

Doc 9562



Airport Economics Manual

Approved by the Secretary General
and published under his authority

Third Edition — 2013

International Civil Aviation Organization

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AMENDMENTS

Amendments are announced in the supplements to the *Catalogue of ICAO Publications*; the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS		
No.	Date	Entered by

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FOREWORD

ORIGIN AND OBJECTIVE

1. In June 1986, the ICAO Air Transport Committee decided that a manual on airport economics should be developed; consequently, the first edition of the *Airport Economics Manual* (Doc 9562) was released in 1991. In April 2001, the Air Transport Committee decided that the *Airport Economics Manual* should be revised as a follow-up to the Conference on the Economics of Airports and Air Navigation Services (ANSCConf 2000). In view of developments that have taken place since then, which were emphasized at the Conference on the Economics of Airports and Air Navigation Services (CEANS 2008), the Air Transport Committee decided, in May 2009, that the *Airport Economics Manual* should be revised and updated.

2. The objective of this manual is to provide practical guidance to States, airport managing and operating entities, and designated charging and regulatory authorities, to assist in the efficient management of airports and in implementing ICAO's *Policies on Charges for Airports and Air Navigation Services* (Doc 9082).

SCOPE

3. This guidance takes into account the wide range of different circumstances faced by airport operators. It is based on international policies and principles on airport cost-recovery that States have developed through ICAO, and describes procedures and practices that are in conformity with these policies and principles. The basis for these policies and principles is set out in Article 15 of the *Convention on International Civil Aviation* (Doc 7300), the charter of ICAO. Extensive policy guidance in this area was subsequently developed by the ICAO Council and is contained in Doc 9082.

4. The guidance material in this manual is presented in six chapters, five associated appendices, a glossary of terms as used in this manual and an index. Chapter 1 addresses ICAO's policies on airport charges and States' responsibilities; Chapter 2 focuses on airport ownership, control and governance issues; Chapter 3 deals with airport economic and financial management, including economic performance management; Chapter 4 provides guidance on determining the cost basis for airport charges, as well as the costs attributable to concessions and other non-aeronautical activities, and guidance on the setting of individual air traffic charges and their collection; Chapter 5 addresses the development and management of non-aeronautical activities; and Chapter 6 provides guidance on financing airport infrastructure.

5. Special care has been taken, throughout this manual, to ensure consistency and harmonization with the companion document — *Manual on Air Navigation Services Economics* (Doc 9161).

SOURCES

6. This third edition of Doc 9562 has been developed with the assistance of a panel of experts on airport economics — the Airport Economics Panel (AEP). The principal sources were the second edition of the manual, ICAO's *Policies on Charges for Airports and Air Navigation Services* (Doc 9082, Ninth Edition), the *Report of the Conference on the Economics of Airports and Air Navigation Services* (CEANS 2008 — Doc 9908), and the *Manual on Air Navigation Services Economics* (Doc 9161). Additional ICAO source documents included Annexes to the *Convention on International Civil Aviation*, manuals, reports, circulars and studies, as well as individual consultations by the Secretariat.

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GLOSSARY OF TERMS

Note.— The following terms are described as they apply in the context of this manual. This list is not exhaustive. Other terms, for which a definition is provided in the body of the manual, may be found in the Index.

Amortization. The gradual extinguishment of the cost of an asset by periodic (annual) charges to expenses, usually applicable to intangible assets (e.g. development costs).

Asset. A resource from which future economic benefits are expected to flow to the entity that owns or controls it.

Autonomous entity. An independent entity established for the purpose of operating and managing one or more airports, which is empowered to manage and use the revenues it generates to cover its costs.

Benchmarking. The process of either making comparisons over time within a single organization (internal benchmarking) or of comparing performance between two or more organizations (external benchmarking) in order to make improvements.

Best practices. Practices that, over time, have proven cost-effective, efficient and successful in bringing quality products and services to the marketplace.

Bond. Documentary promise to repay long-term borrowed money with interest at a definite or determinable future date.

Capital assets. Assets acquired with the expectation that they will remain in service for a number of accounting periods.

Capitalizing expenditure. The recording and carrying forward into one or more future financial periods as a depreciable asset any costs the benefits of which will be realized over the period(s) concerned.

Cash flow. The net amount of money received by an entity over a given period.

Charge. A levy that is designed and applied specifically to recover the costs of providing facilities and services for civil aviation.

Commercialization. An approach to management of facilities and services in which business principles are applied or emphasis is placed on development of commercial activities.

Concession. The right to operate a certain commercial activity at the airport, commonly on an exclusive basis and usually at a specified location.

Corporate governance. Overseeing the running of a company or an entity by its management and its accountability to shareholders and other interested parties.

Cost of capital. The cost of raising debt or equity funds.

Current assets. Assets that can be realized within one year.

Depreciation of assets. The decrease in the value of an asset due to wear and tear through use, action of the elements, inadequacy or obsolescence, normally over a predetermined period of time (depreciation period/book life of the asset).

Differential charges. Any preferential charges, rebates, discounts or other reductions in the charges normally payable for the use of airport facilities and services.

Direct transit passengers. Passengers arriving at an airport of a State and continuing their journey on the same through flight (differs from “transfer/connecting passengers” defined below).

Dividends. Distribution of earnings in cash or in stock.

Economic life (of an asset). The period during which an asset is expected to yield a rate of return.

Economic oversight. The function by which a State supervises commercial and operational practices of an airport.

Equity capital. Money furnished by the owner(s) of the entity.

Financial statements. These include the income statement and the balance sheet. The income statement summarizes all revenues and expenses, with the difference between the two totals being either a profit or a loss. The balance sheet summarizes assets and liabilities, with the difference between the two representing an increase or decrease in net worth.

Fixed assets. Tangible assets that are permanent in nature and generally held for a period of more than one year (normally buildings and equipment).

Fixed costs. Costs that in the short-term remain unchanged regardless of whether or not the volume of services provided increases or decreases.

Fuel “throughput” charges. A concession fee levied by an airport on aviation fuel sold at the airport.

General aviation. All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire.

Key performance areas (KPIAs). Key areas of performance corresponding to the expectations of providers, regulators, users and other interested parties.

Key performance indicators (KPIs). Current/past performance, expected future performance (estimated as part of forecasting and performance modelling), as well as actual progress in achieving performance objectives is quantitatively expressed by means of indicators. Since indicators support objectives, they should be defined having a specific performance objective in mind.

Lease. The right to occupy certain defined premises or possess some equipment for a fixed period, which may be used for business purposes. The premises or equipment are returned to the owner on expiry of the lease, generally without paying any compensation.

Liabilities. Debt of the entity in the form of financial claims on an entity's assets.

Liquidity. A state or situation determined by the extent or degree of possession of assets that are immediately available for discharge of financial obligations.

Local air quality (LAQ) emissions-related charges. Charges levied on aircraft with respect to aircraft engine emissions that have effects on local air quality.

Marginal cost. The cost of producing another unit or output.

Modulated charges. Charges that are adjusted according to the time and/or situation of use of the facility or service concerned (for example, peak/off-peak hours, air traffic congestion, noise and local air quality aspects).

Multiplier effect. Normally expressed as a factor showing how much the direct economic impact of the airport is increased by the indirect and induced economic effects of airport activities.

Net asset value. The value of the total assets of an entity after deduction of all debts (equals equity capital).

Operating life (of an asset). Period of time that a fixed asset can be used.

Performance management. An interactive process through which the performance of providers is expected to improve over time. This process consists of several steps, i.e. defining performance objectives, selecting performance indicators and setting their targets, monitoring performance, and reporting and assessing performance.

Pre-funding. Financing of an airport facility project through charges levied on users prior to completion of the facility concerned.

Price cap. The maximum price set under a prices policy or under specific legislation.

Private involvement. Minority participation or involvement of a private entity in the ownership of certain facilities and services. Private involvement may also take the forms of management contract or lease.

Privatization. Transfer of full or majority ownership of facilities and services to the private sector.

Providers. In this document, refers to entities providing and operating airports.

Rental of premises. The right to occupy certain defined premises or a specific area of land against payment of a fee.

Residual value. Cost (of an asset) less any part of the cost that has been depreciated or amortized, or treated as an expense or loss.

Revenues from non-aeronautical sources. Any revenues received by an airport in consideration for the various commercial arrangements it makes in relation to the granting of concessions, the rental or leasing of premises and land, and free-zone operations, even though such arrangements may in fact apply to activities that may themselves be considered to be of an aeronautical character (for example, concessions granted to oil companies to supply aviation fuel and lubricants and the rental of terminal building space or premises to aircraft operators). Also intended to be included are the gross revenues, less any sales tax or other taxes, earned by shops or services operated by the airport itself.

Tax. A levy that is designed to raise national or local government revenues which are generally not applied to civil aviation in their entirety or on a cost-specific basis.

Transfer (or connecting) passengers. Passengers arriving at an airport of a State and continuing their journey on another flight at the same or another airport of that State (differs from “direct transit passengers” defined above).

Users. This term refers to aircraft operators as users of airport facilities and services. The term “end-users” refers to ultimate consumers in general (for example, passengers and shippers).

Chapter 1

ICAO'S POLICIES ON CHARGES AND STATES' RESPONSIBILITIES

This chapter focuses on ICAO's key policies on airport charges and the responsibilities assigned to Contracting States under the *Convention on International Civil Aviation* (the Chicago Convention — Doc 7300).

Part A addresses the basic principles expressed in: a) Article 15 of the Chicago Convention; b) Assembly Resolutions on policies in the air transport field; and c) *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082).

Part B focuses on States' responsibilities regarding the provision of airport and air navigation facilities and services.

Part C summarizes ICAO's policies on objectives, forms and implementation of economic oversight for airports, as well as dispute resolution.

Part D summarizes ICAO's policies with regard to consultation with users on charges and airport development plans, as well as a "first-resort" mechanism.

A — ARTICLE 15 OF THE CONVENTION ON INTERNATIONAL CIVIL AVIATION, ASSEMBLY RESOLUTIONS AND ICAO'S POLICIES ON CHARGES

CONVENTION ON INTERNATIONAL CIVIL AVIATION

1.1 The basic principles established by ICAO in the area of charges for airports and air navigation services are expressed in Article 15 of the *Convention on International Civil Aviation* (Doc 7300), usually referred to as the Chicago Convention, as follows:

Airport and similar charges

Every airport in a contracting State which is open to public use by its national aircraft shall likewise, subject to the provisions of Article 68, be open under uniform conditions to the aircraft of all the other contracting States. The like uniform conditions shall apply to the use, by aircraft of every contracting State, of all air navigation facilities, including radio and meteorological services, which may be provided for public use for the safety and expedition of air navigation.

Any charges that may be imposed or permitted to be imposed by a Contracting State for the use of such airports and air navigation facilities by the aircraft of any other Contracting State shall not be higher,

- a) As to aircraft not engaged in scheduled international air services, than those that would be paid by its national aircraft of the same class engaged in similar operations, and
- b) As to aircraft engaged in scheduled international air services, than those that would be paid by its national aircraft engaged in similar international air services.

All such charges shall be published and communicated to the International Civil Aviation Organization, provided that, upon representation by an interested contracting State, the charges imposed for the use of airports and other facilities shall be subject to review by the Council, which shall report and make recommendations thereon for the consideration of the State or States concerned. No fees, dues or other charges shall be imposed by any contracting State in respect solely of the right of transit over or entry into or exit from its territory of any aircraft of a contracting State or persons or property thereon.

1.2 In summary, Article 15 of the Chicago Convention sets out the following three basic principles:

- uniform conditions shall apply to the use of airports and air navigation services in a Contracting State by aircraft of all other Contracting States;
- the charges imposed by a Contracting State for the use of such airports or air navigation services shall not be higher for aircraft of other Contracting States than those paid by its national aircraft engaged in similar international operations; and
- no charge shall be imposed by any Contracting State solely for the right of transit over or entry into or exit from its territory of any aircraft of a Contracting State or persons or property thereon.

The first two principles, which relate to non-discrimination, do not appear to have given rise to misunderstandings. However, in some instances, the third principle has been interpreted to mean that no charges are to be levied when an aircraft flies into, out of or over a State. That, however, is not the intent of this principle, since all States are fully within their rights to recover, through user charges, the costs incurred in the provision of airport and air navigation facilities and services. The substance of this principle is in fact that a State should not charge solely for granting an authorization for a flight to operate into, out of or over its territory.

1.3 Two other aspects are also addressed in Article 15. The first is that States are obliged to publish their airport and air navigation services charges, and also communicate them to ICAO. This information is collected and published by ICAO in the *Tariffs for Airports and Air Navigation Services* (Doc 7100).

1.4 Article 15 also provides for ICAO, upon representation by an interested Contracting State, to review the charges imposed and make recommendations thereon to the State or States concerned. It should be noted that the Article specifically refers to representation by an interested Contracting State only, not by any other party.

1.5 As to the status of the principles in Article 15 and, for that matter, all the Articles of the Chicago Convention, an ICAO Contracting State cannot exempt itself from applying any of the principles expressed therein since by signing the Chicago Convention the signatory State binds itself to adhere to all its Articles without exception.

ASSEMBLY RESOLUTIONS

1.6 ICAO's policies in the air transport field are expressed in consolidated Assembly Resolutions, which are updated at each ordinary session of the Assembly. These Resolutions address policy matters in all sectors of the ICAO Air Transport Programme, through dedicated appendices. The latest Assembly Resolution in force is A37-20 —

Consolidated statement of continuing ICAO policies in the air transport field, where Appendix F relates to airports and air navigation services. A37-20 — Appendix F urges Contracting States to ensure that Article 15 of the Convention is fully respected, regardless of the organizational structure under which airports and air navigation services are operated, and reminds States that they alone remain responsible for the commitments they have assumed under Article 28 of the Chicago Convention.

1.7 ICAO's policies on environmental levies are expressed in Assembly Resolution A37-18 — *Consolidated statement of continuing ICAO policies and practices related to environmental protection — General provisions, noise and local air quality*, where Appendix H relates to *Aviation impact on local air quality*.

1.8 The use of charges for the purpose of environmental protection may be applied in two areas: aircraft noise and aircraft engine emissions. ICAO's policies on noise-related charges are contained in *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082 — Ninth Edition), Section II, paragraph 8. Aircraft engine emissions have an impact on the environment at two levels: a) on local air quality (LAQ); and b) globally. Policies regarding LAQ-related charges are contained in Doc 9082, Section II, paragraph 9. At the global level, ICAO's policies are in favour of using measures other than levies.

ICAO'S POLICIES ON CHARGES

1.9 Additional and more detailed policy guidance on charges for airports and air navigation services is provided in Doc 9082. The policies on user charges are revised periodically by the Council following major international conferences on airport and air navigation services economics, although most of the basic philosophy and principles have remained unchanged over the years. ICAO's policies on charges differ in status from the Chicago Convention in that an ICAO Contracting State is not legally bound to adhere thereto, unlike the Articles of the Chicago Convention. However, since the principles in Doc 9082 are based on recommendations by major international conferences, States are morally committed to follow them and to ensure that their cost recovery practices conform thereto. Paragraph 1 in the Foreword of Doc 9082 notes that, as per a recommendation adopted by the Conference on the Economics of Airports and Air Navigation Services (CEANS — 2008), States are encouraged to incorporate the four key charging principles of non-discrimination, cost-relatedness, transparency and consultation with users in their national legislation, regulations or policies, as well as in their air services agreements, in order to ensure compliance by airport operators and air navigation services providers (ANSPs).

1.10 An important consideration of Doc 9082 is that there should be a balance between the respective interests of airports and ANSPs on one hand and of aircraft operators on the other, particularly in view of the importance of an air transport system to States and its influence in fostering economic, cultural and social interchanges between States. This especially applies during periods of economic difficulty; therefore, it is recommended that States encourage increased cooperation between airports/ANSPs and aircraft operators to ensure that economic difficulties facing them are shared in a reasonable manner (Doc 9082, Foreword, paragraphs 4 and 8).

1.11 Section I of Doc 9082 addresses some issues that are common to airports and air navigation services: scope and proliferation of charges; organizational and managerial issues; economic oversight; economic performance; consultation with users; prefunding of projects; and currency issues.

1.12 Section II of Doc 9082 concerns airport charges and is, together with Section I, the focus for the description in this part of the manual.¹

1.13 Paragraphs 2 and 3 of Section I of Doc 9082 express concern over the proliferation of charges on air traffic. It is recommended that States:

1. The highlighting of certain principles in Doc 9082 should not be interpreted to mean that these principles are more important than other principles in Doc 9082.

- i) permit the imposition of charges only for services and functions which are provided for, directly related to, or ultimately beneficial for, civil aviation operations; and
- ii) refrain from imposing charges which discriminate against international civil aviation in relation to other modes of international transport.

1.14 Experience gained worldwide indicates that where airports and air navigation services have been operated by autonomous entities, their overall financial situation and managerial efficiency have generally tended to improve (Doc 9082, Section I, paragraph 4). Therefore, it is recommended that, where this is economically viable and in the best interests of providers and users, States consider establishing autonomous entities to operate their airports and air navigation services (Doc 9082, Section I, paragraph 5). When considering the commercialization or privatization of airports and ANSPs, States should bear in mind that they are ultimately responsible for safety, security and economic oversight of these entities (Doc 9082, Section I, paragraph 6). Whenever an autonomous entity is established to operate an airport(s) and/or provide air navigation services, the State should ensure that all relevant obligations of the State specified in the Convention on International Civil Aviation, its Annexes and in air services agreements are complied with, and that ICAO's policies on charges are observed (Doc 9082, Section I, paragraph 7). Furthermore, States should ensure the use of best practices of good corporate governance for airports and ANSPs. In order to promote transparency, efficiency and cost-effectiveness in the provision of an appropriate quality of facilities and services, airports and ANSPs should apply management best practices in all areas of their business (Doc 9082, Section I, paragraphs 9 and 10).

1.15 The principles contained in Section II of Doc 9082 cover such subjects as the cost basis for airport charges, airport charging systems, landing charges, parking and hangar charges, passenger service charges, security charges, noise-related charges, emissions-related aircraft charges to address local air quality problems at or around airports, development of revenues from concessions, rental of premises and "free zones", and fuel concession fees.

1.16 Among the basic principles included in Doc 9082 concerning the cost basis for airport charges are that:

- where an airport is provided for international use, the users ultimately bear their full and fair share of the cost of providing the airport (Doc 9082, Section II, paragraph 1); and
- the cost to be allocated is the full cost of providing the airport and its essential ancillary services, including appropriate amounts for cost of capital and depreciation of assets, as well as the cost of maintenance, operation, management and administration. Consistent with the form of economic oversight adopted, such costs may be offset by non-aeronautical revenues (Doc 9082, Section II, paragraph 2 i)).

ICAO's policies on charges actively encourage the full development of revenues from non-aeronautical activities in general (Doc 9082, Section II, paragraph 10). This is the subject of Chapter 5 — Development and management of non-aeronautical activities, of this manual.

1.17 Other principles and recommendations of particular relevance in the context of the cost basis for airport charges and charging systems are that:

- airports should maintain accounts that provide a satisfactory basis for determining and allocating the costs to be recovered, and should provide adequate financial information to the users (Doc 9082, Section II, paragraphs 1 and 2 iv));
- the proportion of costs allocable to the various categories of airport users should be determined on an equitable basis, so that no users shall be burdened with costs not properly allocable to them according to sound accounting principles (Doc 9082, Section II, paragraph 2 vi));

- airports may produce sufficient revenues to exceed all direct and indirect operating costs and so provide for a reasonable return on assets at a sufficient level to secure efficient financing in capital markets for the purpose of investing in new or expanded airport infrastructure and, where relevant, to remunerate adequately holders of airport equity (Doc 9082, Section II, paragraph 2 viii));
- any charging system should, so far as possible, be simple and suitable for general application at international airports (Doc 9082, Section II, paragraph 3 i));
- charges should not be imposed in such a way as to discourage the use of facilities and services necessary for safety, such as lighting and navigation aids (Doc 9082, Section II, paragraph 3 ii));
- consistent with the form of economic oversight adopted, States should assess, on a case-by-case basis and according to local or national circumstances, the positive and negative effects of differential charges applied by airports. States should ensure that the purpose, creation and criteria for differential charges are transparent. Without prejudice to modulated charging schemes, the costs associated with such differential charges should not be allocated to users not benefiting from them. Charges offered for the purpose of attracting or retaining new air services should be offered on a temporary basis only (Doc 9082, Section II, paragraph 3 v));
- to avoid undue disruption to users, increases in charges should be introduced on a gradual basis; however, it is recognized that in some circumstances a departure from this approach may be necessary (Doc 9082, Section II, paragraph 3 vi)); and
- airport charges levied on international general aviation, including business aviation, should be assessed in a reasonable manner, having regard to the cost of the facilities needed and used and the goal of promoting the sound development of international civil aviation as a whole (Doc 9082, Section II, paragraph 3 ix)).

1.18 According to ICAO's policies concerning security charges (Doc 9082, Section II, paragraph 7), any charges or transfers of security costs should be directly related to the costs of providing the security services concerned and should be designed to recover no more than the relevant costs involved.

B — STATES' RESPONSIBILITIES

1.19 As noted in Part A above, Article 15 of the Chicago Convention establishes the basic charging principles for airports and air navigation services and reinforces the concept of freedom of access and non-discrimination set forth in Article 11 with respect to the use of facilities and services for the aircraft of the Contracting States in the operation of international air transport.

1.20 Also relevant is Article 68, which sets forth that each Contracting State may designate the route to be followed within its territory by any international air service and the airports which any such service may use.

1.21 Under Article 28 of the Chicago Convention, Contracting States are assigned basic responsibilities. For example, it is the State that is responsible for the provision of airport and air navigation facilities and services, in accordance with the standards and practices recommended or established from time to time, pursuant to the Convention.

1.22 In addition, States undertake obligations under their air services agreements, where again the State alone is responsible for the observance of stipulations addressing, for example, access to certain airports and routes and key charging principles such as non-discrimination, cost-relatedness, transparency and consultation with users.

C — ECONOMIC OVERSIGHT OF AIRPORTS

INTRODUCTION

1.23 As noted in Part A above, a State, in view of the potential abuse of dominant position of airports, is responsible for the economic oversight of their operations. Economic oversight is defined as the function by which a State supervises the commercial and operational practices of an airport. In performing its economic oversight function, a State should, in particular, ensure that airports consult with users and that appropriate performance management systems are in place.

1.24 When goods and services are supplied by competitors vying for customers, the economic well-being of consumers can often be left in the hands of market forces, which act as an “automatic regulator” for ensuring efficiency in setting prices and establishing the quantity and quality of supply. By contrast, when supply in a given market is dominated by a single provider, the question of regulatory intervention becomes a public concern.

1.25 Commercialization and privatization have been bringing more competition and commercial pressure on airports. Competition between airports may arise in varying circumstances, for example, long-haul hubs competing for origin-destination and transfer traffic; multiple airports in large conurbations owned and/or operated by separate entities competing in the same market; smaller non-proximate airports actively competing to attract point-to-point, short-haul services, particularly those offered by low-cost carriers (LCCs). However, this does not imply any changes to the responsibility of States regarding economic oversight, although it is likely to impact on which model of oversight the State may deem to be most appropriate. The market conditions and the degrees of competition are not uniform. Even in competitive markets, the focus by airports on competition and cost reduction may sometimes negatively affect the interests of certain categories of users. Furthermore, commercialization and privatization may have reduced the awareness of, and adherence by airports to, States’ international obligations including ICAO’s policies on charges. These responsibilities can only be assumed by the State itself.

OBJECTIVES OF ECONOMIC OVERSIGHT

1.26 Economic oversight works best when clear objectives and incentives are given to airports so that they can provide services in the most cost-effective manner and with an appropriate level of quality. Paragraph 13 of Section I of Doc 9082 sets out a number of objectives reflecting areas of potential need for appropriate economic oversight as follows:

- minimize the risk that airports could engage in anti-competitive practices or abuse any dominant position they may have;
- ensure non-discrimination and transparency in the application of charges;
- ascertain that investments in capacity meet current and future demand in a cost-effective manner; and
- protect the interests of passengers and other end-users.²

To promote these objectives, consistent with the form of economic oversight adopted, States should ensure that airports consult with users and that appropriate performance management systems are in place.

2. The term “end-users” refers to ultimate consumers in general (e.g., passengers and shippers).

1.27 The priority for each objective may vary depending on the specific circumstances in each State, and there should be a balance between such public policy objectives and the interests of the autonomous/private entities to obtain the optimal benefits of commercialization or privatization.

POSSIBLE FORMS OF ECONOMIC OVERSIGHT

1.28 Economic oversight may take several different forms, from a light-handed approach (such as the application of competition law) to a more robust approach (such as direct regulatory interventions in the economic decisions of airports), as follows:

- application of competition law;
- fallback regulation (“market regulation”);
- institutional requirements (“institutionalized checks and balances”);
- price cap regulation (“incentive-based regulation”); and
- rate of return regulation (“cost of service regulation”).

