prevent unlawful interference with international civil aviation-financing and cost recovery aspects
12. National regulation of transborder data flows
13. Possible noise restrictions on subsonic jet aircraft which do not meet the noise certification requirements in Annex 16-economic implications
14. Regional economic integration-air service concerns of non-participating States
15. Regulation of international air transport services
16. Relationship between economic and safety factors in air transport operations
17. Taxation of international air transport
18. Trade in services
19. Transnational alliances among airlines

The magnitude and importance of these problems to the international civil aviation very substantially and we will not attempt to consider all of them. More attention will be paid to those items which have been attracting much attention of civil aviation and airport administrations and have significant influence on further development of international air transport.

II. Economic implications of possible noise restrictions on jet aircraft

ICAO's commitment on noise and environmental issues in a long standing one, dating back to 1968. The application of the noise standards contained in Annex 16 to the Chicago Convention was discussed extensively during the 26th Session of the Assembly in 1986. The Assembly discussed this matter against the background of decisions by a number of States to introduce operating restrictions in their territories on aircraft that do not meet the requirements of Annex 16, Chapter 2, as well as indications that these restrictions would be followed up with future measures aimed at curtailing the operations by aircraft which do not meet the more stringent requirements set out in Chapter 3 of Annex 16.

The main concern of the Assembly was to achieve a balance between the desire to protect the environment around airports against unnecessary noise and the desire to protect air carriers against excessive financial burdens associated with an accelerated replacement of noisy aircraft.

There are currently two conflicting trends affecting noise levels at airports. An increasing proportion of movements are being performed by modern quieter aircraft, at the same time the number of movements is increasing as passenger and cargo traffic grows (ICAO estimates that while in 1987 the mark of 1 billion international passengers was overcome there will be approximately 2 billion by the turn of the century). As a result, noise levels are declining at some airports and increasing at others, depending on the relative importance of these two conflicting trends.

What can be done ?

Most aircraft noise abatement measures which are presently in use or planned are based on stopping the noise at source. This can be achieved in a number of ways. Firstly steps are being taken to ensure that aircraft landing or taking off at an airport do not make more noise than is absolutely necessary. Such measures include special take-off, approach and landing procedures, the aim of which is to reduce the noise that aircraft engines produce or to direct aircraft away from noise-sensitive areas.

Secondly, some airports have imposed a complete or partial curfew on aircraft movements at night. In some cases these are based on quotas which define a maximum number of flights permitted, which in others the curfew only applies to the noisiest types of aircraft, thus encouraging the use of new, quieter aircraft.

Thirdly, if all else fails, the noisiest aircraft types could be banned from operating at certain airports. Subsonic jet aircraft fall into three noise categories developed by ICAO. "Non-noise certificated aircraft" (or "NNC aircraft") are the noisiest and include such aircraft as Boeing 707 and McDonnell-Douglas DC-8. "Chapter 2 aircraft" are somewhat less noisy and include such aircraft as Boeing 727 and 737 and McDonnell-Douglas DC-9. "Chapter 3 aircraft" take advantage of the latest low-noise technology and include such aircraft as Airbus A-300 series, Boeing 757 and 767 and McDonnell Douglas MD-80.

Some countries have already banned the operations of NNC aircraft, notably the United States in 1985 and subsequently most western European States. In some cases, temporary exemptions have been granted, for example to some airlines from developing countries.

The ICAO study

The impact on airlines of future possible operating restrictions on noisy aircraft would greatly depend on where and when the restrictions were introduced. On the basis of consultations with States, the ICAO study assumed that Chapter 2 aircraft would not be allowed to operate at airports in the United States, western Europe and certain other developed countries(the “noise-restricted areas”) but would be allowed to continue to operate elsewhere(the “non-restricted areas”). Regarding timing, the study examined a number of different scenarios, some involving a ban on Chapter 2 operations introduced at a certain point in time(1995, 2000 or 2005) and others involving phased bans to be implemented gradually.

At the end of 1988, there were about 8,300 subsonic jets in commercial service world-wide, excluding the USSR domestic fleet and small aircraft of less than 9 tonnes take-off weight or less than 40 seats. Of these aircraft, approximately 5 per cent are NNC, 59 per cent are Chapter 2 and 36 per cent are Chapter 3.