Application of competition law

1.29 The concept of competition law refers to laws (including regulations and policies) that aim to foster or maintain competition in markets by prohibiting anti-competitive practices. The process of applying competition law normally consists of responding to complaints, monitoring market behaviours, prosecuting offenders, adjudicating liability, and imposing sanctions upon parties adjudged to have violated the law. Such actions are likely to also have a deterrent effect on anti-competitive behaviours.

Fallback regulation

1.30 Fallback regulation is predicated on making explicit the “threat” of a more robust form of economic oversight if a company does not ensure that its behaviour stays within “acceptable” bounds. The benefit of this light-handed approach is to mitigate a potential risk of abusing dominant position without incurring the regulatory costs and distortions. Normally, this would be accompanied by the application of standard competition law. For this approach to work the airport must understand what constitutes unacceptable behaviour. A potential difficulty is that by defining the commercial boundaries in detail the State might risk creating precisely the regulatory distortions that it seeks to avoid.

Institutional requirements

1.31 Research and experience indicate that the interests of all stakeholders could be best served if users were sufficiently well informed through a constructive engagement of airports and users. Certain institutional requirements can enhance transparency and the flow of information, thereby transmitting the right signals and responses between airports and users.

1.32 Light-handed types of institutional requirements include conditions on:

- *mandatory consultation between airports and users* in the establishment of airport charges and development plans in order to ensure adequate disclosure of costs and transparency in the economic and financial underpinnings of rate and service proposals. If a meaningful consultation process is well established, it could eliminate or reduce the need for a robust form of economic oversight;

- *implementation of a performance management system* (see Chapter 3); and
 - *establishment of corporate governance* including stakeholder membership of the board of directors, which is a means of promoting the adequate flow of economic information between the airport and its users.
- 1.33 More robust types of institutional requirements include conditions on:
- *joint ownership, or mixed enterprise*, as a means of ensuring information flow, consultation and consensus in the establishment of airport charges and development plans; however, there might be potential anti-competitive issues involved regarding airline competition and barriers to entry where joint ownership means airlines have a large say in investment plans and in the management of the airport; and
 - *not-for-profit financial status*. The rationale behind this arrangement is that removing the profit incentive from an otherwise commercially-oriented organization relieves it of the stimulus to abuse its dominant position. However, it can also be argued that a profit motive protects the public against the risk of an airport failing to generate sufficient surplus revenues to sustain and modernize its facilities on a timely basis. In whatever case, the managers will have to trade-off between multiple objectives, which are well-known problems of management incentives.
- 1.34 Institutional requirements are often specified in a contract of concessions. These could be for a Build-Operate-Transfer (BOT) type project, or it could be a management contract, or any variant in between.

Price cap regulation

- 1.35 Some forms of economic oversight are designed to encompass incentive elements within them. The archetypal example is price cap regulation, under which the regulator sets a maximum chargeable rate applicable for a specific period, normally by using the retail/consumer price index minus (or plus) an incentive target (an “x” factor). If the airport exceeds the target, it may keep any over-recoveries. Where the target is not met, the airport would not be allowed to increase charges to compensate for the under-recovery and would have to find the means to balance its accounts during the regulated period. Under this scenario, the airport has a strong incentive to improve its efficiency and reduce its costs.
- 1.36 The price cap regulation has some potential shortcomings. For example, over time, as the ability of the regulated company to out-perform the cap is reduced, the incentive is less effective. Also, since a price cap is usually set for several years on the basis of projected capital expenditure as well as on existing assets, the airport may have an incentive to overstate capital expenditure prior to the price cap being set and, subsequently, not to undertake the full programme (the price cap can give the airport a short-term return on the assets without actually having to invest in them). Such issues can be dealt with largely through the establishment of a clear and comprehensive definition of outputs and their pricing, which allows the regulated entity to argue that the lower than planned expenditure is the result of (desirable) efficiency gains. The resulting regulatory system does, however, become increasingly complex and hence more expensive for the regulator, the regulated companies and all users.
- 1.37 Output-based price caps may mitigate this problem. Prices set instead in relation to output performance may provide better incentives to invest efficiently. The price can be varied up or down based on meeting performance specifications. If price caps can be linked closely to outputs over time, the airport will have fewer incentives to delay or not undertake productive investments. The barriers to this form of regulation are the long lead times to investment such that the benefits in terms of outputs are often achieved many years later only and the challenge of defining outputs in such a way that they cover service quality as well as capacity.

1.38 It is possible to modify the scope of price cap regulation by separating the aeronautical activities from the non-aeronautical activities and, therefore, applying different types of price cap to each sector, including off-airport activities. Some, however, have expressed concern about a dual-till approach (see Chapter 4, paragraphs 4.119-4.123), arguing that the non-aeronautical revenues provide a good incentive to stop airports abusing their dominant position on the aeronautical side. The approach, in some countries, has been to impose a price cap only where there is monopoly power, and that is mostly on the aeronautical side. There is a strong argument that there are off-airport competitors for an airport's commercial activities, and unnecessary or inappropriate regulation may distort the market.

Rate of return regulation

1.39 A rate of return regulation (also called cost of service or cost plus regulation) is designed principally to address the issue of excessive profits in enterprises with monopoly characteristics. The airport may be required to obtain approval for the level of charges and investments, the objective being to limit the airport's rate of return on capital at the level prevailing in a competitive market. In its simplest form at least, it allows cost pass-through for both operating and capital expenditures. However, rate of return regulation may provide the airport with a strong incentive for over-investment in order to increase the volume of its profit. Where there are no other incentives on efficiency (for example, through governance), rate of return regulation may provide limited incentive to cost-effectiveness and may also encourage over-investment beyond the requirement of users.

SELECTING APPROPRIATE FORMS OF OVERSIGHT

1.40 The selection of the appropriate form of economic oversight depends, *inter alia*, on the degree of competition, and the legal, institutional and governance frameworks, including the roles, rights and responsibilities of the different parties involved, as well as the costs related to specific oversight forms. Whatever approach is adopted, economic oversight should be performed in a transparent, efficient and cost-effective manner, while keeping regulatory interventions at a minimum and as required, for instance, when there is a disagreement between the parties, where strong market positions create the potential for overcharging, or where there is increased potential for discriminatory behaviour against specific users. Since circumstances change over time, the different options might be more or less appropriate at different times. It is therefore desirable to ensure a certain degree of flexibility so that oversight can be adapted to changing circumstances.

1.41 In selecting the appropriate form of economic oversight, States should first consider the scope and degree of competition. Where competition or the threat of it is sufficiently strong, the application of competition law is likely to be adequate.

1.42 One of the justifications for selecting other forms of economic oversight, therefore, requires that competition and the application of competition law would be insufficient to address the risk that an airport could abuse any dominant position it may have. The issue here is how to identify the circumstances in which competition or the threat of it would not be sufficiently strong. In general, the degree of competitive market constraints could be measured in terms of actual and potential competition from rival airports or from other modes of transport. The size of the entities and traffic volume relevant to the market are also factors to be taken into account.

1.43 Even where competition may not be considered sufficiently strong, there may be circumstances in which the need for a robust form of economic oversight is less obvious. For example, the airports, in collaboration with the users, are the parties best placed to determine the optimal service standards, charges system and the level of the charges in relation to the services rendered. In such cases, the scope of economic oversight should be limited to encouraging that changes to the charges system and to the level of charges be made in agreement between the airport and all categories of users where this is achievable.

1.44 Another important factor in assessing the most appropriate approach is the potential costs and benefits related to the particular form of economic oversight. The operation and administration of economic oversight is not cost-

free, and the cost associated to it may increase as the approach taken by a State moves from a light-handed to a more robust form. In the extreme, the regulatory cost may outweigh the expected benefit. The choice of an appropriate form going beyond the application of competition law is, therefore, a matter of searching the spectrum of options for protecting public interests at an acceptable level and at a minimum regulatory cost.

1.45 It is possible to conceive variations of each form of economic oversight set out above. In some situations, the combination of two or more of the forms may yield the best form of economic oversight.

IMPLEMENTATION OF ECONOMIC OVERSIGHT

1.46 States may perform their economic oversight function through legislation or rule-making, establishment of a regulatory mechanism, etc. The mechanism by which economic oversight takes place can be key to its success in achieving its objectives in an efficient and cost-effective manner. It is important for States to consider carefully the roles, rights and responsibilities of the different parties involved — governments, airports and users — and to exercise their economic oversight function, in particular concerning economic performance management and consultation with users, in an internally consistent manner.

1.47 Where the operation of one or more airports is performed by a government entity, the economic oversight function should be functionally separated from the operation and provision of airport services within the administration, and roles and powers should be clearly defined for each function (see Chapter 2, Part B).

1.48 Taking account of local circumstances, a State may wish to establish an independent economic oversight entity with the responsibility of reviewing and sanctioning any action on pricing, investments and service quality. An appropriate balance between independence and accountability is required for the economic oversight entity as well as for the airport(s) that it would regulate. In order to hold the regulating entity accountable, the government would need to give it clear objectives, preferably through statute, coupled with sufficient operating autonomy. Without such a balance, there will be a risk to regulatory commitment and credibility.

1.49 A State can also use a third party advisory commission as a less formal tool to help perform its economic oversight function. The advisory commission is often considered appropriate when parties concerned do not form cohesive groups and thus have little or no means by which to organize for class action. The advisory commission might be composed of air carriers, general aviation, the military, representatives of end-users, and other principal parties concerned. A strong advisory commission would be equipped to engage in meaningful dialogue with the airport management on an ongoing basis and to review specific pricing, investments and service levels proposals.

1.50 Another important aspect to be considered is the possible need for additional resources to perform an economic oversight function. Some States may lack the capacity to adequately fulfil their economic oversight responsibilities, given competing priorities on safety, security, environment and liberalization of air transport. For those States, the adoption of a region-wide regulatory framework could be a useful option to pull their resources together in performing their economic oversight function.

DISPUTE RESOLUTION

1.51 If as suggested in paragraph 1.30 above, the State defines an acceptable standard of behaviour, or if there is a contract between an airport and its users, arbitration or a dispute resolution mechanism could come into play whenever the provider and the users are unable to agree on an application in practice. It might be necessary to specify “triggers” for initiating arbitration and the criteria for settling disputes. The main advantage of such arbitration is that it would pressure the parties to reach and adhere to commercial agreements and in doing so would help to reinforce any underlying countervailing market power that the users may possess. However, the success of arbitration is likely to depend, *inter alia*, on the market power of the airport, particularly if it is the only “regulatory” mechanism available. It may

also give rise to gaming behaviours by the parties, trading off a potential arbitration outcome against a negotiated agreement.

1.52 The involvement of autonomous entities in the management of airports, as well as the growth of new types of aircraft operators, has brought about business practices and new market forces that can potentially result in new and different kinds of disputes that will need to be resolved before they enter the international arena. Economic oversight should provide for equitable, transparent, expeditious and effective dispute settlement mechanisms that build confidence between the airport and its users. Its purpose is to instil trust between parties where market forces do not provide for resolution of disputes.

1.53 No single mechanism can meet all needs and circumstances. In general, the procedures for settling a dispute between parties to an agreement may be carried out in two stages: a) consultations between the parties; and/or b) at the request of either party, the submission of the dispute to an arbitration tribunal for a decision. Usually, decisions reached under this latter stage of the mechanism are binding and both parties have the obligation to enforce the decision.

1.54 In addition to administrative and judicial proceedings, a State may consider a "first-resort" mechanism, which could provide for an intermediate level between the two stages of consultation and arbitration. This intermediate level calls for either an independent mediator or an independent dispute settlement panel to be used for the fact-finding investigation, including determination of the substance of the dispute or for providing a recommendation to remedy the dispute. It is based on clear time frames, implementation arrangements, interim measures and provision for third-party involvement (see paragraphs 1.71 to 1.73).

1.55 An independent tribunal could be established to which users could appeal if they had reason to believe they were being subjected to abuse of dominant position or other unfair practices, although the need to avoid the tactical use of such a mechanism with vexatious claims would need to be considered. This body could also handle appeals lodged with respect to complaints about non-compliance with the required principles for establishing charges and rates. The mechanism should not affect the right of the parties to have access to other dispute resolution mechanisms, including those under general competition laws, nor should it preclude the implementation of the formal arbitration process in an agreement.

1.56 Third-party protection could also be ensured through the use of a less costly mechanism, such as an ombudsman. It should be noted, however, that while the role of an ombudsman is to provide a neutral forum, an ombudsman ultimately has no enforcement power.

1.57 In addition, with respect to complaints relating to decisions taken by the regulator (such as an economic oversight entity), the right of appeal to a higher tribunal should be available. A compliance and enforcement regime providing for the creation of an administrative monetary penalty system, with appeals to an independent appeal tribunal, could be envisaged. It has to be recognized, however, that while an effective enforcement mechanism is a point of critical importance, it could be very demanding in terms of resources for many States.

D — CONSULTATION WITH USERS

NATURE OF CONSULTATION

1.58 Good relations between regulators, airport operators and users are important for the sound development of air transport. Consultation and cooperation lead to increased mutual understanding between airports and users, thereby improving efficiency and cost-effectiveness in the provision and operation of airport services with all the parties striving to move in the same direction. Consultation with users covers all aspects referred to in Doc 9082, namely, changes in charging systems or levels of charges, airport planning (capacity development and investment plans), performance management, service quality, pre-funding of projects, collection of passenger services charges, cost recovery of security measures, and environmental charges.

1.59 The key purpose of consultation with users is to ensure that the needs and wishes of users are considered in the context of the airport's plans to meet them. Effective consultation will help both to prioritize investments and to ensure that adequate capacity and services will be provided to meet the demand of current and future users, including end-users.

1.60 Consultation with users may provide useful comments and suggestions for improvements in the management of the charging system and lower costs for both airports and users. Consultation might also reveal aspects of the proposed charges that may inadvertently discriminate against certain user groups. Through consultation, users become aware of the financial implications of the charges that they would have to pay.

1.61 Successful consultation depends on goodwill and constructive engagement from all parties involved. However, there is a wide variation between airports in the degree of consultation and users' involvement. While some airports have established cooperative arrangements such as service level agreements (i.e. defining the level of service provided and the rules that govern the airport/users relationship on the agreed services), some other airports around the world do not maintain a proper and regular consultation process, or do not consult users at all. In some cases, even where a consultation process has been established, there is limited engagement by the airport and/or the users in the process. All sides should participate in a meaningful way to ensure that the process delivers an optimal outcome.

THE CONSULTATION PROCESS

1.62 As recommended in ICAO's policies on charges in Doc 9082 (Section I, paragraph 13), States should ensure, within their economic oversight responsibilities, that all the users concerned are properly consulted on issues that could materially affect them. Specific procedures for effective consultation should be determined on a case-by-case basis, taking into account the form of economic oversight adopted by the State and the size and scale of the airport's activities.

1.63 Where there are no cooperative arrangements in place that are acceptable to all parties, States are encouraged to ensure that a clearly defined, regular consultation process is established with users by their airports (Doc 9082, Section I, paragraph 21). The consultation process could be maintained even in times where no changes in charges, capacity development or investments are being contemplated by an airport.

1.64 In general, consultation starts with advance notice of proposals. When a revision to existing charges or the imposition of new charges is contemplated by an airport or another competent entity, it is recommended that appropriate notice should be given to users, either directly or through their representative organizations, at least four months in advance, in accordance with the rules and regulations applicable in each State (Doc 9082, Section I, paragraph 21 i)).

1.65 Consultation documents should make clear the nature of the proposals, the parties most likely to be affected, the specific questions on which feedback is requested, and the time schedule for responses (Doc 9082, Section I, paragraph 21 iv)). In any revision of charges or imposition of new charges, the users should be provided with transparent and appropriate financial, operational and other relevant information to allow them to make informed comments (Doc 9082, Section I, paragraph 21 ii)). Summaries of the main revenue and expense items as well as other financial data described in Chapter 4, Part A, illustrate the type of information referred to.

1.66 All interested parties should be given the opportunity to present their views on the proposals (Doc 9082, Section I, paragraph 21 iv)). The written submissions by users or their representative organizations and any feedback obtained through associated consultative discussions should be considered, as far as possible, before reaching a decision. The best outcome from consultation would be consensus, and reasonable measures should be taken to achieve this, although it may not be possible, or even desirable, to reach consensus in each situation.

1.67 It is important to note that the party being consulted (users) has a responsibility equal to the party consulting (airport) to engage actively in the consultation process. For example, concerning capacity development and investment plans, the attention of users, particularly air carriers, should be drawn to their responsibility to provide

advance planning data to individual airports on a five- to ten-year forecast basis relating to future types, characteristics and numbers of aircraft expected to be used, the anticipated growth of aircraft movements, passengers and cargo to be handled, and other relevant matters (Doc 9082, Section I, paragraph 19).

1.68 Both airports and users are to provide sufficient information to each other for meaningful consultations, while market-sensitive data should be protected properly. Also, the detail and amount of information to be provided would depend on the size of airports and the nature of the proposals being undertaken. For example, for small airports, a process such as that described in paragraphs 1.65 to 1.67 above would be too cumbersome and expensive, and thus a less elaborate process and related information may be needed.

1.69 Decision documents should provide appropriate rationale for the decision taken. Especially where users' views have not been accepted, justification for the decision is necessary. With respect to the revision of charges or imposition of new charges, it is recommended again that reasonable advance notice of the final decision, of at least one month, be given to the users. This one-month period does not need to be in addition to the four months' advance notice period referred to in paragraph 1.64 above. Advance notice could enable the users to make any necessary arrangements for the additional costs involved and make adjustments to their fares, if needed. It also allows the users some time to invoke a dispute resolution mechanism, where available, prior to the revised or new charges taking effect.

PRE-FUNDING OF PROJECTS THROUGH CHARGES

1.70 Specific considerations for consultations related to the use of pre-funding charges for project financing are addressed in Appendix 4, paragraph 6.

"FIRST-RESORT" MECHANISM

1.71 A revision of existing charges or the imposition of new charges should be made in agreement between airports and users through consultation, wherever possible. Failing such agreement, paragraph 18 in Section I of Doc 9082 acknowledges that the airport would continue to be free to impose the charges proposed, subject to a right of appeal to, or other determination by, a body independent of the airport, where available. The appeal process should be consistent with the form of economic oversight adopted in the State concerned. If there is not an appeal mechanism in place it is even more important that airports and users make every effort to reach an agreement on any changes in charging systems or levels of charges before they are introduced.

1.72 With the growth in the number of instances where provision of airport services is independent of direct government control, there may be a need for a neutral party at the national level to pre-empt and resolve disputes before they enter the international arena (a "first-resort" mechanism). Balancing the interests of both airports and users would be more effectively achieved through preventive measures including requirements for prior consultation and expeditious national treatment of complaints.

1.73 Paragraph 22 in Section I of Doc 9082 recommends that the "first-resort" mechanism should be flexible, with focus on conciliation or mediation but with the possibility of arbitration if the State concerned so decides. Specific procedures for consultations of this kind will have to be adapted to the diversity in the administrative, financial and legal frameworks within which airports function. The procedures with regard to individual airports will also need to take into account the size and scale of the airport's activities. The mechanism, if required, should be established in a manner consistent with the form of economic oversight adopted.

Chapter 2

OWNERSHIP, CONTROL AND GOVERNANCE OF AIRPORTS

This chapter addresses various aspects of ownership and control structures of airports, which have implications for their governance and performance.

Part A provides some basic comments essential for the understanding of the guidance in this chapter.

Part B describes the organizational structures for the provision of airport facilities and services by government owned and controlled entities.

Part C addresses the issue of privatization of, and private participation in, airports.

Part D addresses the issue of airport systems, networks and alliances.

Part E stresses the need to apply best practices so as to ensure good corporate governance of airports.

Part F identifies, from an organizational viewpoint, the major areas of airport activity and describes the responsibilities normally assigned to each area.

A — BASIC FACTORS

2.1 This chapter focuses on ownership and control structures of airports, which have implications for their governance and performance. The various organizational structures used by States can be grouped into two main types. The first type falls under government or public ownership and control. Although this is still the predominant form of organization, many States have established autonomous entities by separating the provision of airport services from the executive arm of the State and by allowing them to operate on a commercial basis. The second type is where private interests are involved in whole or in part, a format that is becoming more common. Considering the diverse circumstances involved, it is not the intent of this manual to recommend one organizational format over another, but rather to provide guidance to States by describing relevant aspects of each format.

2.2 The decisions made by individual States at the national level as to the organizational format under which their airports operate will depend on the situation in the State concerned and will often be strongly influenced by government policy, as well as by the experiences of other States. The most appropriate choice can be determined in the context of the following factors:

- a) the legal, institutional and governance frameworks of the government and system of administration in the State;

- b) the cost and source of funds required to meet infrastructure needs and to secure the continuity of operation taking into account traffic forecasts and risks (for example, contingency planning to deal with the potential impact of reductions in revenue that could occur due to decreases in air traffic);
- c) market conditions including degrees of competition among airports and users;
- d) the requirements of the aviation industry; and
- e) the contribution of civil aviation to the State's economic and social objectives and the extent to which civil aviation has been developed to meet those needs.

2.3 The process of transition from one format to another will also depend on the circumstances and practices of each State but, in general, the transitional issues that may arise include:

- a) identification, valuation and transfer of assets;
- b) determination of the initial financial structure, staffing and conditions of employment including pension arrangements and maintenance of good labour relations during the transition period;
- c) establishment of good corporate governance;
- d) establishment of formal relationships between the airport(s) and the government, including the military;
- e) establishment of formal relationships between the airport(s) and the aviation safety and security organization(s);
- f) establishment of an economic oversight framework; and
- g) establishment of appropriate performance management systems and a consultation mechanism with users and other interested parties.

2.4 Regardless of the organizational format, according to ICAO's policies on charges in Doc 9082, the State is ultimately responsible for safety, security and, in view of the potential abuse of dominant position by airports, economic oversight of their operations (Doc 9082, Section I, paragraph 6). It is further stressed that whenever an autonomous entity is established, whether by a government or by private interests, the State should ensure that all relevant obligations of the State specified in the Chicago Convention, its Annexes and in air services agreements are complied with and that ICAO's policies and practices are observed (Doc 9082, Section I, paragraph 7). With regards to their responsibility for safety, States should ensure that airports undergoing changes of ownership and control structures are subject to a certification procedure in accordance with the Standards and Recommended Practices in ICAO *Annex 14 – Aerodromes, Volume I – Aerodrome Design and Operations*, to the Chicago Convention as well as other relevant ICAO specifications, and as outlined in the *Manual of Certification of Aerodromes* (Doc 9774).

B — GOVERNMENT OWNERSHIP AND CONTROL

GENERAL

2.5 Government or public ownership may take the form of direct control and management, for example, through a civil aviation administration, or through another ministerial department, or through regional or municipal levels of government. Government control can also be exerted through bodies benefiting from a certain degree of autonomy, such as a government body with financial and operational autonomy, an autonomous corporation established under the provisions of a special statute (a statutory body), or a company established under company law.

GOVERNMENT DEPARTMENT

2.6 The historical organizational format of the airport is a fully integrated component of the State's bureaucracy, where the operation of one or more airports represents only one of many functions performed by a government entity. Generally, this organizational format is characterized by the following features:

- a) the head of an airport department reports directly to the executive level of government;
- b) as an organization within government it is funded by the government, sometimes from general taxation. User charges levied for airports can be retained either by the government for general purposes or by the organization; and
- c) the organization may not be subject to taxes as paid by private business.

2.7 When a government plays both the role of regulator (i.e. performing its economic oversight function) and service provider, it should consider a clear separation of the regulatory and operational functions, with roles and powers clearly defined for each function as recommended in ICAO's policies on charges in Doc 9082 (Section I, paragraph 12). This is because too close a relationship between the regulator and the service provider can result in conflicts of interest and undermine public confidence and trust in the adequacy of the system, and because overlaps in the regulatory and operational functions may lead to diffuse accountability relationships within the entity. Separation enhances transparency in the decision-making process and makes clear the lines of accountability and the authority of one branch to monitor the activities of the other.

2.8 The internal separation process of the two functions involves delegation of responsibilities of management and finance, giving much greater autonomy to an airport department within the entity. In general, the head of the airport department may have considerable authority in decisions pertaining to the daily operations of the airport, including personnel management, and the authority to make purchases of supplies and arrange for any services required for that purpose. The department head may also be given the authority to negotiate agreements concerning all but major concessions and rentals, the final decisions relating to which would normally be made at higher levels. Decisions involving, for example, major purchases or investments in facilities and equipment would normally be subject to the government's approval process and treasury rules and may compete against other claims for government funds.

2.9 If the government accounting system is inadequate to provide the necessary accounting information, separate accounts following commercial accounting standards and practices will be necessary. The format of airport accounts and their possible itemization is addressed in Chapter 4.

GOVERNMENT-OWNED AUTONOMOUS ENTITIES

Definition

2.10 An autonomous airport entity is essentially an independent entity established for the purpose of operating and managing one or more airports, which is empowered to manage and use the revenues it generates to cover its costs. Creating legal entities outside the government is usually called "corporatization". In some circumstances, a single autonomous entity may operate both airports and air navigation services. Such autonomous entities may, in some cases, operate not only airport facilities but also facilities for other modes of transport, covering such facilities as ports, bridges and tunnels. While not common, this approach has been found useful, for example, where cities operating airports wish to centralize the operation and management of these and other major transportation facilities for which they are responsible.

- 2.11 The government-owned autonomous entity normally has the following key features:
- a) the government, as owner of the organization, is responsible for setting the autonomous entity's objectives and monitoring its performance;
 - b) a board of directors appointed by the government oversees the activities of the entity;
 - c) the autonomous entity is self-financing, charges for its services, uses revenues from these charges to fund operating expenses and to finance capital expenditure, applies commercial accounting standards and practices, and may be required to achieve a financial return; and
 - d) the autonomous entity may be subject to normal business taxes, and the staff of the entity are not likely to be civil servants and may therefore not have public sector pay and conditions of service.

2.12 The extent to which the government-owned autonomous entity can function like a private sector company depends on the degree of autonomy conferred to the entity. On the one hand, the autonomous entity can still be subject to the government's directions or pressure to take account of wider public issues, as well as its approval process for major capital investment. On the other hand, the autonomous entity can be allowed to commercialize some of its activities. Commercialization refers to an approach to management of facilities and services in which business principles are applied or emphasis is placed on development of commercial activities.

Development and advantages

2.13 In the past two decades, the number of autonomous entities has grown in all regions. While the establishment of an autonomous entity would not necessarily result in an unprofitable airport becoming profitable, experience gained worldwide from these developments indicates that the autonomous entities may have the following advantages:

- a) ensure that the revenues generated through the use of airport resources are transparently re-invested in operating and developing the facilities;
- b) ensure that the users of the airports contribute directly to the upkeep and development of the facilities that they use (user pays principle);
- c) reduce the financing burden on governments;
- d) encourage the growth of a business culture (for example, closer control over revenues and expenses, quicker decisions and more responsive actions, and good governance), thereby increasing efficiency and improving the quality of services;
- e) enable access to private capital markets, which may only become possible with a change in organizational format because of public sector borrowing restrictions; and
- f) establish a clear separation of the regulatory and operational functions.

In light of these advantages, ICAO's policies on charges in Doc 9082 (Section I, paragraph 5) recommend that, where it is economically viable and in the best interest of airports and users, States consider establishing autonomous entities to operate their airports.

2.14 The main purpose of establishing autonomous entities has been to improve the efficiency and financial performance of the airport(s). To the extent that international airports have become more autonomous, this trend has been associated with the larger international airports with sufficient traffic volumes to warrant expectations of attaining

financial self-sufficiency. However, smaller international airports may also benefit from becoming more autonomous in their management and operation, although they may face risks such as a lack of sufficient bargaining strength to counter the market power of their users. Regardless of airport size, States should always consider the benefits and risks associated with adopting new management and operating structures.

2.15 In certain circumstances, assigning the operation of one or more airports to an autonomous entity may not be a good approach to improving airport operating efficiency. For example, in a small State with limited aviation activity and where the operation of an international airport is the dominant function of the civil aviation administration, little if anything may be gained by separating the airport operation from the civil aviation administration and assigning it to an autonomous entity established exclusively for that purpose. In fact, costly duplication and rivalry between the two bodies could result in each of the two bodies carrying out functions previously performed more efficiently and at a lower cost by the civil aviation administration. This applies particularly to administrative costs and overhead.

Responsibility and financial independence

2.16 Before an autonomous entity becomes operational, its charter, or a document of a similar character, needs to be drawn up. The charter clearly describes the scope of the services and areas of responsibility of the autonomous entity. Because of different national practices, these tend to differ between airport entities. The areas or services concerned normally include most or all of the following: aircraft movement areas, aircraft parking areas, passenger terminal facilities, cargo facilities, hangar facilities, air traffic control including communications, and sometimes, meteorological services.

2.17 Where airport facilities already exist, the charter makes clear whether or not the assets are to become the property of the entity and, if so, what value is to be placed on these assets and whether or not a corresponding debt is to be charged to the entity. The charter also states how the airport is to be governed (see paragraphs 2.40–2.43 on corporate governance).

2.18 On the financial side, the charter needs to make clear that the autonomous entity will be empowered to retain the revenues it generates for the purpose of defraying airport expenses and building up possible capital reserves. This means that the civil aviation administration would no longer have the financial benefit of the common use of premises and equipment, the costs of which were, at least in part, financed by airport revenues. Where it is foreseen to be unlikely that the autonomous entity will be profitable in the short-term, the charter may need to specify how shortfalls in revenues are to be covered (such as through direct loans from and loan guarantees by the government), preferably by the drawing up of an annual financial plan to be agreed by the government (in this context, reference should also be made to the guidance material in Chapter 3).

2.19 If airport entities lack the necessary financial autonomy, all the revenues they generate from charges, rentals and concession fees are deposited directly to the account of the national treasury, a ministry or the civil aviation administration, resulting in the airport entity then having to apply for all funds required to cover airport expenses. The airport entities concerned nevertheless remain responsible for the levying and collection of charges on air traffic as well as for the promotion and development of non-aeronautical activities. However, such kinds of arrangements tend to significantly reduce the incentive of airport management to develop new revenue sources or increase income from existing sources because it cannot make use of revenues it generates to defray expenses for which it is held responsible.

AUTONOMOUS CIVIL AVIATION AUTHORITY

2.20 Even in circumstances where the establishment of an autonomous airport entity may not be desirable (see paragraph 2.15), it may be beneficial to establish an autonomous civil aviation authority to take over the functions, including the operation of airports, previously performed by a civil aviation administration. The establishment of an autonomous civil aviation authority could permit the State to obtain benefits such as an increased efficiency and a

significant reduction of the contribution from public funds previously required for the civil aviation administration, which the civil aviation authority would replace.

2.21 As in the case of autonomous airport entities, granting financial independence to the civil aviation authority would usually be an important prerequisite for realizing such benefits. However, experience in some States has shown that achieving complete financial autonomy remains a distant goal and that continuation of government financial support through grants sometimes remains necessary, at least in the early stages.

C — PRIVATE OWNERSHIP AND PARTICIPATION/INVOLVEMENT

2.22 In the past two decades, many government-owned autonomous entities have been commercialized and are expected to operate as a financially independent business entity and to be as competitive, efficient and cost-effective as any other commercial business. The ownership of some of the commercialized airport entities has been transferred partly or fully to the private sector. Further details and guidance material on airport privatization can be found in the *Manual on Privatization in the Provision of Airports and Air Navigation Services* (Doc 9980).

MOTIVATIONS

2.23 The opening of the door to private interests has been driven by diverse motives, ranging from improving operational efficiency and reducing costs to a more pragmatic desire to relieve the State of the responsibility for financing infrastructure developments. The government also expects to gain a one-time cash windfall from the sale of shares, as well as regular tax revenue from privatized airports. Public financing of airports is becoming more difficult because of budgetary constraints or other national spending priorities and pressure to move away from non-core public utilities. Governments also confront the increasing difficulty of the purchase, lease or reclamation of land and the growing expectations of the users in regard to the quality of service at airports.

2.24 The business and financial communities are aware that an airport can be a sound investment. Larger airports are turning into cities in themselves (“aerotropolis”), with marketplaces and meeting points for people and businesses. Growth in air traffic is generally related to economic growth. Depending on the economic cycles, the credit ratings of many major airports have historically been high and they have strong cash flows. Although airports are subject to States’ economic oversight, commercial activities at airports, which produce significant revenues, are generally less regulated than aeronautical activities or are not regulated at all. All these factors combined have resulted in major airport management companies investing and participating in the management of airports in other regions of the world. Thus airport management companies have developed, paralleling the development of the large international airline companies, and together creating a genuinely global aviation industry.

PRIVATIZATION

2.25 Privatization is the term most commonly used in connection with the changes taking place in the ownership and control of airports. While the term privatization is often loosely interpreted as any move away from government ownership and control of airports, ICAO’s policies on charges define privatization as a transfer of full or majority ownership of airport facilities and services to the private sector (Doc 9082, Appendix 3). Privatization is usually achieved through outright sale of shares to a strategic partner or an Initial Public Offer (IPO) on the stock exchange market. In the event that a State would wish to regain full or majority ownership, it would have to buy back the shares, with the risk that their price may be higher than the original sale price.

2.26 Key features of a privatized airport are likely to include the following:

- a) there is a board of directors for the corporation appointed according to its charter;

- b) the privatized airport is self-financing, charges for its services, obtains funds from the capital market, applies commercial accounting standards and practices, and needs to achieve a financial return as a commercial entity; and
- c) the privatized airport is subject to normal business taxes.

2.27 Airport privatization requires careful consideration of a number of factors (paragraph 2.2 refers). These include an assessment of market conditions and the degrees of competition. This will serve to minimize the risk of airports, on the one hand, engaging in anti-competitive practices or abusing their dominant position, or on the other the possibility of being subject to market pressure by users. In addition, the objectives of change of ownership structures may need to be clearly defined through appropriate consultations with existing airport management, users and other interested parties. Privatization should not in any way diminish the State's requirement to fulfil its international obligations, notably those contained in the Chicago Convention, its Annexes and in air services agreements, and to observe ICAO's policies on charges in Doc 9082.

PRIVATE PARTICIPATION/INVOLVEMENT

2.28 Private participation and private involvement, which are synonyms, mean that the private sector has a role in the ownership, control and/or management of an airport entity while majority or ultimate ownership remains with the government. Private participation/involvement that can be used for airport management and operation sometimes involves the establishment of a public-private partnership (PPP). The advantage of a PPP is that the management skills and financial acumen of private businesses could create better value for money for taxpayers, when proper cooperative arrangements between the public and private sectors are used. Private participation/involvement has basically four different forms: management contract, lease (which is sometimes called concession), transfer of minority ownership, and private sector ownership and/or operation of parts of the activities of an airport (including PPP schemes).

Management contract

2.29 Under this option, the management of an airport or a group of airports is transferred to a private entity for a limited period of time for a fee or pre-determined payment terms. The private entity can be a local/national concern, or an international airport managing group, or a consortium associating various interests of which the former two may be part. The airport (or group of airports) benefits from professional management, but development of airport facilities may not be included in the contract.

Lease or concession

2.30 Airport leases/concessions can be short-, medium-, or long-term. Under this option, an airport or a group of airports is transferred for management and development to a private entity or consortium for a fixed period. In almost all cases, the responsibility for expansion and development of airports rests with the lessee or concessionaire, under conditions that are either listed in the contract or are dependent on traffic growth. The payment terms of leases or concessions vary widely. In some cases, it is all down payment, while in other cases it is partly down payment and partly annual payment, or only annual payment. One of the most common forms is the Build-Operate-Transfer (BOT) scheme, an ownership and management system under which a private entity obtains the right to finance, build and operate a certain facility, including land and/or buildings, over a long period of time, and on expiry of the right returns it to the owner. Many variants of this scheme have come into existence (see definitions in the glossary of terms in ICAO's *Manual on Privatization in the Provision of Airports and Air Navigation Services* — Doc 9980).

2.31 When giving airports in concession¹ to a company or a consortium, a number of aspects have to be considered in order to obtain the best results. In particular, States should duly take into account, in addition to economic policy and guidance material, other ICAO documents such as: a) *Airport Planning Manual* (Doc 9184), b) *Airport Services Manual* (Doc 9137), and c) *Manual on Privatization of Airports and Air Navigation Services* (Doc 9980). Factors to be considered include:

- a) the aeronautical and non-aeronautical services to be transferred to the private sector and those that will remain in the hands of the State should be identified, as well as the standards to be applied for the desired quality of the services provided;
- b) master plans and investment plans for airport concessions should be sufficiently flexible to enable their revision based on demand, taking into account State requirements, compliance with applicable international standards, and user needs. Such plans must give priority to the cost-effectiveness of concessions;
- c) the adequacy between the duration of the concession and the magnitude of the investment made;
- d) the contract between the State and the private airport operator must be the result of a competitive open bidding process that guarantees an efficient concession process, where all the required conditions, assessment formulae, and criteria used for awarding the contract are established with absolute transparency and are known to all stakeholders;
- e) the concession system should be based on the State and the private sector assuming their respective risks in the implementation of airport projects;
- f) airport concession contracts should allow for some flexibility in order to adjust to new market conditions resulting from an evolving air transport industry and the long duration of concession contracts; and
- g) measures should be taken to prevent the problems that have arisen with some concession contracts in relation to the timely payment of concession fees, delayed investments, definition of competencies, and management coordination.

Transfer of minority ownership

2.32 Under this option, minority ownership of an airport or a group of airports is transferred to the private sector, usually through the sale of shares to a strategic partner or through share flotation. It is sometimes a first stage or tranche of a full or multi-step privatization process to ensure a smooth transition during which the business can accommodate the market conditions.

Private sector ownership and control

2.33 Under this option, majority or full ownership of the airport is transferred to a private entity, including non-profit corporations or trusts.

1. This type of scheme has been implemented in particular in a number of States in Latin America. In this respect, the Latin American Civil Aviation Commission (LACAC) adopted in 2003 a Resolution (A17-03) with factors to be considered when giving airports in concession. In this Resolution, LACAC urges Member States that are conducting or about to start or revise airport and aeronautical infrastructure concession processes, to consider a number of aspects in order to obtain the best results. Such aspects are in line with ICAO's policies on user charges and guidance material on airport privatization.

Private sector ownership and/or operation of parts of the activities of an airport

2.34 This option refers to the ownership and operation of certain facilities or services at an airport, for example a passenger terminal, or a cargo warehouse, or security services. The activities of the operator are regulated by a contract that, from a legal point of view, is similar to a commercial concession agreement. Where a part of an airport (such as a passenger terminal) is privately owned and operated, measures need to be taken to ensure that the privatized element of the airport makes a proper contribution to the costs of operating the rest of the airport, for instance by payment of a significant concession or lease fee.

D — AIRPORT SYSTEMS, NETWORKS AND ALLIANCES

2.35 Whatever the form of ownership and control that the State has selected, the management of airports can be done either on an individual airport basis, on an airport system basis, on an airport network basis, or on a combination of these. An airport system is composed of two or more airports serving the same major metropolitan area and operated under a single ownership and control structure. An airport network is a group of airports within a State operated under a single ownership and control structure; it can include all airports serving the territory of this State or only some of these airports².

2.36 There are arguments in favour of operating and managing a group of airports within an airport network, a form of organization that is common at a national level. Smaller airports may derive some benefit within a common ownership, which could include cross subsidization. Other arguments point to, inter alia: the advantages for a State having a national air transport system in achieving its national development objectives; the advantages in terms of economies of scale; the easier access of all airports to capital markets; and the better management of capacity and use of resources throughout the network. In summary, an airport network can be a valuable method of collectively managing airports that, taken individually, would not be viable.

2.37 Arguments against cross subsidization are based on the fact that airport charges should be cost-related; that users should not be charged for facilities they do not use; and that only those facilities used for international air services should be included in the cost basis for charges (Doc 9082, Section II, paragraphs 2 i), ii) and iii) refer). In that sense, cross subsidies from profitable to non-profitable airports within a network are questionable, although it is recognized that in some States it may be the only way to maintain airports that serve, for example, isolated regions. Opponents to the network approach also point out that if subsidies are to be provided for national planning purposes, these should rather come from the State than from users of other airports.

2.38 Another aspect is related to the operation and management of airports at an international, or multinational, level, including alliances between airports or airport groups. This is made possible by the operation and management of airports in different States by globalized airport companies. The main advantage of such a form of organization lies in the potential economies of scale, while the drawbacks may be found in a possible diversion of revenue and cross subsidies between airports in different States (a form of cooperation that may be acceptable to some developing States).

2.39 One conclusion that may be drawn from this controversial issue is that an equilibrium should be sought between the interests of airports and users, specifically including those of current and future end-users; and that in cases where cross subsidization within a national network is applied, full transparency is necessary. In the final analysis, it is for States to decide on what is in their best interest, taking the above advantages and disadvantages and their particular circumstances into account. In this respect, States should consider paragraph 2 ix) in Section II of Doc 9082, which says that a State or a charging authority may recover less than its full costs in recognition of local, regional or

2. Cross ownership of airports in different States or management contracts obtained in different States by an international airport management company can also lead to a form of cooperation sometimes referred to as airport networks, or as airport alliances. However, these forms of international cooperation are of a different nature than a network at a national level.

national benefits received, as well as to the possibility of cross subsidization through revenues from non-aeronautical activities. With regard to international operation and management of airports, this form of organization needs to be exerted with caution and could be considered as acceptable as long as it brings lower charges through economies of scale.

E — CORPORATE GOVERNANCE

2.40 The change of ownership, control and/or management of an airport can have implications on its governance and performance. A number of recent studies and experiences indicate that a change of ownership and control is normally considered as a means to improve corporate governance and that better performance is achieved as a result of good corporate governance. The term corporate governance refers to overseeing the running of a company or an entity by its management and its accountability to shareholders and other interested parties.

2.41 Corporate governance becomes even more important where the control and management of an airport is separated from the ownership and in situations where an airport is more dependent on external capital for the financing of its activities and investments. For example, a sound corporate governance system could provide effective assurance for all interested parties, including shareholders and creditors, that management acts in the best interest of the airport and uses funds in an efficient way, thereby making it easier to raise capital. Conversely, without good corporate governance the management may seek to maximize its own interests at the expense of those of other interested parties, and there may be less transparency in the use of available funds.

2.42 Corporate governance principles and codes have been developed worldwide. Some of the most influential guidelines are the *OECD Principles of Corporate Governance* (2004) by the Organization for Economic Co-operation and Development. The application of the OECD principles and the results of recent studies on the commercialization and privatization of airports may serve as the basis for the establishment of the best practices needed to ensure good corporate governance of commercialized airports. These include:

- a) clearly defined objectives and responsibilities as set out in a legislation or license;
- b) an equitable treatment of shareholders and protection of shareholders' rights (where all or a part of the capital is held by private shareholders);
- c) an independent, professional supervisory board to provide overall direction to the management;
- d) empowered and accountable management to make timely decisions regarding finances, operations, technology, human resources, investments and services in line with corporate objectives and board directions;
- e) good relationships with all interested parties through consultation; and
- f) timely and accurate disclosure of information to enhance transparency.

2.43 The best practice of good corporate governance could equally apply to airports fully owned and directly controlled by government, as the performance of airports is related more to good governance than to the ownership and control structure. In many instances, however, a State authority does have inherent limitations that must be overcome (for example, cumbersome approval and lengthy procurement processes, and competition with other State priorities for investments).

F — INTERNAL ORGANIZATION

GENERAL

2.44 When establishing the internal organizational structure of an airport (or group of airports), the principal aim is to create a structure that enables the airport to meet its objectives and carry out its functions in the most efficient and cost-effective manner while maintaining a high standard of service.

2.45 Before defining or revising its internal organizational structure, particular attention will first be directed to the areas of responsibility of the airport (or group of airports), which are often described in the charter of the airport(s) or in documents of a similar character (see paragraphs 2.16–2.18).

2.46 The functions of an airport will vary according to its size, mix of traffic, areas of responsibility and business model. For example, some airports are responsible for air traffic control as well as for meteorological services, while at most other airports such services are provided by separate entities. Many airports are involved in security functions in varying degrees and in providing facilities for customs, immigration and health authorities. Ground-handling services for the airlines, including terminal handling or apron (ramp) handling, or both, are provided by some airports, while at others they are provided by the airlines or by specialized agents or companies. Certain airports also perform functions that exceed the scope of conventional airport activities, such as consultancy services, public works, construction, and real estate development.

2.47 The main functions of an airport are described below. At smaller airports, it may be more effective and convenient to have several functions handled by one department, whereas at major airports, many of them are likely to be handled by separate departments. The functions enumerated above may either coincide with the cost centres listed in paragraph 4.51 (Chapter 4, Part A), or regroup several cost centres.

ADMINISTRATION AND FINANCE

2.48 The administration and finance function is usually responsible for overall management of personnel and general administrative matters, including management of buildings and land and the supply and management of stocks. It would also be responsible for accounting, budgets, budgetary control, the assessment and collection of charges and other revenues, as well as making payments and, possibly, the operation of airport data processing systems. Also included would be matters relating to rentals and leases, concession contracts, drafting of the necessary agreements and other legal matters.

2.49 Defining the airport's long-term objectives and establishing development plans and investment programmes may be the responsibility of the finance function or a separate planning and development function.

2.50 Management control (which includes comparisons of the results achieved in relation to forecasts, budgets and plans, and the analysis of discrepancies) may also be separated from the finance function. Management information systems, which can be of significant assistance, tend to be operated by the administration and finance function. This may include the airport data processing system or may be operated as a separate function. The internal audit function, however, is usually independent and should report to a high level of management to ensure its impartiality.

OPERATION OF AIRPORT FACILITIES

2.51 This function covers the operation of the passenger and freight terminals, including air bridges, and runways, taxiways and aprons including ramp equipment, buses and other airport vehicles, and automobile parking. This function usually has a large staff for the various operating, cleaning, guarding and other functions involved, with certain services often provided through subcontractors.

ENGINEERING, CONSTRUCTION WORKS AND MAINTENANCE

2.52 This function provides maintenance services for airport installations and equipment, and also performs civil engineering work at the airport. Maintenance ensures that airport buildings and installations are kept fully operational; it includes the internal equipment of the air terminal (e.g. baggage conveyor belts, moving stairways, passageways, heating and air conditioning systems, power supply) and the external equipment (e.g. runway lighting, instrument landing system, telecommunication and meteorological equipment), as well as airport vehicles (e.g. buses, firefighting and apron vehicles) and ground-handling equipment (ground power units, aircraft stairs, and cargo and baggage handling equipment).

2.53 Engineering and construction services are often performed by outside consultants or contractors at airports that have not reached a size that enables them to efficiently use such services on a permanent and continuous basis.

2.54 Engineering includes the definition of new projects and programmes, including preliminary and final project specifications. An essential responsibility is to define the master plan for the development of the airport to its optimal capacity so as to efficiently meet growing traffic volumes. This would include the location of additional runways and passenger terminals, in the medium and long term, consistent with the planning and development objectives. The construction works department carries out part or all of the tasks, such as management of the operations, planning and supervision of the construction works, related to the ground facilities and the air terminals.

MARKETING AND PUBLIC RELATIONS

2.55 This function is aimed at promoting the airport to the aircraft operators and the general public as well as to potential users of airport services. This involves identifying typical features of the airport's customers and their requirements, public and media relations, operating guided tours, dealing with complaints, preparing brochures describing the airport for the public, and maintaining the airport's website.

2.56 Also included could be the development and management of commercial concessions, particularly at smaller airports where it would often form part of the administration or operation function. The development and management of commercial concessions and other non-aeronautical activities becomes increasingly important as airport traffic increases; at larger airports, it may therefore be justified to organize this activity as a separate function.

GROUND HANDLING

2.57 This function concerns only those airports that provide all or part of the ground-handling services at the airport. The function may be separated into terminal handling (passenger check-in, baggage and freight handling, flight plan processing) and apron handling (aircraft handling, cleaning and servicing). If it is not organized as a separate function, it could be included under "operation of airport facilities" (see paragraph 2.51). This function generally requires a large number of personnel, which can be partly or wholly subcontracted.

AIR TRAFFIC OPERATIONS

2.58 Concerned with the movement of aircraft within the airport and its vicinity, air traffic operations include air traffic control and related associated procedures, firefighting and rescue services, meteorological services, and the operation of pilot briefing offices, which are usually also responsible for the provision of aeronautical documentation and information. These services are often the responsibility of the State in which the airport is located.

SECURITY, IMMIGRATION, HEALTH AND CUSTOMS

2.59 All these services are required and generally provided by the State. They should be accorded the full cooperation of airport management. At some airports, an airport police or security force may be responsible for certain or all airport security functions.

ORGANIZATION CHARTS

2.60 While various types of organizational structures can be used to ensure effective management and internal communications for different types of operating entities, examples of some generic airport organization charts are included in the following pages. Although each airport is unique and will take on its own unique organizational and governance structure, certain basic factors need to be considered when an airport's organization chart is to be prepared.

2.61 The establishment of the most suitable organizational chart for an airport (or group of airports) should take into account the following factors:

- the functions and the objectives of the airport(s);
- the relationships between the various functions performed at the airport(s);
- the number of airports and their geographical distribution, if they are operated as a group/network;
- airport size, which determines whether each of the various functions should be entrusted to a distinct department, or whether some of them could be grouped together in the same organizational unit or department;
- the type(s) of traffic (international, domestic, civil, general aviation, military); and
- the degree of financial autonomy of the airport or airports concerned.