NNC aircraft and Chapter 2 aircraft are no longer being built(with a few exceptions) and their numbers are declining as they reach the end of their economic lives. Nevertheless, in 1995 we estimate that there would be about 3,700 Chapter 2 aircraft still in service worldwide and, ten years later, over 1,600.

Approximately two-thirds of these Chapter 2 aircraft belong to airlines based in the noise-restricted areas and they would all be affected by an operating ban. If a ban were introduced in 1995, it would affect 2400 aircraft, if introduced ten years later it would affect 1085 aircraft.

The remaining Chapter 2 aircraft belong to airlines based in the non-restricted areas, but some of these aircraft are not used on

routes to the noise-restricted areas and would therefore not be affected by a ban. Moreover some that are at present used on these routes could be redeployed. Based on a survey conducted in cooperation with IATA, we estimate that if a ban were introduced in 1995, it would affect 264 of these aircraft ; if introduced ten years later it would affect 97 of these aircraft. Airlines that would be particularly affected are those based in Central America, North Africa and Eastern Europe, and other countries near to the noise-restricted areas. For some of these airlines the affected aircraft would represent a significant proportion of their fleets.

In order to continue their operations, airlines with affected Chapter 2 aircraft would be obliged to replace them by Chapter 3 aircraft(or perhaps to have quieter engines fitted). In principle, the effect of an operating ban is to accelerate an on-going fleet modernization process, thus requiring airlines to make capital commitments earlier than justified from purely commercial considerations.

For example, for airlines from the non-restricted areas, we estimate that if a ban were imposed in 1995 the capital commitments that would need to be brought forward to that date amount to about \$9,500 million. The years later, the corresponding figure would be \$3,500 million. Although we have not made these estimates for airlines based in the noise-restricted areas, they are made these estimates for magnitude higher than those for airlines from non-restricted areas. It should be emphasized that these figures do not represent additional investment, but rather investment which be expected to be made at some stage in the future and which would need to be brought forward.

The real costs to the airlines of an operating ban have been assessed in the ICAO study in terms of the additional capital costs over

the period concerned associated with bringing forward the estimated investment requirements referred to above, less savings associated with disposal of existing aircraft at a date earlier than planned and savings in operating costs accruing from use of replacement aircraft over the period concerned. For example, if a ban were imposed in 1995, the real costs to the airlines from the non-restricted areas would be about \$2,250 million. The years later, the corresponding figure would be \$410 million.

The results of this study have been discussed by ICAO's 161 Member States at the 27th Session of the ICAO Assembly in October 1989. The Assembly appeared to be very close to a comprehensive agreement. However, following extensive discussion and development of the draft resolution, the Assembly ultimately recognized that further time was necessary for consultation and analysis with a view to reaching consensus. The question of operating restrictions in relation to aircraft noise was therefore deferred to the next Extraordinary Session of the Assembly, which will be held later this year.

A number of delegations at the 27th Session of the Assembly indicated that—for reasons related to environmental protection and the necessity of giving reasonable notice to the air transport industry—their governments would most probably be led to take legislative measures.

What next?

Some key questions that have been addressed by the Assembly and which are still preoccupying us are :

- Are bans/restrictions essential? Might the normal attrition of the existing fleets of Chapter 2 aircraft provide an adequate rate of improvement of the noise climate around airports?

- Should States consider incentives to accelerate aircraft fleet modernization as an alternative to banning Chapter 2 aircraft?
- Would manufacturers be able to produce the additional aircraft needed?
- What kind of restrictions and when would they be introduced?
- Should there be a cut-off date after which no operation of Chapter 2 aircraft is possible?
- Would restrictions have to apply to all types of Chapter 2 aircraft? Could any aircraft types be exempted?
- Would restrictions have to apply to all airlines?

In attempting to reduce aircraft noise around airports, it is necessary to take into account not only environmental considerations, but also the impact on airlines serving these airports. If answers can be found to some of the questions outlines above, we are optimistic that an agreement can be reached by ICAO on Chapter 2 aircraft without placing an intolerable burden on airlines and particularly those of developing countries.

III. Airport and airspace congestion and their impact on the continued development of air transport

This chapter summarizes developments leading to the present airport and airspace congestion problems, briefly describes ICAO activities in forecasting and economic planning, facilitation, and airport and route facility management, that assist in reducing or preventing congestion problems, and describes possible future work by ICAO in these fields.