2.62 The organizational chart for an airport (or group of airports) indicates how the various airport functions are related, and in this way provides some guidance in the allocation and determination of costs of the facilities and services provided (a topic dealt with in Chapter 4). The graphical presentation of the functional relationships that exist for the relevant organizational structure should take into account the following considerations:

- one or more functions should be grouped together in each department;
- the functions grouped together should be related and have a common purpose;
- if the volume of traffic is low, the number of departments should be relatively limited. As the airport increases in size, its organizational charts tend to become increasingly complicated, but the multiplicity of departments should not result in any overlapping in responsibilities which would hamper the smooth operation of the airport;
- all departments should be closely coordinated, particularly as regards airport security; and
- regardless of the form of internal organization, airports are usually managed by a governing board (or board of directors), which is usually responsible for all important policy decisions regarding the airport, and a chief executive officer (or managing director, or director general). The chief executive officer is responsible for the day-to-day operation and administration of the airport and implements the decisions of the board.

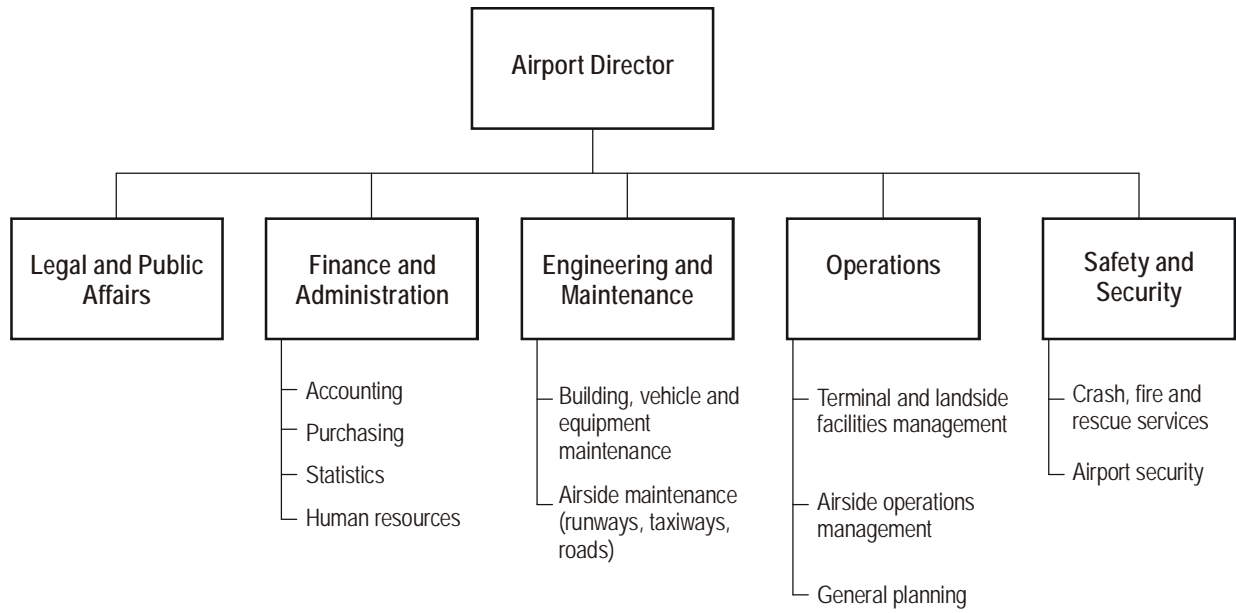


Figure 2-1. Airport Authority under CAA

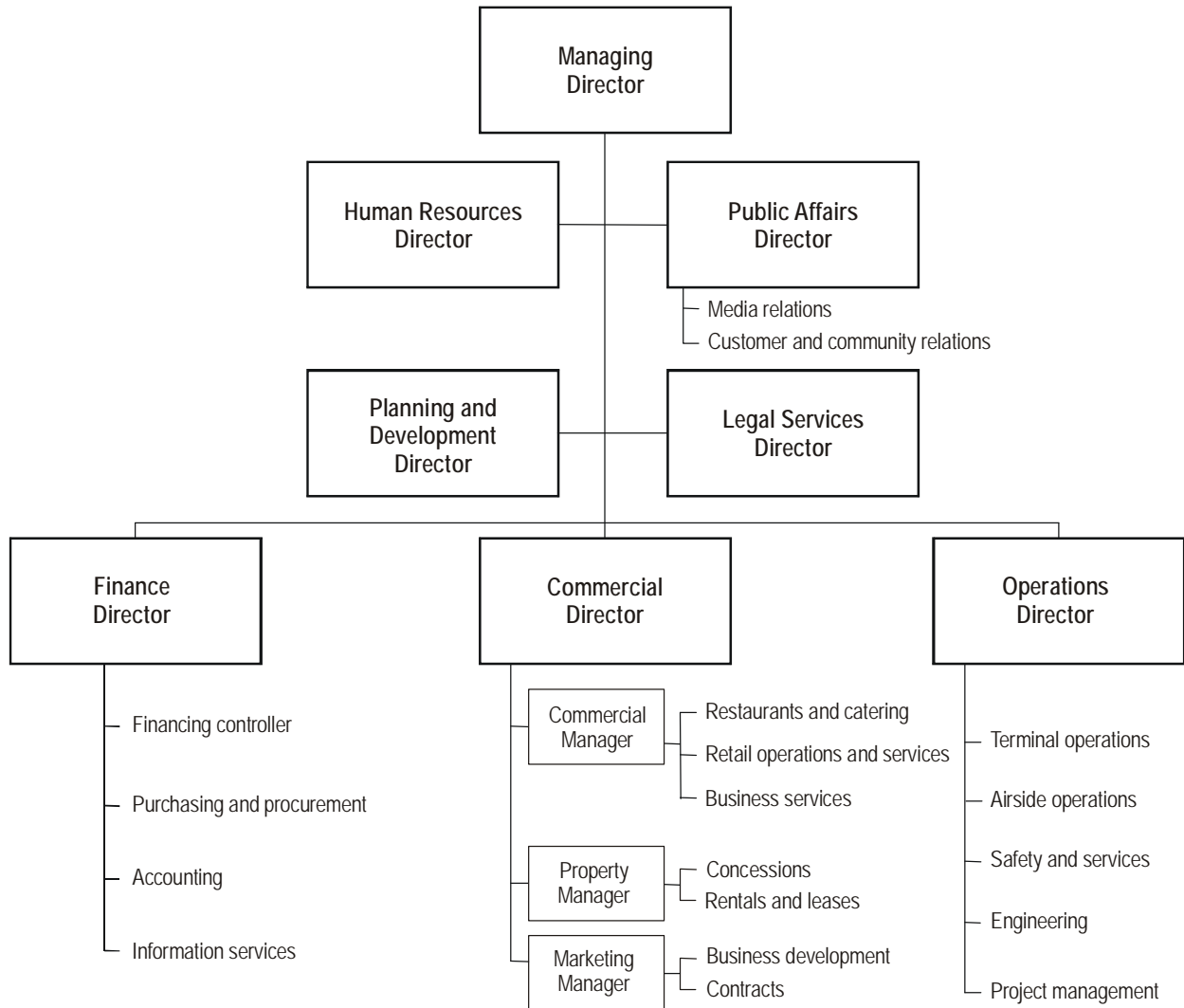


Figure 2-2. Commercialized airport (generic organizational chart)

Chapter 3

AIRPORT ECONOMIC AND FINANCIAL MANAGEMENT

This chapter describes the scope, relationship and purpose of accounting and financial management of airports.

Part A addresses the concept of best practices, as well as certain principal functional aspects of accounting, financial management and auditing.

Part B describes the framework for airport economic performance management.

A — BASIC ASPECTS OF FINANCIAL MANAGEMENT

APPLICATION OF PRINCIPLES OF BEST PRACTICES

3.1 In *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082, Section I, paragraphs 9-10) the Council of ICAO endorsed the application of principles of best practices of good corporate governance¹ for airports. With the aim of promoting transparency, efficiency and cost-effectiveness, airport management should apply best practices in operation and management in all areas of an airport regardless of whether it is owned and operated by the public or private sectors, and of whether or not it is profitable.

3.2 Paragraph 9, Section I of Doc 9082 recommends that, to ensure the use of best practices of good corporate governance of airports, States should consider:

- objectives and responsibility of the entities;
- shareholders rights;
- responsibilities of the board;
- role and accountability of the management;
- relationships with interested parties; and
- disclosure of information.

3.3 This would involve, for example, that airports recognize aircraft operators, passengers and others doing business at airports as customers who want to be satisfied that services are provided to an appropriate standard of quality, in a timely and cost-effective manner. The airport development plan should document a two-way exchange of

1. Refer to Chapter 2, Part E — Corporate Governance.

information and an in-depth consultation process between the airport operators and the users showing the relationship between the quality of service, the level of investment, and the level of charges.

3.4 Transparent accounts, published on a regular basis, should enable costs, revenues and (where appropriate) subsidies and cross subsidies to be clearly identified. At airports where all non-aeronautical revenues are taken into account when calculating aeronautical charges (the so-called "single-till" approach, which is described in Chapter 4, Part F, paragraph 4.121), there should be no differentiation between the income and costs from the two sources. Subsidization of aeronautical charges should not be regarded as a substitute for bearing down on operating costs. Where it is necessary for wider public interest reasons to subsidize airport operations, from public funds or from revenues generated by other airports in a common system (an airport network), the accounting system should clearly show this.

3.5 The State should objectively assess proposals for investments against financial and broader cost-benefit analyses, including evaluation of social needs, impact on national or local economy, and environmental effects. Proposals should also reflect safety and security requirements. The possible role of government, at the national and local level, in defining these criteria should be acknowledged in the proposals.

3.6 In addition to the considerations listed in paragraph 3.2 above, the airport could also apply principles of best practices in many other areas, such as: budgeting, bank and cash management, presentation of financial statements, measuring performance and productivity and benchmarking, service level agreements, economic pricing, collection of charges and concessions and rentals.

3.7 A service level agreement (SLA) is a tool by which airports and aircraft operators define the level of service and the terms of engagement or rules that will govern the airport/users relationship on the agreed services. Guidance material describing the objectives, characteristics, implementation aspects and the various possible forms of an SLA is included in Appendix 2.

PURPOSES AND NEED FOR AN ACCOUNTING SYSTEM AND FINANCIAL CONTROL

3.8 Financial accounting refers to the system according to which revenues and expenses are recorded and summarized so as to present an aggregate financial picture of the provision of airport services. How elaborate and detailed the financial accounts are depends on the extent of detail required and the size of the airport concerned. It is, however, essential from the outset to ensure that all accounting procedures are applied in accordance with recognized accounting rules, standards or conventions. Good internal controls as well as external auditing are also important.

3.9 Financial accounts may also be supplemented by management accounts which apply accounting techniques for the purpose of assisting all levels of management in planning and controlling all the different functions and services at an airport.

3.10 The basic purpose of financial control is to ensure that the resources used to operate airports are spent in an effective, timely, reliable and accountable manner. This involves monitoring and controlling the provision of services in financial terms to ensure that the expenses and revenues incurred in a particular year are in accordance with a previously approved budget.

3.11 Financial control and accounting are of course interrelated, since management cannot exercise financial control effectively without having at its disposal the data provided by a sound financial accounting system. It is therefore essential that any procedure being established to provide financial control be accompanied by a thorough examination of the accounting system to ensure that the latter can adequately provide the financial data necessary for this purpose.

SCOPE OF ACCOUNTING AND FINANCIAL CONTROL

3.12 Financial control essentially involves three steps: 1) a comparison of actual revenues and expenses with those planned; 2) where the two differ significantly, a determination as to whether the cause lies within the budget itself, in the management of the airport or is the result of external factors outside management's control; and 3) what corrective measures need to or can be taken.

3.13 Any substantial divergence from the original budget for a major specific revenue or expense item may also call for a review of the forecast outcome, to determine the extent to which any other items and the overall financial situation of the entity providing the airport concerned are likely to be affected. This will be particularly beneficial in cases where the shortfall could ultimately affect the operating efficiency of the airport.

3.14 At the end of each accounting period, which as a rule covers a one-year period, the entries in all individual financial accounts are totalled for presentation in two complementary forms or tables, namely the income statement (also referred to as revenue and expense statement or profit and loss statement) and the balance sheet. The former summarizes all revenues and expenses arising during a specified period, with the difference between the two totals being either a profit or a loss. The balance sheet summarizes assets and liabilities at a point in time. The profit or loss for a period goes to retained earnings on the balance sheet and, together with the balance in other equity accounts, provides the net worth of the airport.

3.15 An income statement and a balance sheet do not identify the movements in assets, liabilities and capital which have taken place during the accounting period. A statement of cash flows should be prepared to highlight movements in cash flows for the period concerned. This statement also provides information on the entity's liquidity position (this is addressed in Chapter 4, Part A). It should be noted that a statement of cash flows, when provided for a number of years, is of particular relevance and assistance when financing is being sought, because it shows the changes in the cash position of the airport, and can thereby influence the size and terms of the loan or financing being sought.

THE BUSINESS PLAN AND BUDGET

3.16 The quality of planning has a considerable influence on the successful outcome of an organization's management. Efficient and effective planning procedures will also meet the needs of users and the supervisory authority or regulator. These planning procedures will involve preparation of a business plan and a budget. The effectiveness of planning depends not only on the active participation of senior management, but of staff at all levels in the organization.

3.17 The business plan and budget have different timescales but should relate to each other within the following framework:

- a) a *strategy* should outline the long-term objectives which underlie the business plan, and the means whereby the airport can avoid design constraints²;
- b) a *business plan*, normally set for a period of three to five years, identifies the projects to be carried out during that period and sets the business environment for the budget; and
- c) a *budget*, normally set for one year, represents the first year of the business plan in financial and operational detail.

2. Reference should be made in that respect to the preparation of the Airport Master Plan (see ICAO's *Airport Planning Manual*, Doc 9184, Part 1, *Master Planning*).

3.18 Setting a business plan and a budget is an important part of the planning process and makes possible the following objectives regardless of organizational structure:

- a) planning to ensure that future requirements are anticipated and provided in time;
- b) coordination of the components of the provision of the airport to provide an effective service;
- c) efficient management of the factors of production involved in providing the airport; and
- d) financial control over the provision of the airport to ensure that the cost of provision is efficiently and effectively incurred.

The business plan

3.19 The purpose of the business plan is to specify infrastructure requirements and the actions to be followed over the plan period by the airport to achieve its long-term strategies. The plan should therefore prescribe specific objectives through which the goals will be achieved. In so doing, the plan should outline the business environment in which the airport is forecast to operate and its implications. Consideration will need to be given to political, legal, economic, social and technical factors, as well as regional and global developments that may affect the airport. In addition, the plan will need to highlight assumptions made that particularly affect the forecast plan outcome. Specific objectives can be broken down into the level and costs of services and the recovery of costs associated therewith, highlighting who is responsible and accountable for carrying them out. The plan will also identify key objectives against which an airport's performance will be monitored. Such planning will not only be financially orientated but will include goals concerning safety, security, the nature and level of services, the forecast demand for such services and the requirements of users.

3.20 The business plan should identify capital investment projects to be carried out together with their financial implications. It is important that new projects included in the business plan meet an operational requirement and be accompanied by an appraisal, setting out the economic and financial justification of the project (this is covered in more detail in Chapter 6). A compromise may need to be made between the cost of technical solutions to meet operational requirements and the financial implications for users. Forecast changes in numbers and type of staff over the plan period should also be included. The business plan should demonstrate that the airport is well managed by reference to relevant performance indicators, including safety, quality of service, productivity and cost-effectiveness (as described in Part B below and Appendix 1). These should cover the recent past and show future projections based on the outcomes in the plan being met.

3.21 The plan should take account of the following parameters:

- a) air traffic forecast;
- b) external economic assumptions (e.g. exchange rates, inflation, gross national product and interest rates);
- c) staff numbers and changing qualifications, training and work skills required of staff;
- d) limits on expenditure and on airport user charges;
- e) changing institutional arrangements;
- f) changes in costs (salaries, operating expenses);
- g) income; and

h) operating result (as measured by the difference between forecast revenues and costs).

3.22 Planning is a continuous process and the business plan needs to be updated annually to reflect substantial amendments. In order that these plans maintain continuity and do not become simply a series of “wish statements”, it is recommended that a comparison of the previous year’s plan be made against the current year’s plan and that any changes be identified and explained. However, some flexibility should be provided in order to keep the plan from being too rigid. The main uncertainties affecting the results, particularly in the later years, should be discussed (for example, the effects on capital investment of lower than forecast traffic or higher than forecast interest rates), and contingencies in the event of different outcomes could be indicated (for example, prioritizing investment projects in the event of a constraint on borrowing for capital investment). The plan might also assess the effect of different cost assumptions (for example, higher staff or operational costs).

The budget

3.23 The budget should be based on the first year of the business plan. It usually covers the period corresponding to the annual financial year and should be revised only exceptionally, when unusual and unforeseeable circumstances arise during the budget year. The expected actual income and expenditure, however, should be regularly forecast during the year.

3.24 A budget is composed of two elements:

- a) budget that forecasts revenues and expenses (including depreciation and interest); and
- b) a capital budget that forecasts capital expenditure detailing proposed investment in upgrading existing assets or acquiring new assets during the year.

3.25 The budget should be organized in line with the accounting system used to record revenues and expenses. For a budget to be a useful control device, it must provide guidance to operating units expending resources to produce services. Budget items should be consistent with various sub-accounts in the accounting system. The budget should be formatted so that it is easy to compare the actual results with the budgeted results on a quarterly or monthly basis as well as for the year as a whole. Consequently, very detailed comparisons (e.g. item by item in the various sub-accounts) may not be necessary.

FINANCING AND CASH MANAGEMENT

3.26 Financing and cash management refer to those practices that aim to maximize the return on the invested funds and the efficient procurement of funds. These tasks can be undertaken internally or externally, and sometimes by State treasuries. Cash management needs to be complemented by the management of foreign currency and interest rate exposure. The latter comprises the minimization of the risks associated with movements in market rates of interest to control the return on financial investment and the cost of debt.

3.27 Cash management usually involves forecasting cash needs and balancing these needs against expected cash inflows and outflows, i.e. receipts and payments. Typically, a 90-day forecast of these factors is maintained for this purpose, or could be even longer where major capital expenditures are anticipated. Decisions on when to borrow cash to cover expected cash deficits and when to invest surplus cash, and the time periods relative to each of these circumstances, completes the cycle of cash management events. The effective management of cash resources can make an important contribution to the overall financial performance of an airport.

3.28 Policies, procedures and systems for cash management should be based on clear descriptions of authority. Reviews or audits at unscheduled times should be undertaken to guard against possible misuse of authority or abuse of trust implicit in the relationship between the airport and the banking institution concerned.

INTERNAL AND EXTERNAL AUDITING

3.29 Internal audit can be defined as an independent appraisal function within an organization, for the review of activities, as a service to all levels of management. It is a control that measures, evaluates and reports upon the effectiveness of the whole system of internal controls, financial and otherwise, which have been established by management to safeguard its assets, ensure reliability of records, promote operational efficiency and monitor adherence to policies and directives. Internal audit is most effective when independence is maintained, i.e. where the auditors are not engaged in any system that they would normally review and appraise. The internal audit function is itself an integral part of the system of internal control, and an internal audit should not only report, for example, on the effectiveness of the system of internal controls but also make recommendations to improve it.

3.30 External audit is an independent appraisal function performed by an outside entity that, for a State organization, could be done by the State auditor. The external auditor may have a statutory responsibility to report on the financial statements giving an account of management's stewardship. This independence will vary in relation to the method by which external audit is selected. Another factor to be recalled is that external audit provides a valuable service not only to the controlling body to which it reports but also to users and others being served by the entity being audited. Care should be taken in the selection process of an auditor.

3.31 The main difference between external and internal audits is that of emphasis. For instance, the internal auditor concentrates attention upon internal controls within the airport concerned; the external auditor, while interested in internal control, will also want to ensure that the airport acts only within its authority (which may be statutory) and that its accounts present a true and fair view of its activities. External audit authority generally stems from statute, but the responsibilities arising from this authority are often extended and amplified, for example, by standards and guidelines issued by professional accountancy bodies. An important difference between internal and external audit lies in the line of reporting. The internal auditor reports to management; the external auditor, while also submitting reports to management, has an external reporting line to the ultimate airport controlling body. This reporting line manifests itself at the end of the external audit, when an external auditor will be required to certify the accounts.

3.32 Both internal and external audit have roles to play with respect to airport charges, such as passenger service charges, which are collected for the airport by the airlines or other parties. Both audits will need to be satisfied with the control measures in place by the organization collecting the charges and by the airport organization to ensure that all revenues due to the airport are collected and promptly paid to the airport.

B — ECONOMIC PERFORMANCE MANAGEMENT

FRAMEWORK

3.33 Performance management involves engaging in activities to ensure that objectives are consistently being met in an effective and efficient manner. Since airports employ considerable resources in their day-to-day operations, performance shortfalls can result in suboptimal use of airport facilities and in additional costs to their users and society as a whole. In contrast, the good performance of airports will have a positive impact on other members of the aviation community including ANSPs and regional planning entities.

3.34 ICAO's policies on charges in Doc 9082 (Section I, paragraph 16) recommend that States ensure, within their economic oversight responsibilities, that airports develop and implement appropriate performance management systems³. The need for an appropriate performance management system is independent of the organizational format of the airports. This is because the performance of an airport is more related to its governance than to its ownership and control structure (see Chapter 2).

3. Although performance management can be applied to all aspects of an airport's performance including economic, managerial, operational and technical performance, this chapter and its appendix focus exclusively on economic and managerial performance.

3.35 Performance management is a systematic and iterative approach within an organization that consists of defining a strategy and executing it through the alignment of resources and behaviours, so that the performance of the airport improves over time. Performance management should be part of the business plan of an airport. An airport will generally implement a performance management system through a series of steps as outlined below:

- a) identify Key Performance Areas (KPA)s;
- b) define performance objectives taking into account the interests of aircraft operators, end-users and other interested parties;
- c) select performance indicators (and supporting metrics);
- d) establish performance targets taking into account the interests of aircraft operators, end-users and other interested parties;
- e) create and implement a plan, in cooperation with other members of the aviation community, to achieve performance targets;
- f) consider, and where appropriate, provide performance incentives;
- g) periodically assess actual performance results by using benchmarking, as appropriate; and
- h) publish performance reports on the results achieved.

3.36 ICAO's policies on charges in Doc 9082 (Section I, paragraph 16) recommend that providers focus on at least four KPAs (safety, quality of service, productivity and cost-effectiveness), it being understood that States may choose additional KPAs according to their objectives and particular circumstances, and that they select at least one relevant performance indicator and its target for each KPA.

3.37 An important feature of performance management is the feedback loop. The performance management process uses the results of assessments of actual performance to periodically adjust KPAs, performance objectives, targets and plans to achieve results, as appropriate.

3.38 In setting performance monitoring targets, the airport should consider the interests of various types of users, including end-users. As individual parties tend to have different expectations, opinions and priorities, the airport needs to adopt a process that seeks to reconcile these differences insofar as this can be done. However, in many cases there may be mutually exclusive requirements. Where differences cannot be reconciled, the airport operator should prioritize in the interests of current and future users (i.e. consider dynamic as well as productive efficiency) to ensure that adequate and appropriate provisions are being made in this regard. The regular consultation process with users, as outlined in Chapter 1, should include the presentation of performance monitoring results.

3.39 It is also important to recognize that a number of entities, such as approach/aerodrome control services providers, aircraft operators, ground handlers, catering companies, fuel suppliers, customs agencies and security companies, generally have a role in the aeronautical and/or non-aeronautical activities at the airport. All such entities contribute to the overall performance of the airport. As part of its role as manager and operator of the airport, an airport should, through the use of service level agreements (SLAs) and incentive/penalty systems, ensure that the various entities perform their functions in such a way as to optimize the outcome from the perspective of the users, including end-users.

3.40 There is no single global, all-encompassing application of the performance management process, but many simultaneous — and often interrelated — applications at more specialized and localized levels. The level and complexity of an appropriate performance management system depend on various factors, including the size of the airport, the nature of its customer base, the degree of competition between airports and their position in the market, the

costs and benefits related to various options, and the legal, institutional and governance framework. It is important to ensure that the introduction of such a system will improve overall service quality from a customer perspective, and not artificially skew the business by seeking to optimize specific indicators.

3.41 Airport performance is frequently discussed in relative terms, which can be internal or external. Internal performance measurement means considering an airport's performance against itself over time (internal benchmarking, or self-benchmarking). External comparisons involve comparing airports with one another at a single point in time and through time (external benchmarking).

3.42 The key attributes and considerations in the establishment of an airport performance management system are discussed in detail in Appendix 1. They should be considered as a guide to developing performance management and should not be seen as overly prescriptive.

Chapter 4

THE PROCESS OF SETTING AIRPORT CHARGES

Divided in nine parts, this chapter offers guidance on how to determine the cost basis for airport charges and rates.