Background

Air transport has been experiencing rapid growth which is expected to continue. From 1979 to 1988 scheduled traffic in terms of passenger-kilometres performed increased by some 60 per cent, with the annual number of passengers carried exceeding 1,000 million for the first time in 1987. This number of passengers forecast in "The Economic Situation of Air Transport—Review and Outlook, 1978 to the Year 2000"(Circular 222) to reach close to 2,000 million by the year 2000. Passenger traffic carried on non-scheduled services adds some 10 per cent at present to this traffic on a worldwide basis and makes a much larger contribution in some areas, notably in Europe where it accounts for some 50 per cent of all passenger traffic. In addition, worldwide freight traffic is expected to maintain a slightly higher growth rate than passenger traffic.

Moving these large volumes of traffic places heavy demands on the two essential parts of the air transport system, namely the air carrier's capacity to fly the traffic, and airport and airspace handling capacity. It is evident from the growth in the number of flights and aircraft capacity operated that the demand for air travel has been growing much more rapidly in certain parts of the world than the Airport and airspace capacity required to cope with the expanded volume of traffic. Moreover, sharp and unexpected increases in the traffic of certain States that were difficult to forecast have caused severe congestion problems for those States.

Although congestion problems are particularly serious in Europe and North America they are also emerging in other regions, for example in certain areas along the Pacific rim. The problems also have wider implications, because actions taken by a State or group of States within a region to deal with specific problems, such as the

introduction of curfews, can lead to flight delays or other congestion problems for neighbouring States or States at more distant locations.

The rapid growth of traffic, the nature of this traffic, and the congestion problems that have arisen are the result of many different factors. For example, deregulation, increased competition and the levels of fares and rates offered have had a substantial impact. The terms of bilateral agreements have also influenced the number of flights and the size of aircraft operated on international routes. Increases in traffic at certain airports have resulted from the expansion of hub-and-spoke operations. Another contributory factor has been insufficient attention to forecasting activity and the difficulties encountered in accurately forecasting future traffic, particularly the number of movements, for systems planning purposes. The flow of traffic through airports has also been affected by the introduction of increased security and narcotics control measures and the problem of inadmissible passengers which have placed additional pressures on airport controls.

Traffic peaks are a common feature of civil aviation and serve to define airport and airspace handling capacity requirements. Assistance in coping with traffic peaks and better utilizing existing capacity has been provided through the use of airport scheduling committees and traffic flow management arrangements for air routes. However, many additional measures are needed to provide the amount of capacity required to deal with excessive peaks and reduce congestion problems, or prevent them from arising.

Effective solutions to congestion problems must be sought by various means at the national and local level and through co-ordinated efforts at the international level. ICAO has an important role to play in this endeavour as the body established by States with the basic

aim of promoting the safe and orderly development of international civil aviation. In arriving at solutions to congestion problems it is essential to ensure that the required levels of flight safety and security are maintained as airport and airspace capacity expands.

ICAO's regular functions include a wide range of activities that assist in reducing or preventing airport and airspace congestion problems. Two major fields are principally involved—the technical or air navigation field and the air transport field. In the air transport field the relevant activities are mainly in the areas of forecasting and economic planning, facilitation, and airport and route facility management. These activities are briefly described below.

Forecasting and Economic Planning

To assist States in establishing their needs for future overall aviation planning requirements, ICAO prepares long-term global and regional passenger and freight traffic forecasts. These global and regional traffic forecasts are published triennially in ICAO circulars which review the economic situation of air transport, the current one being Circular 222. More detailed regional forecasts are presented in the series of ICAO regional studies on international air passenger and freight transport, the most recent of which is the study on International Air Passenger and Freight Transport—Middle East, 1989 (Circular 221).

More specific forecasts are carried out on an ad hoc basis. For example, forecasts of air traffic movements for certain selected regions were recently developed in support of the work of the Committee on Future Air Navigation Systems(FANS). This Committee was established by ICAO to study technical, operational, and other questions relating to future potential air navigation systems over the next 25

years.

To assist States in their own forecasting and planning, ICAO has published a Manual on Air Traffic Forecasting(Doc 8991) and has included a chapter on forecasting for planning purposes in the Airport Planning Manual, Master Planning(Doc 9184).