Part A gives broad descriptions of accounting systems designed to meet requirements for certain specific management functions.

Part B provides advice on how to determine the cost basis for charges on air traffic.

Part C describes the allocation of costs to airport cost centres and service lines.

Part D describes the cost basis for individual charges on air traffic.

Part E deals with the determination of costs attributable to concessions and other non-aeronautical activities.

Part F describes the methods that may be used for attributing non-aeronautical revenues to an airport cost base.

Part G addresses various factors that need to be considered once costs attributable to air traffic have been determined, before the charges are set.

Part H suggests systems to be applied with regard to individual types of charges, and how charges should be established in each instance.

Part I focuses on various factors related to the collection of charges.

A — ACCOUNTING

GENERAL

4.1 While airports are operated under a variety of institutional frameworks — some as separate independent entities, others within an airport system or network — regardless of institutional/ownership structures, an airport accounting system should serve the interests of the various parties concerned. At a minimum, it should provide basic information to assess the financial health of the airport, to justify the charges imposed on its users, and to assess the performance of the airport over time. When designing an airport accounting system, it is useful to recognize the needs of the various parties concerned:

- Airport owners, governments, lenders, aviation authorities, etc., are all interested in the financial health of the airport. Information reflected in a financial statement will often serve their needs.

- Airport managers also need ready access to the financial data organized to allow for a detailed analysis of the financial performance of the airport. For this purpose, it is often necessary to organize financial data based on the airport's various cost centres.
- Airport users (air carriers, general and business aviation, inspection agencies, air navigation services provider(s), concessionaires) seek cost justification for the charges imposed by the airport. To provide such justification, it is often necessary to arrange financial data according to the various service lines within an airport.

4.2 In summary, when designing or upgrading an accounting system, reporting flexibility should be a critical design component. In order to achieve such flexibility, the accounting process leading to the production of financial statements must be understood as well as the statements for cost centres and service lines. While the accounting process behind financial statements is referred to as financial accounting, the process allocating financial data to cost centres and service lines is often referred to as management accounting. Figure 4-1 illustrates how the accounting system may be organized for an airport and the relationship between financial data and cost basis for airport charges (which is discussed in the following sections of this chapter).

FINANCIAL STATEMENTS

4.3 Airports operated as autonomous entities, under public or private ownership, are normally required to provide the following financial statements: a) income statement (revenue and expense statement); b) balance sheet; and c) cash flow statement. In order to produce the financial statements, a system must be developed for identifying various types of financial outlays and receipts. This involves establishing individual accounts, each showing a specific type of revenue, expense, asset or liability and cash flow. While the income statement, as indicated in paragraph 3.14, shows the revenues and expenses of the airport over a specific time period, the balance sheet is a snapshot of the financial health of the airport on a specific date, showing the value of assets and liabilities in relation to the net value or equity (including retained earnings). The number of accounts established for a specific airport accounting system will depend on the degree of detail sought, i.e. the more elaborate the system, the greater will be the subdivision of accounts established.

4.4 Accounts recording revenues and expenses can be maintained on an accrual accounting basis or a cash accounting basis. Under accrual accounting, revenues are credited to the period (usually the financial year) in which they are earned and expenses charged to the period when they are incurred. Alternatively, under cash accounting, revenues are credited to the period when they are received and expenses recorded when paid. Accrual accounting systems reflect the financial position of the entity concerned better and are based on standard accounting practices.

4.5 In many cases, the financial statements of the airport may include operations that do not relate to the airport in question. For instance, the airport entity may operate several airports, air navigation services or even a local port. In other cases, some airport operations may be carried out by other entities and reflected in their financial statements. For instance, a department of public works may construct and provide capital assets to the airport, or the national telecommunications department may provide services to the airport without charge. In cases where the financial statements of the entity operating the airport do not reflect the operations of the airport in totality, some additions to and subtractions from the airport's financial statements will be required to ensure that a true and fair financial picture of the airport is provided. It is generally good practice to do this following the accounting conventions incorporated in the financial statements.

4.6 For various purposes (e.g. to obtain financing or to recover costs), it could be necessary to convert the financial statements into a format familiar to a lending institution or an international airline. International accounting principles, such as the Generally Accepted Accounting Principles (GAAP), or International Accounting Standards (IAS), or any other similar recognized standard would be acceptable.

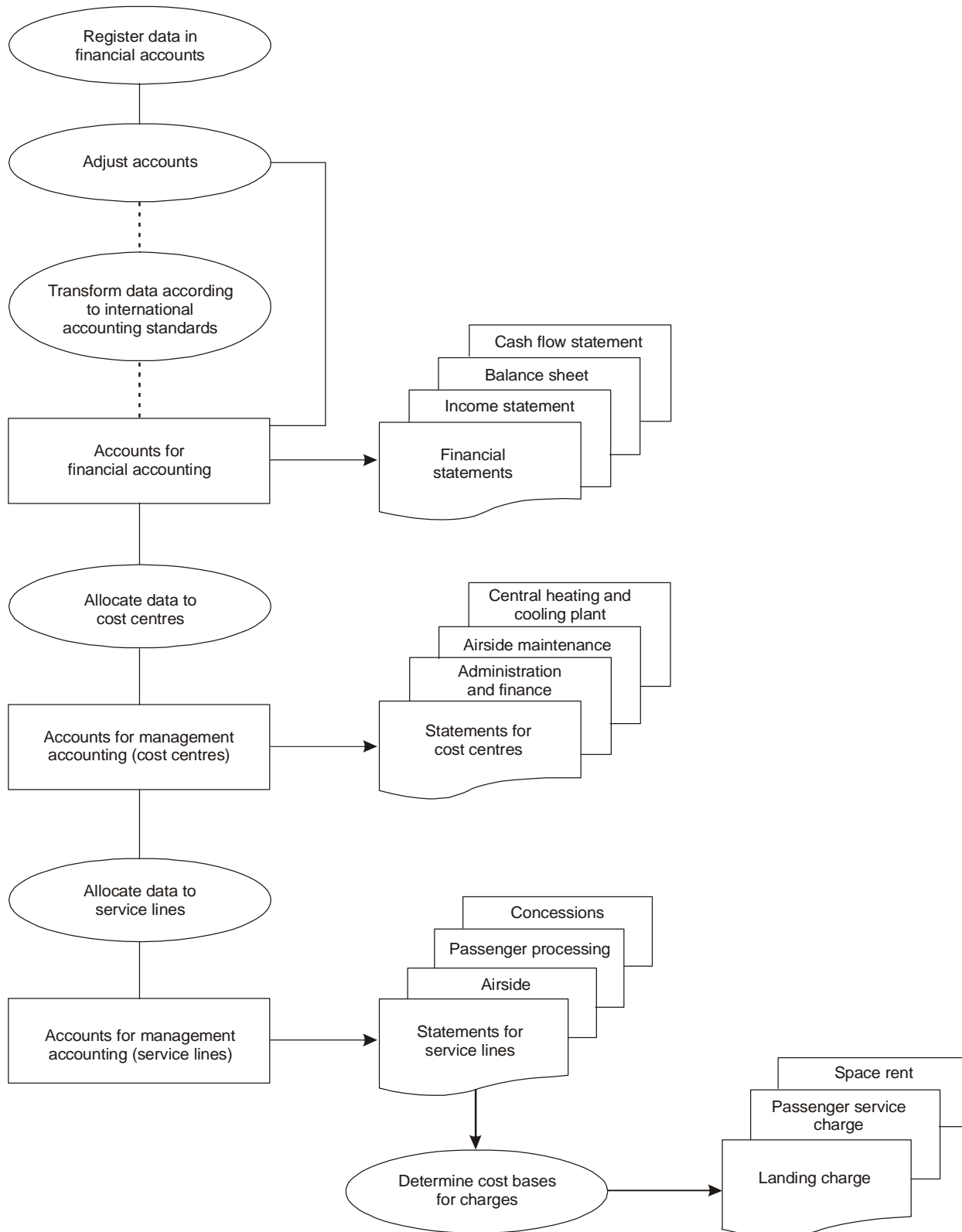


Figure 4-1. The accounting and cost determination process

4.7 The identification and subsequent recording of items is usually more easily accomplished for revenues than for expenses. This is chiefly because revenue sources tend to be fewer in number than expense items, and because each revenue item, with few exceptions, is often easily identifiable with only one type of source, whereas one expense item can frequently be identified with several major expense categories. The information required in an accounting system for airports can vary considerably in detail and layout. The precise level of detail will depend on management requirements at the particular airport concerned. However, there is a basic itemization of revenues and expenses that may be considered a minimum, which is described below.

REVENUES

4.8 Revenue items that may be considered essential to meet the basic data needs of an airport management are outlined below as they might appear in a statement of revenues and expenses (the items shown are not intended to present an exhaustive list of the different sources of revenue).

Table 4-1 indicates what should be included in the individual revenue items.

Table 4-1. Revenues

Revenues from air traffic operations:		
• Landing charges (including lighting and approach/aerodrome control charges) ...	_____	
• Passenger service charges	_____	
• Cargo charges.....	_____	
• Parking and hangar charges	_____	
• Security charges	_____	
• Noise-related charges		
• Other charges on air traffic operations		
Total revenues from air traffic operations.....		_____
Revenues from ground-handling charges		_____
Revenues from non-aeronautical activities:		
• Aviation fuel and oil concessions (including throughput charges)	_____	
• Restaurants, bars, cafeterias and catering services.....	_____	
• Duty-free shops.....	_____	
• Automobile parking	_____	
• Other concessions and commercial activities operated by the airport.....	_____	
• Rentals	_____	
• Other revenues from non-aeronautical activities	_____	
Total revenues from non-aeronautical activities.....		_____
Bank and cash management revenues		_____
Grants and subsidies		_____
Other revenues		_____
Total revenues		_____

Revenues from air traffic operations

- 4.9 *Landing charges (including lighting and approach/aerodrome control charges).* Charges and fees collected for the use of runways, taxiways and apron areas, including associated lighting.
- 4.10 *Passenger service charges.* Passenger service charges and other charges and fees collected for the use of the passenger terminal(s) and other passenger-processing facilities (e.g. for passengers embarking or disembarking).
- 4.11 *Cargo charges.* Cargo charges and any other charges or fees collected in respect of cargo for the use of the airport's freight-processing facilities and areas.
- 4.12 *Parking and hangar charges.* Charges collected from aircraft operators for the parking of aircraft (where not included in the landing charge) and their housing in airport-owned hangars, including any revenue from the leasing of such hangars to aircraft operators. Towing charges, if imposed, should also be included under this heading.
- 4.13 *Security charges.* Charges and fees collected for the provision by the airport of security services for the protection of passengers and other persons at the airport, aircraft and other property.
- 4.14 *Noise-related charges.* Charges collected related to the noise alleviation and prevention measures.
- 4.15 *Emissions-related aircraft charges.* Charges collected to address local air quality problems at or around airports.
- 4.16 *Other charges on air traffic operations.* All other charges and fees collected from aircraft operators for other types of facilities and services provided at the airport for the operation of aircraft.

Revenues from ground-handling charges

- 4.17 This refers to charges and fees collected from aircraft operators for the use of facilities and services provided by the airport for the handling of aircraft. It should be noted that at the majority of airports ground handling is largely carried out by one or more airlines or special ground-handling enterprises. In the latter case, the airport will impose concession and/or rental fees which should be recorded as revenues from non-aeronautical activities.

Revenues from non-aeronautical activities

- 4.18 *Aviation fuel and oil concessions (including throughput charges).* All concession fees, including any throughput charges, payable by oil companies or any other entities for the right to sell or distribute aviation fuel and lubricants at the airport. Revenues from an automobile service station concession, including the sale of automobile fuel and lubricants, should be entered in the revenue accounts covering "Other concessions and commercial activities operated by the airport".
- 4.19 *Restaurants, bars, cafeterias and catering services.* Charges and fees payable by commercial enterprises or other entities for the right to operate restaurants, bars, cafeterias and catering services at the airport, including aircraft catering. It would also include any revenues derived from any such activities when operated by the airport.
- 4.20 *Duty-free shops.* Charges and fees payable by a commercial enterprise or any other entity for the right to operate duty-free shop(s) at the airport, and for off-airport duty-free shops to deliver goods sold at the airport. It would also include any revenues derived from duty-free shops operated by the airport itself.
- 4.21 *Automobile parking.* Charges and fees payable by a commercial enterprise or any other entity for the right to operate automobile parking facilities at the airport. It would also include any revenues derived from such facilities when operated by the airport itself.

4.22 *Other concessions and commercial activities operated by the airport.* Any concession charges or fees, other than those mentioned above, payable by commercial enterprises or other entities for the right to sell goods and services (such as automobile rentals, and banking and exchange bureaus concessions) at the airport. Also included are any revenues derived from commercial activities (shops or services) operated by the airport itself and not mentioned above, as well as any public admission fees charged for entry to areas of special interest (e.g. terminal observation areas) or for guided tours within the airport area.

4.23 *Rentals.* Rentals payable by commercial enterprises and other entities for the use of airport-owned building space, land or equipment. Such rentals should include those payable by aircraft operators for airport-owned premises and facilities (e.g. check-in counters, sales counters and administrative offices) other than those already covered under "air traffic operations" above.

4.24 *Other revenues from non-aeronautical activities.* All other revenues the airport may derive from non-aeronautical activities. It would also include payments received by the airport for such services as heating, air conditioning, lighting, water, cleaning and telephone use, provided they are not included in the rental or concession fees, and for any services provided to non-aviation entities outside the airport.

Bank and cash management revenues

4.25 This includes any revenues derived from investments and cash management such as interest on bank accounts, treasury bills, short-term debentures and bonds, or from trading in discounted notes and other similar revenues. Interest received may be deducted from interest paid to arrive at a net interest cost which is then shown as an expense item.

Grants and subsidies

4.26 This covers any payments received and not requiring the transfer of assets or provision of services in return. This may entail a payment to the airport by the State to cover services that are exempted from user charges or to cover the full cost of providing services to some users.

EXPENSES

4.27 Basic financial accounting is performed by category of expense and usually follows professional accounting standards and statutory requirements. The detail will vary according to local practice but the following are likely to be the minimum required for published accounts. See Table 4-2.

Further particulars on what should be included in individual expense categories are contained in the following paragraphs.

Table 4-2. Expenses

Operations and maintenance:	
• Personnel costs	_____
• Supplies	_____
• Services — contracted	_____
• Administrative overhead	_____
• Other non-capital costs	_____
Capital costs:	
• Depreciation and/or amortization	_____
• Interest	_____
• Other capital costs	_____
Total expenses	_____

Operation and maintenance

4.28 *Personnel costs.* Direct remuneration to personnel, as well as expenses for social and medical insurance, pensions, remuneration in kind (e.g. board and accommodation), travel subsistence allowances, employee training and other such costs that may be associated with employee compensation or development.

4.29 *Supplies.* Cost of spare parts and consumable materials that the airport actually incorporates or expends in providing facilities or services without the assistance of agencies or enterprises outside the airport entity (see *Services — contracted*). Such costs should include the operation and maintenance of fixed assets (e.g. vehicles, machinery, furniture and fixtures) provided such items are not also listed as depreciable assets. Also included is the cost of services and supplies, such as heating, air conditioning, lighting, water, cleaning, laundry, sanitation, stationery and postage.

4.30 *Services — contracted.* Payments made to others for the provision of airport facilities and services.

Administrative overhead

4.31 To the extent it has not been reported under *operation and maintenance*, this would include the cost of common administrative services, such as overall management and economic planning.

4.32 *Other non-capital costs.* Non-capital costs not reported under *operation and maintenance* or *administrative overhead*. Included in such costs are national and other governmental taxes (e.g. property and income taxes) payable by the airport as a taxable entity. Excluded are any sales or other taxes collected from third parties on behalf of government taxing authorities (e.g. sales tax on goods and services sold in airport-operated shops, and income tax deductions from staff salaries).

Capital costs

4.33 *Depreciation and/or amortization.* Amount by which the value of the assets has decreased during the year due to physical deterioration, obsolescence and other such factors that limit their productive life. Also, the amount by which intangible assets (e.g. developmental and training costs) have been written off during the year would be included.

4.34 *Interest.* Interest paid or payable on debts during the year as well as any interest computed on capital assets.

4.35 *Other capital costs.* Long-term leases and capital repayments if an airport applies cash accounting instead of depreciation.

CAPITAL

4.36 Capital of an entity is normally made up of equity and debt, each with a different financing cost to the entity. The long-term capital (i.e. the sum of the share capital, the reserves and the long-term debt) is equal to the sum of fixed assets (net of depreciation) and net current assets (current assets less current liabilities).

Value of assets

4.37 There are different ways of determining the value of assets: among others, historical cost, current replacement cost, or market value, and the value may differ from the balance sheet value. The asset may be valued from the airport's perspective or the regulators', and whether the assets base is regulated or not may also be a consideration. Asset values are also likely to be depreciated to reflect the wearing out of the assets. Each method will have a direct and different impact on the rate of return.

Working capital

4.38 Working capital facilitates the working or running of an entity and is the difference between current assets and current liabilities (also known as net current assets), excluding cash in hand and at the bank, and/or an overdraft.

Capital employed

4.39 In the case of an airport entity that has its own balance sheet, it is possible to determine a value for capital employed. For an airport that does not have a comprehensive balance sheet it will be necessary to create one from the underlying accounting records. There is no single generally accepted definition of capital employed because its composition depends on the use to which it is put. It may be defined in terms either of the capital invested in the airport or of its assets. The alternatives are shown in Table 4-3. In some cases, the total cost of fixed and current assets can be reduced by non-interest bearing liabilities.

4.40 Some airports are required to achieve a financial return. This can be expressed as a percentage of capital employed and is sometimes referred to as the return on capital employed (ROCE) or return on assets (ROA). When used in this way, it is usual to measure the return as profit before interest and tax. As the return relates to a period of time (e.g. one year), it is also more appropriate to define capital employed as the average over this period rather than at a particular point of time (e.g. end of the year). For the calculation of the return on capital, it is usually adequate to use the average of the opening and closing figures of capital employed over the period concerned.

Table 4-3. Capital employed

<i>Liabilities-based definition</i>	<i>Equivalent asset definition</i>
Total capital share capital reserves long-term debt current liabilities	Fixed assets plus current assets
Long-term capital share capital reserves long-term debt	Fixed assets plus net current assets (current assets minus current liabilities)
Equity/shareholders' capital share capital reserves	Fixed and net current assets minus long-term debt

Reasonable rate of return

4.41 When defining what costs should be considered in the cost basis for airport charges, ICAO's policies (Doc 9082, Section II, paragraph 2 i)) mention "the full cost of providing the airport (...), including appropriate amounts for cost of capital", and further in paragraph 2 viii) "airports may produce sufficient revenues (...) and so provide for a reasonable return on assets". However, charging authorities have encountered difficulties because of the lack of precision of these formulations, in particular with reference to what should be considered as "reasonable" in terms of rate of return.

4.42 Irrespective of the different structures that can be found in airport management, basic principles have generally been agreed. To arrive at the "cost of capital", first the financing costs of each part of the capital (i.e. "equity" and "debt") are calculated as required rates of return (in percentages). Then a "weighted average cost of capital" (WACC) rate is calculated depending on the proportion of equity and debt in the total capital of the entity. This rate is applied to the average capital employed to arrive at the cost of capital. Each component of an airport's capital structure has a different cost rate.

4.43 For organizations in States with developed economies (where equity and bond markets, sound commercial banks and access to wide capital markets are available), the "capital assets pricing model" (CAPM) provides a general model for calculation of cost of equity. The cost of debt is the actual interest rate applying to the debt capital, although the regulator may take a view on whether the debt has been efficiently incurred. To do otherwise would not incentivize the airport to put in place an efficient debt portfolio. However, since the structures of airports vary widely, the CAPM model may need to be modified to meet the requirements of different airports. According to national jurisdictions, taxation may also influence the calculation of WACC.

4.44 The exposure to risk¹ for investors in airports can be relatively low where the airport enjoys a measure of Government guarantee (which may enable them to borrow at sovereign borrowing rates) and/or is able to share traffic variation risk with airlines. In this situation risk exists but it is borne by the government and/or the airlines rather than exclusively by the providers of finance. In principle, there should be the prospect of a greater reward for equity to reflect the high risk that that bears compared to debt. Airports that are in transition from a Government service to a corporatized

1. Airports of different sizes and use may face different risk profiles. Such differences should be considered when calculating the rate of return.

structure often may not have much equity (highly leveraged) but may still enjoy a measure of Government guarantee. In these cases, a token return on equity based on borrowing rates may be sufficient. In contrast, for an airport with a highly leveraged structure, but without a government guarantee or traffic variation risk sharing, there may be quite a significant chance of financial failure and its cost of equity would be high to reflect these risks. Returns for some airports are capped by independent regulators. In such cases the regulators would decide what an adequate cost of capital is. In other cases the country may have a high inflation rate. In these cases a margin on top of the inflation rate would provide the return on equity and the market interest rates would in any case include an inflationary adjustment. In States where there is no developed equity or bond market, or a robust competitive banking sector, calculating a beta² may prove difficult. However, in these cases the obtainable market interest rates should provide guidance to a reasonable cost of equity.

4.45 The CAPM formula states that an entity's cost of capital is equal to the risk-free rate of return (typically the yield on a short-term Government bond), plus a premium to reflect the extra risk of the investment, or its beta. Details on the methodology are presented in Appendix 3 together with a practical example. The general guidance provided by CAPM can be adjusted to meet the particular economic environment of the airport.

CASH FLOW

4.46 The statement of cash flows helps to measure the financial performance of the airport by showing its ability to provide the facilities and services whilst generating sufficient funds or cash inflows to cover its cash outflows, including payments for interest on borrowing and, when applicable, payments made to shareholders. This information is not provided by the revenue and expense statement or the balance sheet on their own, since they are usually prepared on an accrual accounting basis, which adopts the principle of matching income generated against the liability for expenditure in the period concerned. This is normally achieved through adjusting the cash flows.

4.47 Information is required on the liquidity, viability and financial adaptability of the entity managing the airport concerned. This can be measured by a statement of cash flows in conjunction with the balance sheet. The balance sheet provides information about the airport's financial position at a particular point in time including assets, liabilities and long-term debt and their relationship to each other at the balance sheet date. Information concerning the airport's liquidity is usually incomplete because the balance sheet is drawn up at a particular point in time. Alternatively, a statement of cash flows shows information about the reporting airport's cash flows in the reporting period, the objective being to show the airport's cash generation and cash absorption for the period concerned. It is not a replacement for the revenue and expense statement and balance sheet; indeed, when assessing future cash flows, it is prudent to use all three statements in order to ensure that likely cash flows generated from earlier transactions are accounted for.

4.48 The statement of cash flows analyses the cash flows under standard headings such as operating activities, returns on investments and servicing of finance, taxation, investing activities and financing. The objective is to ensure that cash flows are reported in a form that highlights the significant components of cash flow and facilitates comparison of the cash flow performance with other entities.

4.49 It is worth noting that the term "cash equivalent" includes financial instruments that are highly liquid and convertible into known amounts of cash without notice and do not have any significant risk of changes in value owing to changes in interest rates. Statements of cash flows have largely superseded working capital-based sources and application of funds statements. This is because cash flow is more widely understood and is more transparent in identifying movements relevant to the liquidity and viability of an entity. An example of this is that a decrease in cash available may be masked by an increase in stock or debts.

2. Extra risk of an investment.

COST CENTRE STATEMENTS

4.50 A cost accounting system should also be able to generate cost centre statements that will enable airport management to monitor airport activity according to various functions. Because most airport costs are fixed — independent of the number of daily aircraft movements at the airport — the ability to examine costs by cost centre allows airport management to monitor and/or control costs as they are incurred. How cost centres are established for an airport will be a function for several variables including airport size and organizational structure. As a general rule, it is useful for the cost centres to reflect the managerial chain of command at the airport. For example, if the garage is managed as a separate facility by a separate foreman, then it is a candidate for becoming a cost centre. Cost centres can exist within other cost centres. Thus, if there is a superintendent in charge of maintenance, then the garage could be one cost centre within maintenance, along with electrical, plumbing and other cost centres.

4.51 Typical cost centres may include:

- administration and finance;
- airside maintenance;
- central heating and cooling plant;
- community affairs;
- rescue and firefighting service;
- garage;
- groundside management;
- marketing;
- plumbing, mechanical and electrical;
- security; and
- terminal management.

4.52 Senior management will hold cost centre managers accountable for their management of the costs and functions of the cost centres. Performance measures, and changes in performance measures through time, will permit an appropriate assessment of efficiency and effectiveness. Comparisons between airports can nevertheless be misleading, considering the complex mix of elements at an airport. It may be much easier and more productive to compare and benchmark two cost centres (e.g. rescue and firefighting service) at different airports.

4.53 Cost centres may be built into the detailed accounting records associated with the production of the financial statements above, but it is by no means generally or necessarily so. It is possible to code a payroll and hours spent on particular activities so as to have the detailed accounting records produce a labour distribution across some or all cost centres, with similar arrangements for purchased services, depreciation, consumption of inventory items and so forth.

4.54 Alternatively, it may be sufficient to study particular account items occasionally and apply percentages from month to month. In practice, some input to cost centre statements may be directly costed from detail records (e.g. labour distribution) and other input allocated on a percentage basis derived from prior years' experience (e.g. heating and electricity).

4.55 Cost centres directly affect the costs associated with the provision of airport service lines, and cost centre statements may be thought of as input to service line statements. The linkage back from service line statements to cost centre statements should permit an informed discussion between airport management and users insofar as historic costs of operation are concerned.

SERVICE LINES STATEMENTS

4.56 The notion of service lines is a user-driven concept, which is generally expressed in terms of the services that users receive. Consequently, it is essential that the airport accounting system be able to allocate various cost centre data to the various service lines. In fact, a service line may incorporate input from a variety of cost centres, as shown in Table 4-4.

4.57 It is improbable that any two airports will have identical cost centres and service lines. Service lines represent what the users are paying for. It is the user's window into the cost-effectiveness of services provided by the airport, and it is the interface whereby the airport demonstrates the costs inherent in providing the service. The combination of cost centre and service line reporting permits users to be informed consumers when they request levels of service, and it permits airport managers to assess the impact of changes (under consideration or imposed by circumstances) that will affect future charges.

4.58 Service lines may be partially built into the detailed accounting records associated with the production of the financial statements above, but it is extremely time consuming and unusual to do so. The repair of a truck may be carried out by the garage, or the truck may be sent out for repair. Either way, there is likely no way the exact future utilization of that particular truck across the service lines can be known in advance. Equally, tenants will not appreciate month-to-month fluctuations in rent because the heating plant was overhauled at a given month. It is possible to code average costs per hour, per tonne, per square metre and so forth to distribute cost centre outputs to service lines in a fairly detailed fashion. An electrical and mechanical cost centre may record individually major items installed or refurbished, and maintain records of labour utilized on a detailed basis.

Table 4-4. Examples of service lines

<i>Service line</i>	<i>Airport charges (associated with)</i>	<i>Cost centres (in support of)</i>
Airside	Landing charges Parking charges	Airside maintenance Rescue and firefighting service Garage Security Air navigation services
Passenger processing	Passenger service charges Security charges	Terminal maintenance Security Heating plant Flight information
Concessions	Space rent Percentage on turnover	Terminal maintenance Security Heating plant Marketing
Property rental	Space rent Recovery of utilities Maintenance charges	Heating plant Security Airside maintenance Ground maintenance

4.59 Alternatively, it may be sufficient to study particular cost centre output application to service lines occasionally, and apply percentages from month to month. In practice, the distribution may be little more than a spreadsheet quite distinct from the underlying accounting records of the airport.

ACCOUNTING OF PRE-FUNDING OF PROJECTS THROUGH CHARGES

4.60 Specific considerations pertaining to the accounting of pre-funding of projects through charges are addressed in Appendix 4, paragraphs 7 to 11.

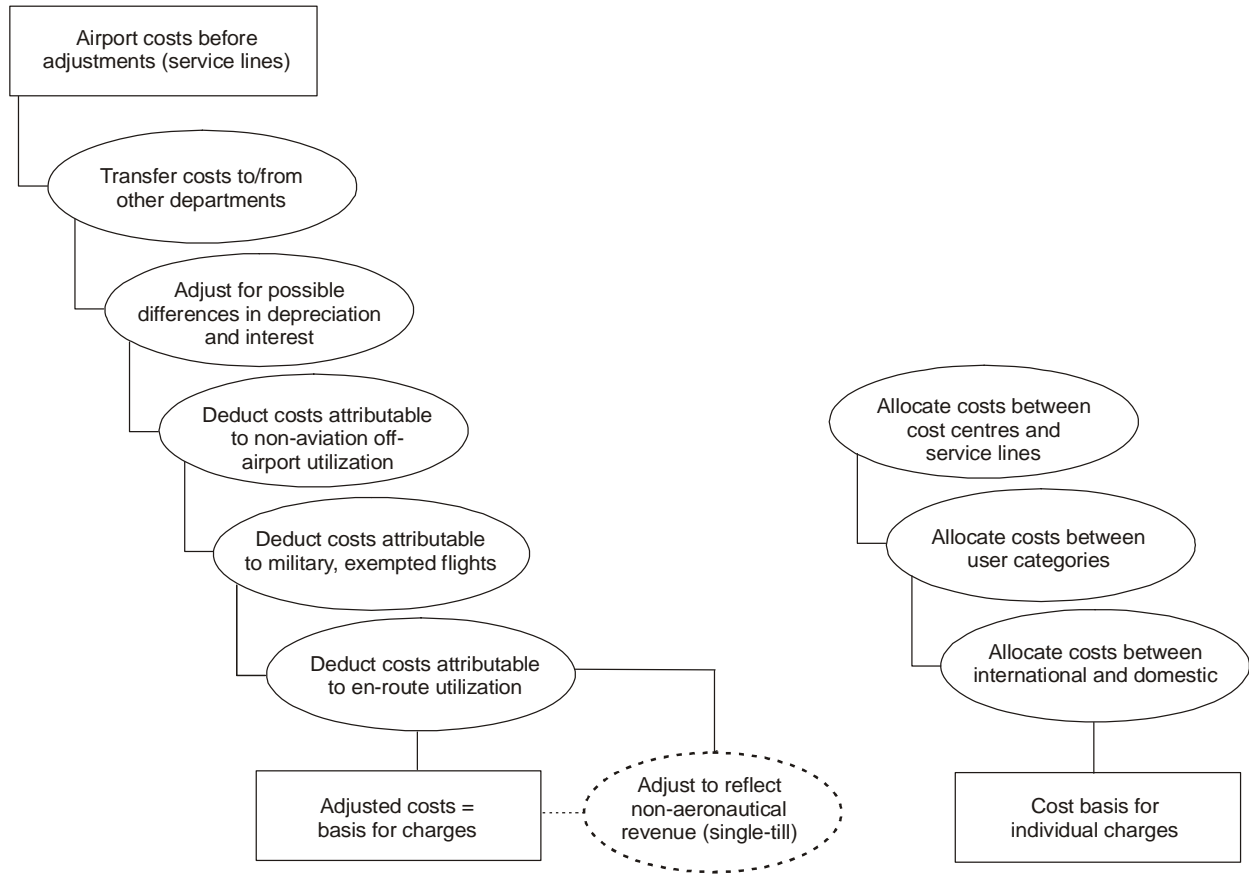
B — DETERMINING THE COST BASIS FOR CHARGES ON AIR TRAFFIC

4.61 With regard to the cost basis for charges on air traffic, ICAO's policies on charges (Doc 9082, Section II, paragraph 2 i)) state that "the cost to be allocated is the full cost of providing the airport and its essential ancillary services". The purpose of this part is to suggest an approach for determining and analysing total airport costs including costs attributable to non-aeronautical activities.

4.62 The establishment of the cost basis can be approached in several stages. First, the full costs of the airport need to be determined. The costs for safety, security and economic oversight provided by the State, or by an independent national oversight organization, or by a regional oversight organization, which are directly related to the provision of airport services, may be included in the airport cost basis for charges, provided that such costs are imposed on the providers of services. Where the airport is operated as a department within a civil aviation administration, this involves transferring costs to and/or from the airport department for services it receives from and/or provides to other departments or organizations. For some cost items such as depreciation and interest, the costs recorded in the regular airport accounts may need to be adjusted to better reflect the actual costs. Costs not attributable to air traffic or non-aeronautical activities then need to be estimated and deducted from the airport's total costs. These include non-aviation off-airport activities or services and costs attributable to en-route utilization of airport facilities and services. For reasons of equity and to avoid cross subsidies, costs attributable to flights exempted from user charges need to be estimated and deducted. The costs, so adjusted, form the basis for charges on air traffic as well as non-aeronautical activities. Second, once these two cost bases have been established, the air traffic cost basis can be allocated to user categories to form the cost bases for individual types of airport charges.

4.63 Considering the heavy workload in allocating costs to airport cost centres and service lines, it would be prudent to establish a priority arrangement among the cost centres and service lines. Normally, the highest priority should be given to allocating costs to aircraft movement areas, including approach and aerodrome control, and to passenger terminal buildings — first to air traffic areas within the terminal and then to concessions and rentals (shops, restaurants, office space, etc.).

4.64 All costs must be determined in accordance with generally accepted accounting and costing principles (i.e. they must be based on recognized rules, standards or conventions; see Chapter 3, Part A, paragraph 3.8 and Chapter 4, Part A, paragraph 4.6) to permit the costs of airport facilities and services to be recorded and analysed in accordance with their nature and origin. Practices and procedures will differ from State to State. The approach illustrated in Figure 4-2, refers to the single-till approach (discussed in Part F).



1 – DETERMINATION OF FULL COSTS AND ADJUSTMENTS

2 – ALLOCATION OF COSTS

Figure 4-2. Determination of the cost basis for charges on air traffic and of the costs attributable to non-aeronautical activities

FACTORS TO BE TAKEN INTO ACCOUNT IN ESTABLISHING
THE COST BASIS FOR CHARGES ON AIR TRAFFIC

Implications of organizational structure

4.65 The organizational structure within which an airport operates has a direct bearing on its financial management and the approach taken in arriving at the total costs to be included in the cost basis for charges on air traffic, as well as on the costs attributable to non-aeronautical activities. The manner in which financial management is to be organized needs to be given special attention when an airport or group of airports is not operated as an autonomous entity but by a civil aviation administration or another government department with similar responsibilities. Since the civil aviation administration's format of accounts may not be responsive to the requirements of the airport's management, the airport department could establish its own supplementary internal accounting system that would meet these requirements.

**Transfers of costs
to and from other departments**

4.66 Where an airport or group of airports is operated as a separate entity or department within a civil aviation administration, certain factors need to be taken into account when the actual costs and revenues of that entity are to be determined. For example, since it is part of a larger entity, it is likely that certain other departments within that entity or outside that entity would provide services or perform functions for the airport department. This may involve technical services, such as maintenance of equipment and vehicles, or administrative or overhead functions such as accounting, personnel administration, or the services of a legal department. In all these cases, the costs of the services or functions concerned must be determined and charged to the airport department. If this is not done, the costs of operating the airport will not be known and the charges on air traffic, as well as concession and rental fees and charges, could be based on less (or more) than actual costs.

4.67 Various approaches may be taken to determine the costs of the services and functions to be charged to the airport department. For example, concerning the costs of technical services, one approach is to calculate the costs per work-hour of the technical staff involved and then multiply the hours spent on airport work by that rate. Another approach is to allocate costs for services and functions using a percentage based on the share of the costs for the airport department in relation to the total costs of all departments involved in the services and functions concerned; it is to this total that the costs of material used should be added. An hourly rate should also be calculated for the costs of operation and maintenance of any tools and minor equipment used, including costs of power or fuel consumed, and an allowance for wear and tear. Moreover, depending on the extent of the technical services, an allowance should possibly be made for depreciation of building space and major equipment. Administrative overheads could be allocated by first establishing the total running and capital costs attributable to the departments concerned, and then estimating how much of their overall time was attributable to work pertaining to the airport department's operations, on the basis of which the airport department's cost share would then be determined. It should also be recognized that in allocating costs on the various services and functions, priority should be given to those attributable to the airport department and, if applicable, the air traffic control department.

4.68 Conversely, the airport department may be performing services such as those described in the preceding paragraph for other departments within the civil aviation administration. In those circumstances, the reverse applies, in that the costs to the airport department of providing the services concerned would have to be estimated and allocated to these departments with a consequential reduction in the overall costs of the airport department. If this is not done and if the costs attributable to services performed for other departments were to form part of the cost basis for charges on air traffic, such traffic would in fact be paying for costs not attributable to it.

4.69 Transfers of the type referred to above are not necessarily limited to airports within a civil aviation administration. An airport entity or civil aviation administration may either provide all the aeronautical facilities and

services at the airport or it may be charged for those provided by other government departments. However, in some instances, airport services are provided by another government department(s) without any corresponding charges being made either to the airport or levied on air traffic directly. This applies in some instances to costs of meteorological services provided at the airport, certain telecommunication services provided by another government department, etc. Assuming it is government policy to recover such costs from the users to the extent possible, there are two alternatives: 1) the costs should either be charged to the airport, where they would then be included in the cost basis for the airport charges concerned, or 2) the government department(s) involved should arrange for their costs to be covered by a separate charge(s), to be collected together with the airport's charges on air traffic. It should be noted in this context that Doc 9082 recommends (Section II, paragraph 3 viii) refers) that charges levied by different entities at an airport should, as far as possible, be consolidated, the combined revenues being distributed among the authorities concerned. This is discussed further in the following sections of this chapter.

Difference between costs recorded in airport accounts and costs used for determining the cost basis for charges

4.70 The airport accounts provide the basic reference for determining the cost basis for charges on air traffic and the costs attributable to non-aeronautical activities. Where the accounts are complete and where they cover all airport functions, they can serve that purpose well. However, it may not be advisable to rely only on airport accounts when determining the basis for charges even when the accounts are complete. This is because while the costs of operation and maintenance, and administrative overheads, would probably remain unchanged, the situation may be different with regard to capital costs. In the accounts, for example, assets may be depreciated according to government accounting standards that may not reflect the true operating life of the assets concerned, or they may not be depreciated at all. When the cost bases for charges are determined, a depreciation element reflecting the use of the assets during the period concerned (usually the financial year) must be included. This may result in the application of depreciation rates for charging purposes which differ from those reflected in the airport accounts. Also, interest imputed on the net capital value of airport assets would normally not be reflected in the airport accounts but should be included in the cost basis for charges.

Depreciation and/or amortization

4.71 The original value of an asset should be depreciated over its estimated useful life, and such depreciation should be included in the annual costs of the service concerned. Land is not depreciated since, unlike other fixed assets, it does not deteriorate and its useful life is not limited. Depreciation should not commence until a facility is placed in service.

4.72 While practices vary in the calculation of depreciation, the most commonly used methods are the straight-line method and the reducing balance method. The most common method used by national administrations, and also the simplest, is the straight-line method whereby depreciation is charged as a constant amount year after year during the book life of the asset concerned, the amount being determined by dividing the historical cost of the asset (less its anticipated residual value, if any) by the expected number of years of its book life. The reducing balance method involves the application of a fixed percentage to the book value of the asset, i.e. the historical cost less accumulated depreciation already charged, at the beginning of each accounting period. The actual amount of depreciation charged according to this method thus decreases each year. A third method used is the annuity method, where the amount charged to each year remains the same throughout the life of the asset concerned. However, it should be noted that the amount charged when this method is applied includes interest in addition to depreciation. Whatever depreciation method is used it should be consistently applied throughout the depreciation period of the asset.

Table 4-5. Depreciation and/or amortization

Examples of range of depreciation periods	
Buildings (freehold)	20–40 years
Buildings (leasehold) ³	Over the period of the lease
Runways and taxiways	15–30 years
Aircraft parking areas	15–30 years
Furniture and fittings	10–15 years
Motor vehicles	4–10 years
Electronic equipment (including Telecommunication equipment)	7–15 years
General equipment	7–10 years
Computer equipment	5–10 years
Computer software	3–8 years

Cost of capital

4.73 Cost of capital needs to be taken into account in the costing of the provision of airports. This basically falls into two categories. The first is the interest paid to creditors or lenders for the use of capital they provide (other than equity) for various financing purposes, usually in connection with the acquisition or provision of assets. The second category is the cost of capital applied on equity that is adopted for internal costing purposes and expresses the value attached to the use of all capital including equity capital.

4.74 In taking cost of capital into account in the determination of the costs, only one of the two categories should be applied to an asset or any part of an asset financed completely by borrowed capital.

**Arriving at the revised costs forming the basis for charges on air traffic
(and for costs attributable to non-aeronautical activities)**

4.75 The following adjustments need to be made to the costs of the various areas and services in order to arrive at the costs basis summarized in Figure 4-2. Because of their interrelationship, total costs by area or service attributable to non-aeronautical activities at the airport should also be identified. The principal purpose of this is not only to recover the costs to the airport of making the relevant premises available, but also to establish a minimum for these fees and charges. For that reason, it is necessary to identify the actual total costs attributable to the provision of the different premises (building space and land) and the associated facilities and services involved. It should be noted in this context that the emphasis is on determining the costs to the airport of providing the premises concerned, not their market value (that is a different type of assessment, which is discussed in Chapter 5). It should also be noted that some expenses, such as those allocated to aircraft movement areas, and air traffic control and meteorological services, would normally

³ Buildings built on leased land.

not be attributable to non-aeronautical activities. However, shares of the costs of all the other areas or services would normally be attributable to non-aeronautical activities, although the shares involved would differ significantly between individual areas and services.

Adjustment for costs attributable to non-aviation off-airport utilization

4.76 The relevant airport costs are not only those attributable to air traffic, but also to concessions, rentals and other non-aeronautical activities. In combination, the costs related to air traffic at the airport and all aeronautical and non-aeronautical activities serving or dependent on that traffic account for the costs attributable to airport operations. However, an airport may, in some instances, also be incurring costs which are not attributable to such airport operations and which therefore need to be deducted before determining the cost basis for airport charges. This could be costs attributable to non-aviation off-airport utilization of services provided by the airport. One example of this is when a meteorological office financed by the airport provides meteorological forecasts for maritime activities, agriculture, the press and other media, etc., in addition to providing aeronautical meteorological forecasts and briefings. Another example is when an airport provides such services as snow removal or firefighting to a neighbouring municipality.

Adjustment for costs when the airport provides en-route utilization of airport facilities and services

4.77 In many cases, the airport provides services such as air traffic control, including communications, and meteorological services that are not only used by aircraft when landing and departing from the airport, but also during the en-route phase of their flight. Such services may also be used, moreover, by traffic overflying without landing at the airport. Where the overflying traffic element is significant, it becomes desirable in the interest of equity to determine the cost shares attributable to both airport utilization and en-route utilization, so that neither group of users will be burdened with costs properly attributable to the other. Guidance on this subject is provided in the *Manual on Air Navigation Services Economics* (Doc 9161).

Adjustment for costs attributable to exempted flights

4.78 In Article 3 of the *Convention on International Civil Aviation* (Doc 7300) a distinction is made between civil and State aircraft. Article 3 stipulates that the Convention shall be applicable to civil aircraft only and not to State aircraft. It also indicates that aircraft used in military, customs and police services shall be deemed to be State aircraft. No further elaboration on what constitutes a State aircraft is provided in the Chicago Convention. The guidance material provided in this manual does not change, revise, or further interpret the definition of State aircraft, or apply the Chicago Convention to State aircraft.

4.79 Many States have chosen, in the exercise of their sovereignty, to exempt from airport charges certain types of flights, in addition to those expressly deemed to be State aircraft according to Article 3 of the Chicago Convention. Such exemptions are sometimes implemented by bilateral or multilateral agreements, national legislation, or unwritten practical arrangements.

4.80 As per ICAO's policies on charges in Doc 9082, Section II, paragraph 1, States should analyse air traffic data, such as the number of flights by category of user (i.e. commercial aviation, general aviation, and other) in both domestic and international operations, aircraft weight, and other data relevant to the allocation of costs and the cost-recovery system, along with related financial data. Following such analysis, it can be determined if the volume of exempted flights is such that the method of allocating the airport costs amongst all chargeable flights is inconsistent with the principles of equity and non-cross subsidization. Where such traffic is minimal and incidental, and the costs associated with it are low, a detailed examination of the existing cost allocation methodology would normally not be

warranted. However, if such traffic is substantial, it will be necessary to ensure that the principles of equity and of non-cross subsidization are observed and that the costs are allocated appropriately. Furthermore, airport costs should be identified in such a way as to ensure that when a State chooses to host flights that are exempted from user charges, and the volume of such traffic is substantial, all costs are properly allocated according to sound accounting principles (Section II, paragraph 2 vi) of Doc 9082 refers) and the host State, not other users of the system, bears the costs of the exempted flights. In this respect, current practices in certain States include the reimbursement of costs incurred by service providers through the central State budget, or ministries such as defence, foreign affairs or transport. Such practices, consistent with the principle of proper allocation of costs, ensure that airports avail themselves of revenues to recover the costs of the services that they provide to flights exempted from user charges.

4.81 Special reference should be made to the situation that arises when an airport, operated by civilian authorities for civil traffic, is also used by military or other State traffic. Normally, where such traffic is substantial, the military or the other government agencies involved (such as police or coast guard) have their own terminals, aprons, parking spaces and hangars at the airport. Where that is the case, no costs would be borne by the airport for these facilities (unless the facilities have been built by the airport), nor would it derive any revenues from them. There may, however, be common usage by the State and civil traffic of runways and taxiways, air traffic control (including communications), meteorological services, firefighting and ambulance services, possibly ground access facilities, and security services. In such circumstances, these costs should be allocated in an equitable manner to avoid cross subsidization and the airport should be compensated accordingly, on a cost-recovery basis.

C — ALLOCATION OF COSTS

Allocation of full cost to cost centres and service lines

4.82 Once the total costs by categories of expense (that is operation and maintenance costs, administrative overhead, capital costs and taxes) have been determined, they should, if possible, be allocated to the various airport cost centres and service lines concerned, such as those referred to in the section A of this chapter. Note that all costs (in all categories of expense) should be allocated to both cost centres and service lines.

4.83 As to the allocation of taxes, these could be allocated in the same manner as administrative overheads, except where the tax can be identified with a special cost centre or service line. All costs that are directly attributable to one cost centre or service line are allocated to that cost centre or service line. However, for costs which are attributable to two or more cost centres or service lines, for example, administrative overheads, allocation keys or parameters would need to be developed. Such costs would only be allocated where the amounts involved are considerable.

4.84 The type of allocation key applied to a specific category of expense will depend on its nature. For example, the costs of staff working in more than one cost centre or service line could be allocated according to time spent working in each of the cost centres or service lines involved. Costs of administrative staff could be allocated according to the total work time of staff working in each cost centre or service line. Alternatively, administrative overheads could be allocated on the basis of costs of operation and maintenance of the cost centres or service lines concerned. With regard to cost allocation based on work time, it should be recognized that relevant time-recorded data for staff working in more than one cost centre or service line are in most cases not available. An alternative method of allocating staff costs is to distribute them on a percentage basis, according to the proportion of the costs for each department in relation to the total costs for all the departments concerned. Costs of power, electricity, water, heating or air conditioning could be allocated on the basis of measured or estimated consumption of these services or utilities for each cost centre or service line. Capital costs attributable to investments covering several buildings or areas could be allocated according to volume of space, floor area, and/or movement area within each of the airport cost centres or service lines concerned.

Allocation of costs to categories of airport users

4.85 Provision of facilities and services required for different users may vary among airports. Arriving at an equitable cost basis for charges therefore requires an allocation of costs among users. This includes first determining who the users are. As for airport operations, they can be broadly classified as international civil traffic, domestic civil traffic, and flights exempted from user charges. International and domestic civil traffic can be further subdivided into commercial and general aviation, and all these categories could be divided into VFR/IFR⁴ traffic. However, it may suffice to limit the allocation of costs to the airport facilities and services provided for the three categories referred to above, i.e. international and domestic civil traffic, and exempted flights. In addition to these categories of airport users, there is the other group at the airport to which airport costs are attributable, namely, the various non-aeronautical activities that serve or benefit from the aircraft operations.

Allocation of costs between international and domestic civil traffic

4.86 With a few important exceptions, international and domestic civil traffic normally use or benefit from the provision of the same airport cost centres and service lines. The exceptions relate principally to passenger terminals owned and operated by the airport and, to a lesser extent, to cargo terminals similarly owned and operated, as well as the associated apron or aircraft parking stands. Terminal facilities and services provided for international traffic are relatively more costly than those provided for domestic traffic. The reason is that international traffic requires larger terminal facilities, because of, for example, the additional space needed for immigration and customs clearance and the associated requirement for separate international traffic passageways and waiting areas. Also, larger lounges, gates, and parking stands are usually required since aircraft used on international services tend to be larger than those used on domestic services. Moreover, international traffic normally requires more costly airport security services than domestic traffic.

4.87 Where separate terminals are operated for international and domestic traffic, the air traffic costs of each terminal can be directly allocated to the traffic category concerned. In the case of common use terminals, their costs could, for example, be allocated on the basis of floor area used for international traffic only and for domestic traffic only.

4.88 When passenger terminal cost allocation is undertaken, the whole terminal floor area might first be divided into three categories according to whether it is used for: a) air traffic revenue-generating purposes, that is for processing international and domestic traffic; b) non-aeronautical revenue-generating purposes, such as various concessions and rentals; or c) non-revenue purposes, such as airport office space and utilities.