Facilitation

ICAO's facilitation programme makes an important contribution to the prevention of airport and airspace congestion problems, or their alleviation, through the simplification and acceleration of airport clearance procedures. Also important to facilitation is the design of airports and terminal buildings. The Standards and Recommended Practices of Annex 9 to the Chicago Convention cover all aspects of facilitation for application by ICAO Member States. Annex 9 sets forth streamlined procedures for the rapid and efficient clearance of aircraft, passengers, baggage, freight and mail on entry, departure and transit, as well as the facilities and services to be provided at international airports.

The 10th Session of the Facilitation Division(FAL/10) held in September 1988, undertook a comprehensive review of the Standards and Recommended Practices of Annex 9, adopting 90 Recommendations to this end. The implementation of the revised Ninth Edition of Annex 9 by States will make a positive contribution to alleviating airport and airspace congestion problems. FAL/10 also recommended that States be strongly urged to continue to achieve further conformity between their national regulations and practices and the provisions of Annex 9 and that ICAO pursue this objective to the fullest extent possible. Facilitation are meetings are held by ICAO to encourage increased implementation of Annex 9 and discuss facilitation matters,

which are also dealt with in facilitation missions to States.

Airport and Route Facility Mangement

Shortage of funds to cover the costs of operation and capital investment tends to be the most critical factor preventing the implementation of facilities necessary to reduce or prevent airport and airspace congestion in a large number of States. ICAO has been actively involved in assisting States in resolving these problems. Policy guidance on airport and route facility cost recovery has been developed and is contained in the Statements by the Council to Contracting States on Charges for Airports and Route Air Navigation Facilities(Doc 9082/3). Other guidance material on airport and route facility management is contained in various other ICAO documents, including the Airport Planning Manual, Master Planning(Doc 9184) and the Manual on Route Air Navigation Facility Economics(Doc 9161/2). Work is presently proceeding on the development of an ICAO Airport Economics Manual. This will provide guidance on such subjects as airport organizational structures, financial control and accounting, charging systems, and airport non-aeronautical revenue development.

Future work

The work referred to above will continue to be pursued as part of the work programme of ICAO. This includes a new item in the programme budget of the Organization for the 1990-1992 triennium dealing with financial and managerial aspects of airport and airspace congestion. The undertaking of additional activities that would assist in reducing or preventing congestion will depend on the availability of the necessary resources.

Some new or enhanced activities which could prove valuable would

be a more comprehensive ICAO forecasting programme including research on methodologies for development of traffic forecasts for airport and systems planning on a specific regional or area basis and under differing scenarios, and the establishment of a linkage between forecasts of passenger and freight traffic demand and forecasts of aircraft movements ; additional measures to improve the implementation of ICAO's facilitation programme ; additional measures to encourage more States to introduce machine readable passports and visas, and associated reading equipment at airports ; consideration of the question of aircraft access to international airports ; and identification of problems that can best be solved through multinational facilities and services and outlining how they should be established in each case.

IV. Fleet renewal and investment in airport infrastructure

This chapter provides background information on problems associated with the difficulties being faced by many airlines, airports and aviation authorities in meeting the increasingly large investments necessary to keep pace with technological developments and growing capacity requirements.

Nature of the Difficulties

In 1989, the number of passengers carried by the world's airlines approximated one-fifth of the world's population. By the year 2000, the number of passengers is expected to almost double. To meet traffic demands on such a scale, ever larger investments need to be made in aircraft, airport facilities and air traffic control systems, in addition to the already major investments required to meet such needs

as increased security, the replacement of instrument landing systems (ILS) with microwave landing systems (MLS), the alleviation of congestion and compliance with aircraft noise restrictions.

Estimates suggest that the required spending by airlines alone will be about US \$ 500,000 million (in 1988 \$) between 1988 and the year 2005—an average investment of \$ 30,000 million a year—compared to outlays of US \$ 225,000 million over a similar time-frame between 1970 and 1988. For both airlines and airports the availability of investment funds from internal and governmental sources continues to be limited. Particular difficulties are encountered in many developing countries as a result of national economic conditions which also affect their ability to raise funds to meet foreign currency obligations.

A. Financing Fleet Renewal

Conventional financing of aircraft

Conventional financing generally involves funding from a combination of internal and external sources. Internal funds consist of retained earnings, depreciation and proceeds from the sale of assets. External funds include capital raised from offerings of equity securities, long-term debt from institutional investors including insurance companies, asset-based financing, and term loans and revolving credit from commercial banks.