4.89 Since all terminal costs should be covered by revenues from aeronautical as well as non-aeronautical revenue-generating activities, the floor space used for such activities should form the basis for total terminal cost allocation, including the costs attributable to terminal space used for non-revenue purposes. In fact, this applies in the wider context, since the costs of all revenue as well as non-revenue-generating areas and services need eventually to be allocated to the revenue-generating areas and services (aeronautical as well as non-aeronautical) if the full costs are to be recovered.

4.90 Aircraft apron parking stand costs would be similarly allocated on the basis of square metres or footage used for international aircraft parking as opposed to domestic aircraft parking. The costs of the whole area used for stands and associated equipment as well as roadways should form the basis for the costs to be allocated. Costs of certain security services, such as supervision of boarding gates and security personnel assigned to specific areas, can be directly allocated to either international or domestic traffic, and the costs of the remaining security services could then be divided proportionally on the basis of these two identifiable components.

4. Visual flight rules/instrument flight rules.

D — COST BASIS FOR INDIVIDUAL CHARGES ON AIR TRAFFIC

BASIC ASPECTS

4.91 Once the costs attributable to civil air traffic have been established (see Figure 4-2) and, if required, divided into their international and domestic components, the cost basis for individual charges can be estimated. In this way, each charge is derived from a specific cost basis. It is important to remember that the cost elements included in the cost basis for individual charges on air traffic will vary between airports, depending on the types of charges each airport levies on air traffic and also on the cost structure of each airport. In this context, reference should be made to the text in paragraphs 4.63 and 4.67 on establishing priorities in the determination of costs.

4.92 Considering that circumstances differ between airports, the descriptions given in the following paragraphs of the cost basis for individual charges can only be indicative.

LANDING CHARGES

4.93 This would include the costs of aircraft movement areas (except remote parking stands) and their associated lighting (unless lighting is charged for separately), firefighting and ambulance services, costs of security services attributable to the aircraft movement areas (unless security services are charged for separately), aircraft noise and emissions (unless either or both are charged for separately), and air traffic control (including communications) and meteorological services (unless either or both are charged for separately).

LIGHTING CHARGES

4.94 If not included in the cost basis for landing charges and parking charges, this would include all costs attributable to runway and taxiway (and possibly apron and remote parking areas) lighting.

APPROACH AND AERODROME CONTROL CHARGES

4.95 If not included in the cost basis for landing charges, this includes the costs of air traffic control (including communications) and meteorological services.

AIRCRAFT PARKING CHARGES

4.96 Costs attributable to remote parking areas and their associated lighting, as well as aircraft towing where provided by the airport, and costs of security services attributable to remote parking areas (unless security services are charged for separately).

AEROBRIDGE CHARGES

4.97 If not included in the cost basis for passenger service charges, this includes the costs attributable to the provision and operation of aerobridges.

HANGAR CHARGES

4.98 Costs attributable to hangars owned by the airport, including access roads, and costs of security services attributable to hangars (unless security services are charged for separately).

PASSENGER SERVICE CHARGES

4.99 Costs of passenger terminal facilities that are attributable to passenger processing, including the costs of security services attributable thereto (unless security services are charged for separately), and the costs of ground access facilities and services attributable to passenger terminal access.

CARGO CHARGES

4.100 Costs of cargo terminal facilities, costs of security services attributable to cargo terminals (unless security services are charged for separately), and the costs of ground access facilities and services attributable to cargo terminal access.

SECURITY CHARGES

4.101 All costs attributable to the provision of security services for air traffic. This would include all security measures of a preventive character and performed on a routine basis, i.e. the security measures indicated in Appendix 1 of Doc 9082. Costs of security services attributable to non-aeronautical activities should be included in the cost basis for such activities. The need for cost-effectiveness analysis when contemplating new or enhanced security measures should be emphasized.

4.102 It is important to draw a distinction between the security functions performed directly in relation to civil aviation operations and those that are related to national security in order to ensure that costs of security not directly attributable to civil aviation operations are not passed on to the air transport industry or its customers. Responses to acts of unlawful interference, including attacks and threats (e.g. the use of in-flight security personnel) as well as unannounced airport inspections, quality control measures, and general policing and threat assessment, would normally be considered as national security responsibilities. States may determine in which circumstances and the extent to which the costs involved in providing security facilities and services should be borne by the State, the airport entities or other responsible agencies (as indicated in Doc 9082, Section II, paragraph 7).

NOISE-RELATED CHARGES

4.103 If incurred and not included in the cost basis for landing charges, the costs of noise monitoring and noise abatement measures.

EMISSIONS-RELATED AIRCRAFT CHARGES TO ADDRESS LOCAL AIR QUALITY PROBLEMS AT OR AROUND AIRPORTS

4.104 If incurred and not included in the cost basis for landing charges, the costs of the measures applied to prevent or mitigate environmental impact to local air quality caused by and directly attributable to civil aircraft operations⁵.

OTHER CHARGES

4.105 The cost basis for other charges levied on air traffic by the airport would be determined by using a similar approach — that is, by determining the costs of the facilities and/or services the charge is to cover. For example, if separate towing charges are levied, the costs of that service would be estimated (and deducted from the cost basis for parking charges) to arrive at the cost basis for these charges.

5. See *Guidance on Aircraft Emissions Charges Related to Local Air Quality* (Doc 9884).

PRE-FUNDING CHARGES

4.106 Costs to take into account in the establishment of pre-funding charges are discussed in Appendix 4, paragraphs 12 to 14.

AGGREGATION OF COST BASES FOR SETTING CHARGES

4.107 Paragraph 2 iv) in Section II of ICAO's policies on charges (Doc 9082) gives airport operators more flexibility in setting airport charges by aggregating cost bases and, thereby, applying cost-relatedness at a higher level than as described above. However, this practice may raise concerns with respect to cost-relatedness of the charges, transparency and possible discrimination among users. Therefore, the aggregation of costs should be done in a logical and transparent manner, accompanied by safeguards, as appropriate, regarding consultation and, where possible, agreements with users to avoid discrimination among users in setting charges.

4.108 The range of costs that make up the cost basis for individual charges on air traffic will depend on the number of types of charges that an airport levies; accordingly, the fewer the charges the broader the cost basis will be for each charge. As an example, airport owners/operators could aggregate all relevant air-side costs into a single cost category and then establish a single charge to recover these costs. This would retain the relationship between the charges and the services provided and also be in line with the generally accepted practice that a single charge may be applied for costs of as many airport-provided facilities and services for normal landing and take-off of aircraft as possible (see paragraph 4.147 in Part H below). The cost basis for landing charges may cover the cost of runways and taxiways and their associated lighting, apron parking stands, firefighting and ambulance services, meteorological services, security services, ground access facilities and services, aircraft noise and emissions, and approach/aerodrome control services (if provided by the airport)⁶.

4.109 In certain circumstances, it may be mutually beneficial for the airport operator and the airport user community to develop more aggregated cost bases for the purpose of setting charges. In particular, it may be beneficial to establish a single cost basis (or a reduced number of cost bases) from which individual charges could be derived. Reducing the number of cost bases would reduce the administrative burden on all parties involved. For example, it may be possible to reduce the burden associated with the collection and processing of airport charges. Such cost savings not only benefit the airport operator, but can be passed on to the users in the form of lower charges. The aggregation of cost bases would also give airport operators (in particular small- and medium-sized airports) a tool to support the desired efficiency and development of their airports. Another benefit in situations where users receive a comparable set of services is that by aggregating costs it may allow airport operators to better estimate marginal costs. This is particularly important if an airport operator is attempting to recover costs based on the discussion of economic pricing found in Part G below. Aggregation of costs may also have merit where the single-till is applied and where aeronautical charges in general are being defrayed to a significant extent by non-aeronautical revenues.

4.110 However, the aggregation of cost bases could at the same time significantly reduce transparency between the cost of service and related charges, and possibly lead to cross subsidization of one user group by another user group and to discrimination in the application of charges. Also, without a clear link between charges and airport services, the ability of States to conduct meaningful economic oversight and encourage user consultation may be diminished.

4.111 Paragraph 2 vi) in Section II of Doc 9082 states that the proportion of costs allocable to various categories of users should be determined on an equitable basis, so that no users shall be burdened with costs not properly allocable to them according to sound accounting principles. For consistency with these policies, care should be taken in

6. If separate lighting charges are levied, the costs for lighting of aircraft movement areas would be excluded from the cost basis for landing charges. Also excluded would be the costs of air traffic control and possibly meteorological services in instances where approach and/or aerodrome control charges are levied separately, aircraft noise and emissions charges where levied separately, and the security cost element where separate security charges are levied.

the process of aggregating costs. The aggregation should be done in a logical and transparent manner to ensure that it does not result in cross subsidies between users and discrimination. Such flexibility in charging should therefore be accompanied by appropriate safeguards, for example: the limitation of the application of enlarged cost bases to airports with homogeneous services used by homogeneous users, and consultation and, to the extent possible, agreement with users before any decision is taken on their implementation. The airport owner/operator should retain the ability to disaggregate costs into more granular categories for transparency and consultation purposes, and to allow the State to conduct effective economic oversight of the airport.

E — DETERMINING THE COSTS ATTRIBUTABLE TO CONCESSIONS AND OTHER NON-AERONAUTICAL ACTIVITIES

POLICY ASPECTS

4.112 The policies in Doc 9082 on the development of revenues from non-aeronautical activities differ from those provided regarding the recovery of costs attributable to air traffic, by encouraging the full development of revenues of this kind, with the exception of concessions directly associated with the operation of air transport services such as fuel, in-flight catering and ground handling (Doc 9082, Section II, paragraph 10 refers).

DETERMINING THE COST BASIS FOR INDIVIDUAL NON-AERONAUTICAL ACTIVITIES

4.113 It was noted in Part B that the approach in determining the cost basis for charges on air traffic also applies to determining the costs attributable to non-aeronautical activities, since both are derived from the same estimated cost totals by airport cost centres and service lines. It was also noted that the costs of all revenue as well as non-revenue-generating cost centres and service lines need eventually to be allocated to the revenue-generating cost centres and service lines (air traffic and non-aeronautical) if full cost recovery is to be effected. At most airports, parts of the costs of passenger terminals and related security services and ground access facilities and services tend to account for the major portion of costs attributable to non-aeronautical activities. Costs of other airport cost centres or service lines attributable to non-aeronautical activities would, with a few exceptions (such as cargo terminals, free zones or industrial parks), normally be considerably lower.

4.114 In arriving at the cost basis for individual non-aeronautical activities, it is necessary first to determine how much of the airport's revenue-generating space each activity is occupying. For example, in the case of shops, restaurants and other trading activities as well as rental space, this would be the floor space in square metres or footage, and where land is involved, the size of the area occupied. Unless already included in administrative overheads allocated to the airport cost centre or service line concerned, the costs of services or utilities provided by the airport (such as power, water, heating, air conditioning, telephone switchboard service) need to be distributed on an individual non-aeronautical activity basis using, to the extent possible, separate metres for each activity.

CONCESSIONS DIRECTLY ASSOCIATED WITH THE OPERATION OF AIR TRANSPORT SERVICES

4.115 The policy reference given in paragraph 4.112 noted that the full development of revenues from non-aeronautical activities is encouraged, except for concessions directly associated with the operation of air transport services such as fuel, in-flight catering and ground handling. Consequently, when the airport costs attributable to such activities are being determined, more precision may be required than in the case of other concessionary activities, and they would not necessarily be expected to make significant contributions towards costs not recovered through charges on air traffic or on other non-aeronautical activities. However, they still remain non-aeronautical activities, and insofar as ICAO cost-recovery policies are concerned, they are not subject to the same limitations as is recommended be applied

to charges on air traffic. The following paragraphs refer to the costs that would normally be included in the cost basis for fees and charges on these three types of activities.

COST BASIS FOR FUEL CONCESSIONS

4.116 These would include any maintenance costs, administrative overheads and capital costs attributable to premises, land and equipment owned by the airport and placed at the disposal of the fuel concessionaires (this includes any fuel farms, pipes, hydrants, pumping facilities, etc.). Also included would be costs of firefighting and security services attributable to the storing and tanking of fuel (unless security services are charged for separately), as well as costs attributable to the use by the concessionaires of ground access facilities and services.

COST BASIS FOR IN-FLIGHT CATERING CONCESSIONS

4.117 These refer to any maintenance costs, administrative overheads and capital costs attributable to the provision by the airport of premises, land and equipment for in-flight catering services, including costs of associated security services and ground access facilities and services (unless security services are charged for separately). It should be noted in this context that a concessionaire may not only be operating in-flight catering services, but also airport restaurant and bar facilities, the concession fees for which are not subject to the same qualifications that apply to in-flight catering. However, both functions may share the same facilities, such as kitchen areas. That may, for the purposes of setting the concession fees, require assessments to be made of the relevance, in terms of costs to the airport, of in-flight catering as opposed to the other catering activities of the concessionaire.

COST BASIS FOR GROUND HANDLING

4.118 Ground handling is a special activity in that while it is performed by airlines or concessionaires at the majority of airports, a considerable number of airports themselves perform either the entire handling function or a part of it. In the first instance, the costs to the airport would be limited to the maintenance costs, administrative overheads and capital costs attributable to premises made available to the concessionaires, including costs of security services and ground access facilities and services (unless security services are charged for separately). However, when the airport itself provides ground handling completely or in part, the cost basis would be much broader and include costs of operation and maintenance, administrative overheads and capital costs attributable to personnel, vehicles, equipment and premises engaged in or used for providing ground handling. Because they serve different, although closely related, purposes the two cost bases should normally be separately identified.

F — METHODS FOR ATTRIBUTING NON-AERONAUTICAL REVENUES TO AN AIRPORT'S COST BASE

4.119 The basic principles to determine the cost basis for airport charges are set out in Section II, paragraph 2 of Doc 9082. The cost to be allocated is the full cost of providing the airport and its essential ancillary services. This includes appropriate amounts for cost of capital and depreciation of assets, as well as the cost of maintenance and operation, and management and administration expenses. Consistent with the form of economic oversight adopted, these costs may be offset by non-aeronautical revenues (i.e. by the application of the single-till or the hybrid-till – see paragraph 4.121). Airports may produce sufficient revenues to exceed all direct and indirect operating costs (including general administration, etc.) and thereby provide for a reasonable return on assets at a sufficient level to secure efficient financing in capital markets for the purpose of investing in new or expanded infrastructure and, where relevant, to remunerate adequately holders of airport equity.

4.120 How the full costs shall be allocated depends on a number of airport-specific factors. In determining how the costs are to be allocated and which costs should be recovered on the basis of air traffic versus non-aeronautical

activity, the airport must balance a wide variety of interests, including the access of the local community to domestic and international air service options, as well as considering the needs of travellers, shippers, aircraft operators, other aeronautical users, companies that do business on or with the airport, and airport neighbours. Guidance on how one may interpret paragraphs 2 i) and 2 viii) in Section II of Doc 9082 with respect to the treatment of non-aeronautical revenues to offset airport aeronautical costs is presented in Table 4-6.

4.121 In general, three approaches are used to describe how an airport recovers the full cost associated with the airport and its essential non-aeronautical services. These approaches are commonly referred to as: a) the single-till (sometimes referred to as the “residual” method); b) dual-till (sometimes referred to as the “compensatory” method); and c) hybrid-till.

- a) Under the single-till approach, the full cost associated with an airport and its essential ancillary services, including appropriate amounts for cost of capital and depreciation of assets, as well as the cost of maintenance and operation, and management and administration expenses, are included in the cost basis attributed to air traffic. These costs are then adjusted to reflect non-aeronautical revenues that accrue to the airport. In general, in exchange for sharing the risk associated with the airport’s operations, aircraft operators and/or end-users benefit from a cost basis that is adjusted to reflect non-aeronautical revenues.
- b) Under the dual-till approach, the full costs associated with the airport and its essential ancillary services are allocated between the airport owner/operator and the airport users. The costs allocated to air traffic include only those costs associated with the facilities that are actually used by the aircraft operators and the end-users. No adjustment is made to this cost basis to reflect non-aeronautical revenues accruing to the airport. The airport owner/operator is free to direct the use of any revenues generated from its concessions, parking facilities, and any other non-aeronautical activities for use at the airport, as it deems necessary and appropriate.
- c) Under the hybrid-till approach, the cost basis is established based on a combination of the single-till and the dual-till approaches. For example, the airport owner/operator may choose to recover landing costs on the basis of the single-till approach while establishing terminal costs on the basis of the dual-till approach.

4.122 While the choice of cost recovery methodology will greatly influence the degree to which the airport owner/operator and the aircraft operators serving the airport bear the financial risk associated with the airport’s operation, other factors can also influence risk-sharing. Perhaps just as important as the choice of cost recovery methodology are the details associated with its application. Factors such as existing contractual arrangements between the airport and the aircraft operators, and institutional arrangements particular to the airport can all influence the degree to which each party shares the financial risk associated with the operation of the airport.

4.123 Regardless of how the cost basis for charges is established, it is incumbent on the State to ensure that it is done in a transparent manner, involving user consultation, which clearly describes which costs are included and to what extent non-aeronautical revenues are being used to offset aeronautical costs.

Table 4-6. Interpretation of paragraphs 2 i) and 2 viii) in Section II of ICAO's Policies on Charges for Airports and Air Navigation Services (Doc 9082)

The following guidance may be used when applying the above principles:

- 1) The existence of air traffic activity is a necessary precondition for the generation of airport non-aeronautical revenues. Such revenues are then generated through management initiatives in offering suitable products and prices. All aeronautical and non-aeronautical revenues from the operation of an airport accrue, in the first instance, to the airport. Reaching a common understanding on how non-aeronautical revenues may be used to defray the cost base for aeronautical charges is an acknowledgement of the partnership between airports and users.
- 2) The non-aeronautical revenues in question do not normally include revenues earned by the airport from activities undertaken off-airport or those undertaken by the airport in full competition with other suppliers.
- 3) Given the different local circumstances and changing conditions with respect to airport ownership and management, as well as regulatory regimes, there are likely to be a range of different appropriate treatments of non-aeronautical revenues by airports.
- 4) When determining how non-aeronautical revenues may be used, high priority should be given to the investment needs of airports, taking into account paragraph 23 in Section II of Doc 9082, which addresses pre-funding of projects, while recognizing that there may be many alternatives to finance infrastructure development.
- 5) The appropriate return on aeronautical activities should reflect differences in the level of risk from non-aeronautical activities. Furthermore, in order to provide incentives to the airport operator, high levels of service and efficiency in aeronautical activities may be rewarded with higher returns and vice versa.
- 6) When defining how non-aeronautical revenues may be used to defray the cost base for charges, an accounting system should be in place to identify the relationship between costs and revenues of aeronautical and non-aeronautical activities.
- 7) As stated in point 4, it may be appropriate for airports to retain non-aeronautical revenues rather than use such revenues to defray charges. However, there is no requirement for airports to do so and, in appropriate circumstances, there may be solid grounds for charges to be lower, consistent with Doc 9082, Section II, paragraph 2 ix).
- 8) None of the foregoing should be interpreted as encouragement to airports to exploit unreasonably their market position relative to users.

G — SETTING CHARGES ON AIR TRAFFIC OPERATIONS

BASIC FACTORS

4.124 The aim of levying airport charges is to seek to recover over time the costs incurred by the airport operator in providing facilities and services required for handling air traffic, after making allowance, where appropriate, for other sources of revenue and recognizing short-term pricing fluctuations that will impact the balance between supply and demand.

4.125 The principle is to charge users for the facilities and services that are directly related to their use of the airport or the airport system. The airport operator should avoid cross subsidizing different user categories, as such cross subsidization may not only result in discriminatory treatment of users, resulting in service pattern distortions, but can also result in an economically inefficient use of the airport.

4.126 As airport charges are updated at most annually, cost-based pricing may, at times, result in periods of over- or under-recovery. In certain circumstances, States may wish to recover less than the full cost associated with providing airport facilities and services. In recognition of local, regional or national benefits received, States may encourage the greater use of an airport by subsidizing users from non-aeronautical airport profits or from other sources of funds, such as national treasuries. In such cases, it is important to ensure that such subsidization does not unintentionally provide an unfair competitive advantage to any particular user or user group at the airport.

ECONOMIC PRICING

Objectives

4.127 Traditionally, charges on air traffic operations have been set on the basis of average costs. While administratively simple, this approach does not necessarily recover costs in a way which encourages the most economically efficient provision and use of the airport's facilities and services. An alternative approach to setting charges is based on the principle of economic pricing. Such charges are expected to encourage a more efficient use of the airport's scarce resources by incorporating the users' "willingness-to-pay" within the context of cost recovery while at the same time ensuring that no users will be burdened with costs that are not properly allocable to them according to sound accounting principles. Similarly, in situations where there are large fixed and/or joint costs, economic pricing can be used to ensure efficient cost recovery. In each case, the application of economic pricing serves two purposes: a) it provides a mechanism to allocate resources efficiently; and b) it provides market signals, indicating where investment would yield the greatest benefit to the users of the airport.

Application of economic pricing for cost recovery

4.128 The application of economic pricing should be consistent with paragraph 3 iii) in Section II of Doc 9082, which states that "charges should be determined on the basis of sound accounting principles and may reflect economic principles as required, provided that these are in conformity with Article 15 of the *Convention on International Civil Aviation* and other principles in the present policies". Essentially, applying economic pricing in setting airport charges refers to the concept of marginal (or incremental) cost. The marginal cost approach differs from the more traditional regulatory accounting-based approach in which charges are set on the basis of average costs. Assuming that the airport operator can adequately measure its marginal cost and has a sense of user demand, setting charges equal to marginal cost will produce a more economically efficient outcome than setting charges equal to average costs.

4.129 However, the challenge faced by many airport operators is that their production process is characterized by "economies of scale" — average costs decline as output increases. Setting charges equal to marginal cost would result in under-recovery. This requires airport operators to subsidize these facilities and services from other revenue sources or to adopt some form of non-linear pricing in which charges are modulated⁷ while ensuring that an adequate revenue stream is maintained. Examples of charging techniques include the use of Ramsey pricing, two-part tariffs (involving a fixed charge and a variable charge related to marginal costs), and peak-period pricing, all subject to the constraint of full cost recovery. With respect to peak-period pricing, in which there are significant variations in the level of service by time of day, charges could be established on the basis of short- and long-run marginal costs. To ensure consistency with ICAO's policies on charges, airport operators should make certain that users engaged in similar types of operations are treated equally. To implement this particular form of economic pricing, airport operators need to identify peak and off-peak users, the costs of serving peak and off-peak users, and how users' behaviour changes once the pricing scheme has been implemented.

4.130 Other instruments that may be used in the context of economic pricing are incentives. These are instruments that incite a particular course of action. They may take the form of a financial reward (or penalty) or a

7. According to time and/or situation of use of the facility or service concerned.

change in operational efficiency. An airport could use an incentive through its charging scheme to encourage users to act in ways that will lead to the desired outcome.

4.131 Regardless of the types of incentives, as a premise, States should ensure that, where airports introduce incentives for users, the incentive schemes meet the principles set out in Doc 9082. Incentive schemes should be transparent and subject to periodic reviews (for example, to assess whether the incentives meet the stated objectives), and the estimated benefits such as savings generated by operational efficiency should offset, at a minimum, the cost imposed on the users.

4.132 One type of incentive would affect users' decisions on fleet renewal or on the selection of types of aircraft used, in function, for example, of their environmental performance. Experience has shown that the application of local air quality (LAQ) charges at certain airports may have an influence on the type of aircraft operated at these airports.

4.133 Another type of incentive may be applied to the airport by an independent regulator to encourage improvements in service quality. Such incentives should be based on achieving standards of quality for which aircraft operators and/or end-users would be prepared to pay.

Congestion management

4.134 Economic pricing can also be applied to yield benefit in cases where the airport is congested. Congestion charges are designed to address the situation where an airport user imposes a delay or other type of congestion cost on another user, greater than the cost they themselves experience. This type of modulated pricing approach might be applicable in cases where capacity is constrained and certain flights impose a disproportionate cost on the airport capacity. To implement this pricing approach, the airport operator needs to first determine whether one user is imposing a cost on another user. Second, these costs must be identified. Third, a charging system must be established to internalize these externalities. If the congestion charge is properly structured, users should not be burdened with costs that are not entirely attributed to their own business practices. The practical difficulty with this approach is that it becomes extremely complex to effectively measure the externality. Furthermore, given the fact that congestion costs are not directly associated with the cost of airport services and facilities, it is difficult to reconcile this pricing practice with the principle of cost recovery. Consequently, the use of congestion pricing should be done with great care, and revenue derived from such charges should be reinvested in the airport or airport system in order to expand capacity to better address the congestion problem.

4.135 A type of incentive for users that could be used in relation with terminal congestion would be one that affects their tactical or operational decision at the level of each flight in terms of timing. Although tactical decisions are often made without consideration of such incentive, it is conceivable that, for example, at a congested airport, some users would be willing to re-time flights in exchange for preferred sequencing during approach or preferred access to the taxi queue during arrival or departure.