Airline earnings tend to be cyclical and industry returns on investment generally have been poor. With a few notable exceptions, airline cash flows over the long-term have been inadequate to meet capital requirements. Cash flows have also been affected by changes in depreciation periods and investment tax credits associated with tax reform in many countries.

The creditworthiness of an airline, which influences the terms un-

der which it is able to obtain external funds, is in part determined by the proportion of debt owed in relation to its equity. The ratio of debt to equity for many airlines has increased to levels which limit the options available to them and affect their cost of finance.

New trends in aircraft financing

The methods used to finance aircraft acquisition have become increasingly varied as the factors influencing airline fleet planning and decision-making have become more complex and diverse.

Various forms of lease arrangements have enabled air carriers to supplement conventional sources of finance. Lease arrangements have permitted airlines to obtain aircraft without having to make down-payments or incur heavy capital outlays, while lessors have been assured the security of ownership of the equipment and an attractive return from a combination of tax benefits, payment of interest on the investment and, in certain cases, the residual value of the equipment at the end of the lease term, which may have actually increased.

Particular difficulties for airlines of developing States

Many airlines of developing States encounter serious difficulties in financing the acquisition of aircraft. Even an airline which is well-managed is affected by the general economic situation of its home State. This bears on the availability and cost to the airline of finance from commercial banks, on its ability to obtain traditional export financing and credit guarantees and on its ability to obtain foreign exchange to repay obligations. Obligations denominated in foreign currency may be especially hard to meet when domestic inflation is high and the national currency is subject to frequent adjustments. Furthermore, the cost of modern aircraft is such that fewer governments of developing countries appear prepared to provide subsidies,

loans and loan guarantees to their air carriers.

Potential relief for airlines of developing countries takes several forms. To reduce the cost of repaying loans, suggestions have been made to amend the Organization for Economic Co-operation and Development(OECD) Large Aircraft Sales Understanding(LASU) to extend the 12-year limitation on officially guaranteed credit. Measures being adopted to ease the debt repayment difficulties of some developing countries include so-called debt-equity swaps involving the cancellation of debt by foreign creditors in debt-equity swaps involving the cancellation of debt by foreign creditors in return for equity or physical assets, which in theory could be applied to airline assets. An important risk to the lessor in any international transaction, which may be higher in the cases of some developing country airlines, lies in the danger that it may not be possible, for legal and/or political reasons, for the lessor to repossess a leased aircraft should this become necessary. Means of reducing such risks have been suggested in the form of the World Bank's proposed Multilateral Investment Guarantee Authority(MIGA) and of Boeing's International Equipment Trust(IET).

B. Financing Airport Infrastructure

Three factors have a particular bearing on the way airports finance their investment requirements. First, most international airports do not recover their total costs, the main exceptions being the major international airports in Western Europe and North America and certain high volume airports in other regions. Second, increases in airport capacity usually take place in large and very costly steps, such as with the addition of a runway or terminal, and take a relatively long time to complete. Once committed, an airport cannot sell off its

excess capacity when demand falls below expectations. Third, international, regional airports are mostly operated by government authorities at the national, regional or local level as public utilities rather than as commercially-oriented corporations.

Sources of funds

Funds for investments in airport infrastructure can be partly self-generated by the airport concerned, or come from sources external to the airport, taking such forms as loans, bond issues, grants or aid. Self-generated funds, apart from depreciation, are exceptions since relatively few airports produce an operating surplus sufficient to enable them to build up sizeable reserves. However, a number of major airports, notably in Western Europe and North America, have had some success in this regard, although these airports have had to supplement their own funds with loans, raised either by themselves or by a government or governmental authority on their behalf, but which the airport concerned is responsible for servicing and repaying. In the United States, special airport bond issues are used to finance airport capital requirements, with the airport being responsible for debt servicing and repayment.

Aspects particular to airports in developing States

International airports in most developing States are operated at a deficit and depend on subsidies, grants or loans to remain operational. The major reason for this is the under-utilization of facilities because the capacity required for an international airport to meet its traffic requirements, even on a small scale, is often greater than can be financially supported by the traffic handled. The importance of airports to the national economies involved may justify their subsidization from public funds, but airports must nevertheless compete with

other sectors of the national economy for limited funds, whether provided from domestic or foreign sources.

Airport investments in developing States are often financed in large part from foreign sources. These may include loans negotiated on the airport's behalf by the State concerned or as part of a loan to a State for infrastructure investment purposes from such institutions as the World Bank. Regional development banks also play an important role in airport financing. These include the African, Asian and Caribbean Development Banks, the European Development Fund, the Islamic Development Bank and the Arab Development Fund. While the loan may be negotiated by the State, in some cases a portion of the cash flow generated by the airport concerned may be applied to debt servicing and repayment.

As in the case of airlines, loans for airport development are also often made by export credit agencies operated by a number of States. Such loans tend to be made for equipment or specific airport infrastructure components rather than for entire airport projects. Foreign suppliers or contractors may also assist in obtaining financing, particularly when their ability to arrange for financing has been made a condition for their involvement in the sale or project concerned.

C. Role of ICAO

ICAO is not a financial institution however, ICAO does provide an essential statistical and forecasting data base for use by planners in all States and monitors the economic and financial situation of airlines, airports and route air navigation facilities worldwide. ICAO also provides some basic advice and background information relating to financing. The Airport Economics Manual, scheduled for completion by late 1990, will for example contain advice on such matters as the

assessment of airport financing requirements, sources of funds and repayment of loans. In addition, ICAO, through its Technical Assistance programme, provides advice to individual States, particularly in the field of training. Financial management assistance is also often included in technical assistance programmes at the request of the recipient country. This may be specific advisory assistance or formal training under a project fellowship programme.

V. Other major problems

In view of the limited time for presentation, the other major problems are described below only briefly with indication of ICAO's action taken or planned which should give the participants an opportunity to assess their possible role in the overall process of resolving these problems and to see the sources of further information and advice.

1. Airline access to distribution channels

Several developments in recent years have altered the ways in which airlines now distribute their products to prospective passengers. While travel agents continue to be major distribution channels their traditional neutrality(as between airlines) is often compromised by incentives paid by some carriers, for example commission levels which grow as the volume of sales made on that carrier increase. The widespread placement in travel agencies of airline-owned CRSs(which are often programmed to favour the owner's services) has similarly affected distribution. As a result, in many countries passengers can no longer always expect the marketing of their products by travel agents to be based solely on the products' merits. These incentives

to favour a certain airline or airlines may impact negatively on the fair and equal opportunity of other carriers to compete. In a related development, the implications of which are at present difficult to foresee, carriers could lose some control over the distribution of their own products as third parties such as banks, giant retail outlets and other owners of large-scale information and communications networks become increasingly involved in the travel industry.

ICAO has already addressed some CRS aspects of the developments concerned, notably in Circular 214, Guidance Material on the Regulation of Computer Reservation Systems(1988). The work is continuing with a view to developing recommendations relevant to maintaining a fair and equal opportunity for air carriers to compete and to protecting the travelling public while fostering the interests of international air transport.

In particular we presently are exploring regulatory aspects of CRSs including the possible development by ICAO of a multilateral code of conduct or a model bilateral clause.(N.B. In case of particular interest to the subject of CRSs a significantly more comprehensive presentation can be made.)

2. Code-sharing

Code-sharing is the agreed use by one air carrier of the designator code of a second carrier. The code-borrowing carrier thus identifies particular flights which it operates as flights of the second carrier whose code it is sharing. The code-borrowing carrier may have an equity-based relationship and/or a joint marketing arrangement with the second carrier, whereby it operates agreed services identified solely by the shared code. Alternatively, a code-borrowing airline may hold out services under its own designator code as well as that of

the other carrier, a more common practice on international sectors. The latter practice typically is accompanied by an arrangement involving the sale of a block of space by the operating airline to the other carrier.

Code-sharing has raised regulatory concerns in some States. They include :

- a) whether code-sharing between international and domestic airlines of one State may detract from the fair and equal opportunity of market ;
- b) whether airlines which wish to code-share possess sufficient and appropriate agreed traffic rights ;
- c) whether a code-sharing service involving an en-route change of aircraft may be receiving an unwarranted preference in display priority in computer reservation systems(CRSs) ; and
- d) whether travellers are being misled insofar as they may or may not have been informed that their journey involves flying on an aircraft under the operational control of an airline other than the one for which they are ticketed.

ICAO has thus far addressed only CRS aspects of code-sharing. Developments in the broader aspects of code-sharing which pertain to traffic rights and fair and equal opportunity will be monitored to further identify possible problem areas and consequences for international civil aviation, with a view to providing guidance on their avoidance or resolution.

3. Economic situation of airports and route air navigation facilities.

The majority of States, particularly developing States, are still not recovering the full costs of providing their principal international airports and their route facilities from operating revenues. The resul-

tant shortfalls are generally made up by the Governments concerned. In many States this represents a significant burden for the national economy. The main reasons for this situation are relatively high capital costs and low or uneven levels of utilization, the need to keep charges on aircraft operators at reasonable levels and the widespread practice of imposing significantly lower charges on domestic traffic.

ICAO policy guidance on airport and route facility cost recovery is provided in the Statements by the Council to Contracting States on Charges for Airports and Route Air Navigation Facilities(Doc 9082/3). Other ICAO documents providing supplementary guidance are the Airport Planning Manual, Part 1—Master Planning(Doc 9184-An/902, Part 1) which contains guidance on airport financial control and accounting, the Manual on Route Air Navigation Facility Economics(Doc 9161/2), the Manual of Airport and Air Navigation Facility Tariffs (Doc 7100) which is updated and reissued annually, and the Development of Non-Aeronautical Revenues at Airports(Circular 142-AT/47). Assistance on airport and route facility management is also provided to States through a special programme of regional workshops.

The Organization is now in the process of developing an Airport Economics Manual, scheduled for completion in 1990. General guidelines have also been developed on the subject of financial and managerial aspects of multinational air navigation facilities and services, the first set of which are contained in a Attachment to the Introduction of the EUR Regional Plan(Doc 7754).

4. Facilitation of international air transport

The growth of traffic experienced in recent years, coupled with the new constraints imposed by security requirements, the need to eliminate narcotics trafficking and to cope with the rising number of

passengers arriving without adequate documentation continue to present facilitation problems around the world. The expected doubling of traffic over the next decade and the high cost of providing airport capacity have given strong emphasis to the need for efficient clearance procedures. In high traffic locations the resulting problems are being met with new methods and equipment such as machine-readable passports and visas ; advanced methodologies for detecting explosives, armaments, narcotics and other illegal shipments ; advance manifesting ; and computerized clearance procedures.

These new methodologies are costly, however, and despite their advantages may not be affordable for a number of countries, particularly if significant financial constraints exist. Funds available for technical assistance have also been reduced and experience indicates that even when such funds are available, States are not inclined to give a sufficiently high priority to problems of facilitation. Estimates of the losses attributable to inefficient clearance procedures for merchandise trade have been established by the United Nations Conference on Trade and Development(UNCTAD) at ten per cent of the value of the goods in trade, five per cent on export and five per cent on import. Based on the present value of world trade and estimates of the share carried by air, this would place a value of several billion US dollars per annum on the savings achievable through improved facilitation of air cargo alone.

ICAO maintains an on-going programme for improving facilitation in Contracting States through missions by Headquarters and Regional Office personnel as well as annual Facilitation Area Meetings in the regions. The implementation of ICAO's Facilitation programme is reviewed every three years by the Council, pursuant to Assembly Resolution A16-27, and problem areas are selected for special action

by States. Periodically, Sessions of the Facilitation Division are convened to review the FAL programme and up-date the provisions of Annex 9. The most recent Session(FAL/10) was held in 1988.

The Tenth Session of the Facilitation Division undertook the most comprehensive review of the Standards and Recommended Practices of Annex 9 since they were first adopted in 1946. Among the key recommendations of the FAL Division were those related to aviation security, narcotics trafficking and facilities for elderly and disabled persons. The Division also made recommendations concerning inadequately documented passengers, courier shipments, and electronic data processing of clearance information. Existing provisions of the Annex dealing with aircraft disinsection and public health were updated. New provisions were recommended on the fuelling of aircraft during hours established by the public authorities, transportation of passengers and crews to and from remote aircraft parking positions, ground transportation, monetary exchange facilities, the use of credit cards for airport services, and duty-free shops for arriving passengers. New and consolidated provisions were adopted to facilitate the movement of aircraft equipment and spare parts, and of ground, training and security equipment. The Division recommended a goal of 45 minutes for the clearance of passengers at international airports, expanded use of the dual-channel baggage clearance system and greater facilitation for disaster relief flights, flights engaged in the relief of marine pollution and flights involving other facilitation committees in Contracting States and consolidated in Annex 9 all relevant guidance material concerning their membership, terms of reference and methods of operation.

5. National regulation of airline transborder data flows

International air carriers electronically transmit much machine readable data across national borders. A significant part is personal data such as the names, addresses, telephone numbers, itineraries, dietary requirements and ground arrangements of passengers. Since the 1970s the growing computerization of name-linked data has led several States to enact laws to protect the privacy of their residents and to restrict the outflow of such data to countries without comparable protection. In 1987 IATA adopted Recommended Practice 1774 which incorporates the principles of the 1980 OECD "Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data" and those of the 1985 Council of Europe "Convention for the Protection of Individuals With Regard to Automatic Processing of Data", but no world-wide governmental standards exist. Consequently, concern remains that the application of national privacy laws to international airlines without regard to their special needs could severely restrict the transborder flow of information essential to air services. Similarly, the potential taxation of transborder data flows by some States could harm the air transport industry.

ICAO Circular 214-AT/84, Guidance Material on the Regulation of Computer Reservations Systems, address the subject of safeguarding the privacy of personal data while maintaining the free flow of airline information in the context of CRS. The Organization will continue to monitor the issues of potential impediments to airlines' transborder data flows and possible taxation thereof.

6. Regional economic integration-Air service concerns of non-participating States

The creation of unified regional markets, notably the single Euro-

pean market planned for effect within the European Community from 1992 but also arrangements under consideration in other parts of the world, have raised concerns on the part of non-participating States. In the area of international air transport such concerns have arisen about potential adverse effects of the national airlines of non-participating States which operate air routes to, from and, in some cases, continuing within the integrated region. Such potential adverse effects have been perceived in several forms.

One form could be that Fifth Freedom traffic rights between national territories within the union would be no longer available for air carriers based outside the region. This could be particularly damaging to the operation of long, low volume routes which require some Fifth Freedom traffic support at the outer ends.

A second could be the creation of a mega-carrier or carriers within the bloc, by merger, alliance, minority equity holding, co-operative marketing or other means, the effect of which might be to threaten existing balances of fair and equal opportunity to compete enjoyed by the air carriers of the concerned non-participating States. A corollary to this could be the concern by States which may find it difficult to continue to obtain some bilateral balance of air transport benefits when the ownership of a merged foreign carrier, or closely allied foreign carriers, comes to involve more than one other State.

A third concern arises over potential side effects upon the carriers of non-participating States by the bloc implementation of various internal regulations. This could include competition law decisions, internal traffic rights and pricing regulation, taxation matters, and consumer protection actions (for example to regulate CRS) among others, all of which presumably would be intended to affect the internal air system of the bloc but could affect externally-based air carriers as

well.

ICAO is at present closely monitoring events in this area and is planning to develop analyses and guidance for all Contracting States. Additionally, ICAO is developing a closer relationship with regional organizations, including exchanges of views and documentation.

7. Transnational alliances amongst airlines

A number of airlines of different States have recently involved themselves in joint marketing arrangements or more extensive alliances with foreign airlines and even purchased minority equity participation in airlines based in other States and regions. While such arrangements may provide substantial benefits for the airlines involved, depending on the circumstances they also raise possible concerns regarding reduction of competition, the impact on airlines which are not participating and the authorisation by States of the operations of foreign airlines which have come to be owned (and/or to an extent possibly controlled at least in part) by nationals of States other than where the foreign airlines are based.

ICAO will monitor this matter with a view to deciding whether appropriate advice to States should be developed.

8. Measures to prevent unlawful interference with international civil aviation-financing and cost recovery aspects

The security measures required to prevent unlawful interference with international civil aviation, including upgrading the level of security, have given rise to problems for many States because of the substantial funds required to finance their provision and operation.

ICAO provided specific guidance on the introduction of security charges to cover relevant costs, including references to cost identifica-

tion, charging systems and consultation with users in the Statement by the Council to Contracting States on Airport Charges in Doc 9082. The ICAO Airport Economics Manual, scheduled for completion in 1990, will contain specific guidance material on establishing the cost basis for security charges. Moreover, the regional Workshops on Airport and Route Facility Management address ICAO policy on cost recovery, guidance on establishing the cost basis for security charges and charging methods as well as other matters related to recovery of security costs. ICAO also monitors airport security charges levied by States and includes them in the Manual of Airport and Air Navigation Facility Tariffs(Doc 7100) which is revised and published annually. Arrangements are also being made through ICAO for bilateral assistance to States on security.