4.136 Similarly, as presented in paragraph 4.134 above, a type of incentive would target the demand for airport access by affecting users' decisions regarding their services, for example with respect to scheduling or the capacity of aircraft used. Airport charges could be modulated in such a way that higher charges would apply during peak-periods when demand for the airport's limited capacity is greatest, and lower charges would apply during off-peak hours of service.

Differential charges

4.137 In other circumstances, the airport operator may wish to set charges based on other objectives. For instance, the airport operator may want to modify its airport charges to include a differential component. This differential component refers to any preferential charges or other reductions in the charges normally payable for the use of airport facilities and services. Such charges are designed to elicit specific changes in user behaviour for purposes other than

using pricing to recover economic costs. For instance, if an airport operator were seeking to expand service at the airport or to encourage the use of certain technology to improve efficiency of the airport, the airport operator could use introductory discounts or other incentive schemes to achieve these goals.

4.138 Given the nature of the differential charges, their application should be closely monitored. There are a number of potential adverse effects that need to be considered. For example, when airports have a great degree of market power, the differentiation of charges might be part of a strategy to prevent certain providers of airport services to enter the market. When airports are owned and operated by public authorities (which do not act as a private investor would in a market) or receive subsidies from States, offering lower airport charges for specific users may constitute a form of State aid for those users. The subsidization of the airport by the State could distort competition between airports and indirectly benefit specific users, for example, through lower airport charges, and thereby distort competition between users.

4.139 In light of the potential adverse effects associated with differential charges, when performing their economic oversight function, States should, where necessary, assess the positive and negative effects associated with such differentials charges on a case-by-case basis according to national circumstances. ICAO's policies on charges (Doc 9082, Section II, paragraphs 3 iv) and 3 v)) describe four high-level principles for safeguarding users against potential negative effects of differential charges:

- a) *non-discrimination*: this principle has its roots in Article 15 of the Chicago Convention. Doc 9082, Section II, paragraph 3 iv) states that charges must be non-discriminatory both between foreign and domestic users, as well as between two or more foreign users. In practice, this could be interpreted as "all categories of users meeting the same criteria and offering the same or similar air services should be treated equally";
- b) *transparency*: airport operators should publish the existence of differential charges together with the purpose and the criteria on which they are offered. Also, where State aid is used to differentiate airport charges (and/or maintain charges at an artificially lower level), States should take transparent and effective measures accompanied by clear criteria and methodology to ensure that aids/subsidies do not adversely affect competition in the marketplace. This principle does not mean that airports should have to disclose any commercially sensitive information to the public;
- c) *no cross subsidization*: where any differential charges are extended to particular categories of users, without prejudice to modulated charging schemes, costs associated with such differential charges should not be allocated, either directly or indirectly, to those other users not benefiting from them. This means that revenue shortfalls resulting from the introduction of preferential charges for specific user categories should not be shouldered on to other users; and
- d) *time-limitation*: this principle relates to the amount of time that an airport may provide particular categories of users with start-up aids and similar incentive schemes to attract and/or retain new air services. Since the air services receiving preferential treatment are ultimately expected to become profitable (except for essential air services of a public or social service nature that a State may consider needs to be provided and where the market may not have sufficient incentive to do so, for example, lifeline air services for remote or peripheral destinations), start-up aids and similar incentive schemes should be offered on a temporary basis only.

Regarding the applicability of safeguards in the context of modulated and/or differential charges, the principles of non-discrimination, transparency and non-cross subsidization should be applied to all types of charges, while time-limitation should be applied to differential charges only.

H — INDIVIDUAL CHARGES

4.140 Part B above contains guidance on the approach to determining the cost basis for charges on air traffic. In that context, apart from costs incurred by the airport itself with regard to functions it is directly responsible for, adjustments in the form of transfers of costs to and from the airport may have to be made because of services provided to the airport by other government departments or entities, or provided to them by the airport.

4.141 As in the case of costs, one or more elements of the revenues the airport collects through its charges might be attributable to another government department or function. This applies, for example, if the landing charges include an element attributable to en-route services provided by another department. This would require the transfer of the revenue element involved, once it has been collected, from the airport to the department concerned. The reverse would apply if, for example, en-route air navigation charges levied by a government department other than the airport also contained an element for approach and aerodrome control, the costs of which were charged to the airport. In that case, the revenue element concerned should be allocated to the airport to offset the corresponding costs charged to it, which would reduce the costs that form the basis for the charges levied by the airport on air traffic.

4.142 A principal objective when establishing charges is usually to determine what charges should be levied on traffic in the immediate future, normally the next financial year. This requires an estimate to be made of the cost basis for individual charges for the next year which would be arrived at on the basis of costs of the most recent financial year.

4.143 Similarly, in order to set charges at a level that permits predetermined cost-recovery and revenue objectives to be met, traffic for the next year would need to be forecast. This would involve estimating the total number of aircraft movements, broken down by maximum take-off weight and, possibly, by the time of arrival, total numbers of arriving and departing international and domestic passengers, total arriving and departing cargo, the duration of stay of aircraft by size in parking areas, etc. Sometimes longer term forecasts may be required to project trends in revenues from airport charges in the future as necessary components to be incorporated into the budgeting process described in Chapter 3, Part A. For all these purposes, reference is made to the guidance on medium- and long-term air traffic forecasting contained in the ICAO *Manual on Air Traffic Forecasting* (Doc 8991). In developing their traffic forecasts, airports should consult with users or their representative organizations. As to arriving at unit costs for individual charges, the approach would normally be for the cost basis for the charge concerned to be divided by, for example, accumulated aircraft weight or number of passengers (the divisor applied depending on what the charge concerned was based, i.e. aircraft weight or number of passengers).

LANDING CHARGES

4.144 ICAO's policies on charges (Doc 9082, Section II, paragraph 4 i)) recommend that "Landing charges should be based on the aircraft weight formula. The maximum certificated take-off weight as indicated in the certificate of airworthiness (or other prescribed document) should be used, while considering local restrictions that may affect aircraft maximum take-off weight". This is the practice followed by States with very few exceptions, since it has been found to be particularly useful and an accepted parameter to reflect how wear and tear and use of airport-provided facilities tend to increase as the weight of aircraft increases. It should be noted that while the charges are called landing charges they are based on maximum permissible take-off weight. The rate is determined by dividing the estimated cost basis for landing charges for the coming year by the accumulated maximum permissible take-off weight of the aircraft that are estimated to take-off from the airport in that year. Separate divisions could be made for international traffic and domestic traffic, if the costs so warrant.

4.145 The rate, usually per tonne, is an average figure only. However, it is common for it not to remain constant throughout the weight scale, but to increase at two or more weight levels. The degree of increase and the number of weight levels depend on such factors as aircraft mix and, of course, the cost recovery policy being pursued. The extent of the increase in the charging rate serves to distribute more fairly the additional costs of the expanded runway, taxiway and apron facilities required by larger aircraft. However, certain airports now charge larger aircraft on a straight linear scale or even assess them with declining unit rates once a certain weight level has been reached. This could be

beneficial for an airport where the capital costs attributable to larger aircraft have been recovered and present runway capacity is becoming limited, if it encourages air carriers to move more traffic by using larger aircraft, thus allowing postponement of costly investments in new runways. Allowance should be made for the use of a fixed charge per aircraft or a combination of a fixed charge with a weight-related element, in certain circumstances, such as at congested airports and during peak periods.

4.146 Where the charge increases according to aircraft weight, it is suggested that the tariffs be structured in such a manner that it is only necessary to multiply the maximum weight of the aircraft by the rate applicable (per tonne) within the weight range in which the aircraft falls. An alternative approach is to multiply each portion of the aircraft's weight that falls into different weight intervals by the rate applicable to the weight interval concerned, and then add these multiples together to arrive at the landing charge payable. However, the latter approach is more time-consuming and would increase the likelihood of miscalculations.

4.147 It was noted in Part D above that the cost basis for landing charges would depend on, among other things, the range of airport facilities and services covered by the cost basis. A single charge should be applied for costs of as many as possible of airport-provided facilities and services for normal landing and take-off of aircraft (generally excluding hangars and certain terminal building and other facilities, as these are normally handled by leases or other commercial practices). Also relevant in this context is that the ordinary landing charge should cover the use of lights and special radio aids for landing where these are required, since it is in the interest of safety that the imposition of separate charges for these aids should not discourage aircraft operators from using them. If separate charges are made for facilities of this kind, they should not be levied on the basis of optional use but should be uniformly imposed on all landings occurring during periods established by the airport operators. This is relevant, for example, in the context of lighting charges because no gross inequity would normally result if an airport includes the costs of lighting in the cost basis for landing charges, as is the practice in a large number of States. This also simplifies the charging mechanism. Also to note is that at airports where restrictions on aircraft payload are imposed by physical limitations, consideration should be given locally to adjusting the landing charge indicated by the weight scale in cases where the restrictions are of a severe and long-lasting nature.

4.148 With traffic congestion becoming more prevalent, efforts have been made to even the flow of airport traffic by levying higher landing charges (and passenger- and aircraft parking-related charges) during peak-hours, high fixed charges per aircraft movement during peak-hours, or relatively high minimum landing charges. The effectiveness of peak pricing in redistributing traffic is, however, limited by the fact that very large differentials are needed for airlines to accept the commercial and operating disadvantages of off-peak arrivals or departures. Alternatively, peak charges have permitted recovery of airport costs attributable to traffic peaking. Where general aviation movements account for a relatively high share of total movements, a different and successful approach to regulating traffic has been to set minimum landing charges at such a level as to encourage the operators concerned to use other airports. However, charging structures to regulate traffic should be chosen in accordance with the Chicago Convention and the principles contained in Doc 9082, in particular paragraphs 3 i) and 3 iii) of Section II. A successful approach for regulating airport traffic is that of scheduled coordination between the aircraft operators and airport management and, where required, with State authorities.

LIGHTING CHARGES

4.149 It is desirable to include in the landing charge the costs of lighting required for aircraft movements, for safety reasons. However, where separate lighting charges are levied, the approach used could be the same as that for determining landing charges. This involves dividing the estimated cost basis for lighting charges for the coming year by the accumulated maximum permissible take-off weight of the aircraft estimated to take off and land, when lighting is on, in that year. Alternatively, these charges could be levied on a per movement basis.

APPROACH AND AERODROME CONTROL CHARGES

4.150 Policies on the establishment of these charges are provided in Doc 9082, Section II, paragraph 4 ii), which notes that “Where charges for approach and aerodrome control are levied as part of the landing charge or separately, they should be consistent with policies on charges for air navigation services”. Further, Section III, paragraph 7, notes that “Where charges for approach and aerodrome control are levied, whether as part of the landing charge or separately, the charge should, so far as possible, be a single element of the landing charge or a single charge per flight and could take aircraft weight into account but less than in direct proportion”.

4.151 The reason for this is that unlike, for example, costs of aircraft movement areas, the costs of providing air traffic control and related services are not significantly affected by aircraft weight. But in order to reflect the value to the aircraft operator of the service received from air traffic control, these charges would normally be based on weight. They would be arrived at in the same manner as landing charges by dividing the estimated cost basis for approach and aerodrome control charges for the coming year by the accumulated maximum permissible take-off weight of the aircraft estimated to take-off from the airport in that year. However, unlike the normal practice with regard to landing charges, approach and aerodrome control charges would increase less than proportionately with aircraft weight.

PARKING CHARGES

4.152 The guidance provided in ICAO's policies on charges on parking and hangar charges is “For the determination of charges associated with use of parking, hangar and long-term storage of aircraft, maximum permissible take-off weight and/or aircraft dimensions (area occupied) and length of stay should be used so far as possible as the basis” (Doc 9082, Section II, paragraph 5 i), refers). The area occupied is usually arrived at by multiplying aircraft length by wingspan (rotorspan in the case of helicopters unless the rotors are folded). However, the large majority of airports base the charge only on aircraft weight and the period the aircraft remains parked. Weekly, monthly or even annual rates are also frequently offered, particularly to small general aviation aircraft.

4.153 It is normal for the landing charge to include a period of free parking time immediately after landing, the length of which varies. This practice is assumed in ICAO's policies on charges, which note that any free parking period should be determined locally by considering aircraft scheduling, space availability and other pertinent factors (Doc 9082, Section II, paragraph 5 ii) refers). Consequently, costs of terminal apron parking stands would be included in the cost basis for landing charges, although in some instances, separate apron and remote parking areas charges are levied (see also paragraph 4.154). The parking charges could be determined by first estimating the number of aircraft-tonnes (maximum permissible take-off weight) expected to be parked at the airport in the coming year and which would be subject to parking charges, and the accumulated number of hours of parking involved, to arrive at the total of parked aircraft tonne-hours for that year. The estimated cost basis for parking charges would then be divided by that figure to arrive at a basic rate for the parking charge. Increases in relation to aircraft weight increases, as are normally applied with regard to landing charges, also normally apply to parking charges but the rate levels tend to be fewer. It should be noted, however, that precision along the lines described here in the determination of parking charges may not always be practical in all circumstances, for example, those referred to in the following paragraph.

4.154 Parking charges frequently have a regulating purpose. Thus, in order to promote the rapid loading and unloading of aircraft and thereby make terminal apron parking available to more aircraft, apron parking charges, once they come into effect after the free parking period is over, are not only higher than remote parking areas charges but may escalate more rapidly.

AEROBRIDGE CHARGES

4.155 Aerobridge charges are not levied at many airports, as often the costs of these facilities are included in the cost basis for passenger service charges. The number of passengers using an aerobridge is a good indication of the

wear and tear to which it is subject; therefore, aerobridge charges could be determined by dividing the estimated cost basis for aerobridge charges for the coming year by the total estimated number of departing or arriving passengers for that year. In order to promote the rapid loading and unloading of aircraft, where this is required, the charges could be modified so that, in addition to the number of passengers, charges would also be based on the period the aerobridge is used, and measured, for example, in periods of one, two, three or more hours.

HANGAR CHARGES

4.156 Hangar charges are determined in the same manner as parking charges, that is by dividing the estimated cost basis for hangar charges by the total estimated aircraft tonne-hours of hangar use.

PASSENGER SERVICE CHARGES

4.157 Passenger service charges are usually levied only on, or in relation to, departing passengers, although there are instances where they apply to arriving passengers as well. Two passenger service charges are usually levied, one for international passengers, the other for domestic passengers. The international passenger service charge is determined by dividing the estimated cost basis for international passenger service charges for the coming year by the total estimated number of departing and, if applicable, arriving international passengers for that year. The domestic passenger service charge is determined by applying the same procedure to the estimated cost basis for domestic passenger service charges and the estimated number of domestic passengers. The passenger traffic estimates should, in both instances, exclude passengers not subject to passenger service charges, including, where applicable, passengers in direct transit.

CARGO CHARGES

4.158 Cargo charges are not levied at many airports, but they would be determined in the same manner as passenger service charges, that is by dividing the estimated cost basis for cargo charges by the total estimated tonnage of cargo loaded and unloaded at the airport. Separate international and domestic cargo charges could be levied if separate cost bases for each are developed, and if the difference in costs in relation to the volumes of international as opposed to domestic cargo justifies such separation.

SECURITY CHARGES

4.159 The establishment of security charges requires special attention. In this context, reference is made to Doc 9082, Section II, paragraph 7, in particular to the principle stated in paragraph 7 iii) that security charges should be designed to recover no more than the relevant costs involved. The "relevant" costs can include assets directly related to the provision of the security service concerned. Where these assets are not wholly funded by debt finance, they may earn a return provided it reflects the lower risk attached to the recovery of costs incurred as a result of meeting a regulatory requirement. Such a return may be less than the return implied by ICAO's policies on charges in Section II, paragraph 2 viii) of Doc 9082 but cannot exceed it.

4.160 With regard to the charging method used, it is recommended that in so far as air traffic is concerned, the charges be based either on the number of passengers or on aircraft weight, or a combination of both factors, and that they may be levied either as additions to other existing charges or in the form of separate charges (Doc 9082, Section II, paragraphs 7 vi) and 7 vii), refer). The majority of airports that pursue recovery of their security costs appears to prefer to do so through separate security charges. The application of both passenger-based and aircraft weight-based security charges would normally require separate security cost bases to identify the elements of security costs attributable to passengers (for example, to passenger terminals) and to aircraft (for example, to air traffic movement areas).

4.161 A security charge or charge addition based on numbers of passengers could be determined by dividing the estimated cost basis for security charges for the coming year by the total estimated departing passenger traffic for that year. Although, according to Annex 17 — *Security*, each Contracting State shall ensure that principles governing measures designed to safeguard against acts of unlawful interference with international civil aviation are applied to domestic operations to the extent practicable, security for international traffic can be different from that for domestic traffic. Consequently, separate charges could be established for international and domestic passengers, provided the cost basis can be so divided. If the charge is based on aircraft weight, a parallel procedure would apply with the estimated cost basis for security charges for the coming year being divided by the accumulated maximum permissible take-off weight of the aircraft estimated to take-off from the airport in that year, again with a separation being made, when applicable, between international and domestic traffic.

NOISE-RELATED CHARGES

4.162 To date, noise-related charges are not levied at many airports. As to the circumstances in which they would be applied, Doc 9082 recommends in Section II, paragraph 8 i) that “Noise-related charges should be levied only at airports experiencing noise problems and should be designed to recover no more than the costs applied to their alleviation or prevention”. Thus, as was noted above with regard to security charges, noise-related charges should not produce profits for the airport.

4.163 As to the charging system, Doc 9082 recommends in Section II, paragraph 8 ii) that any noise-related charges should be associated with the landing fee, possibly by means of surcharges or rebates, and should take into account the noise certification provisions of Annex 16 — *Environmental Protection* in respect of aircraft noise levels. No specific noise-related charging or rebating method is recommended, but the effective perceived noise level (EPNL) of the aircraft concerned could be used as a charging or rebating parameter. The sophistication or complexity in the design of the scale would vary according to local circumstances and requirements. The scale could be linear or in steps. For ease of application, it could be supplemented with a list indicating the charge or rebate that would apply to the different aircraft types known to be operating into the airport that would be subject to the noise-related charges or rebates.

EMISSIONS-RELATED AIRCRAFT CHARGES TO ADDRESS LOCAL AIR QUALITY PROBLEMS AT OR AROUND AIRPORTS

4.164 Emissions-related aircraft charges to address local air quality (LAQ) problems at or around airports are, to date, levied at very few airports. As to the circumstances in which they would be applied, Doc 9082 recommends in Section II, paragraph 9 i) that “LAQ emissions-related charges should be levied only at airports with a defined local air quality problem, either existing or projected, and should be designed to recover no more than the costs of measures applied to the mitigation or prevention of the damage caused by the aircraft”. Thus, as was noted above with regard to security and noise-related charges, LAQ emissions-related charges should not produce profits for the airport.

4.165 Doc 9082 enumerates a certain number of conditions for the design and implementation of such a charging scheme. Further details on this subject are presented in *Guidance on Aircraft Emissions Charges Related to Local Air Quality* (Doc 9884).

OTHER CHARGES

4.166 Other types of charges on air traffic would normally be arrived at by dividing the estimated cost basis for the facility or service concerned by estimates of the readily available parameter that best reflects the use of the facility or service being charged for.

PRE-FUNDING CHARGES

4.167 Specific charges for pre-funding of projects are discussed in Appendix 4, paragraphs 12-14.

I — COLLECTION OF CHARGES

CHARGES LEVIED ON AIRCRAFT OPERATORS

4.168 Following the calculation of the various individual charges on air traffic, invoices must be prepared and issued in accordance with the terms and conditions of use of the airport, and payment collected from the operators concerned. Invoices will usually be presented for subsequent payment but, in some situations, the airport may prefer to collect the charge directly after landing or prior to take-off of the flights concerned. Both approaches may be used by a State depending on the types of operators involved. Where many flights by regular operators are involved, it would usually be more practical and economical to invoice operators periodically than to send a separate invoice for each flight. Most airports usually invoice operators at least once each calendar month. As to invoicing immediately after landing or prior to take-off, its main advantage is the prompt receipt of the amounts involved, which may be particularly relevant in the case of occasional or one-time users from whom collection might otherwise be difficult. Apart from such users, however, this approach is not generally applied or recommended, as it can involve more elaborate administrative arrangements to ensure the proper receipt and recording of payments.

4.169 Regardless of the approach, invoicing should be carried out as soon as feasible after the time the flight(s) involved took place, not only to accelerate the flow of revenues to the airport, but also to facilitate verification by the aircraft operators of the flight(s) involved and the facilities or services used and charged for. Very late invoicing by the airport (for example, many months after the flight took place) could delay payment because the operator may experience difficulties in such verification so long after the event.

4.170 The invoice must provide the aircraft operator with the information necessary for verification and payment purposes, for example, the type of charge(s) and amount(s) due, the flight(s) involved, and the date by which payment is required (which should be reasonably close to the invoicing date to avoid undue delays in the receipt of revenues). Terms of payment should also be indicated and where payment should be sent (for example, the airport itself or a bank, in which case the address(es) and account references should be included). If necessary, the invoice may also indicate that failure to make payment by the due date would lead to an interest penalty being charged, at the discretion of the charging authority.

COLLECTION OF PASSENGER SERVICE CHARGES

4.171 The collection of passenger service charges may require special considerations. Doc 9082 recognizes that revenues from these charges are essential to the economy of a significant number of airports. As indicated in Section II, paragraph 6 of Doc 9082, "Efficiency of collecting airport charges levied on passengers should be considered to avoid queues and delays at airports. It is recommended that where the collection of a passenger service charge directly from passengers at an airport gives rise to such facilitation problems, these charges should be levied through the aircraft operators where practicable".

4.172 Having experienced such difficulties or seeking to prevent their occurrence, a growing number of airports have elected to levy the passenger service charges as a separate element (so identified), which is added to the landing charge and thus payable by the aircraft operator. This method has eliminated facilitation problems that have arisen as a result of passenger service charges being collected directly from the passengers. It has also reduced the costs of collection to airports and improved control and audit of the revenues due from these charges. However, direct collection from the passengers of the charge enables the airport to immediately receive the amounts collected. The charge could

be collected either by the airline(s) on behalf of the airport (i.e., at check-in) or by the airport itself. Considering the different situations that exist, the approach used in collecting the passenger service charges will depend on the circumstances involved.

COLLECTION OF PRE-FUNDING CHARGES

4.173 Specific aspects of the collection of pre-funding charges are discussed in Appendix 4, paragraph 17.

COLLECTION OF TAXES BY THE AIRPORT AS AN AGENT OF THE GOVERNMENT

4.174 In some instances, airports may be responsible for collecting taxes, for example, a value added tax on airport charges or a departure tax levied by the government for general or specific revenue purposes or other purposes unrelated to airport operations. In such instances, the airport acts solely as an agent of the government. The taxes collected should be recorded and held separate from airport revenues even when they are collected at the same time as airport charges (for example, when a departure tax is collected at the same time as an airport passenger service charge). As the taxes are collected they should be transferred directly to a specified treasury or other government account. However, if the airport needs to transfer the taxes collected only at certain intervals, such as once a month, it could place the taxes collected prior to the date of transfer in an interest-bearing account in its own name.

COLLECTION PROBLEMS

4.175 Problems may be encountered in the collection of charges on air traffic. In dealing with such problems, the extent and costs of any collection efforts should be commensurate with the amount involved. The extent of the difficulties encountered in collecting outstanding amounts will vary depending on whether the parties concerned are located in the State where the airport imposing the charge is located, in which case, collection may be easier because of the greater accessibility of the debtor. In extreme cases, preventing aircraft from taking-off, or seizure of aircraft or other assets of the debtor may be necessary. Where an airport experiences frequent delinquencies in payment, a contract could be signed with a collection agency. Where the aircraft operator concerned is not located in the State of the airport, it may, in some situations, as indicated in paragraph 4.168, be advantageous to demand payment before the aircraft departs. An alternative is for an aircraft operator who uses the airport frequently, but who is not located in the State, to appoint an agent in the State who would undertake to pay the charges due. The airport should make its acceptance of such an arrangement contingent upon the agent having proper authorization from the aircraft operator and being capable of making the payments concerned. More generally, and where circumstances so warrant, consideration could be given to all aircraft operators being requested to make advance deposits or other suitable guarantees or deposits as security to ensure that the charges due are paid. The failure of any user to pay airport charges must not lead to an increase in the charges levied on other users.

Chapter 5

DEVELOPMENT AND MANAGEMENT OF NON-AERONAUTICAL ACTIVITIES

This chapter focuses on the development and management of non-aeronautical activities.

Part A discusses ICAO's policies on the development of non-aeronautical activities at airports, and the relevance of the organizational structure under which the airport operates, together with the significance of traffic volume for the development of such activities.

Part B refers to various types of concessions and rentals, airport-operated non-aeronautical activities, and free zones.

Part C addresses managerial aspects including the planning and selection of non-aeronautical activities, internal administrative arrangements, and promotional aspects.

Part D deals with determining the market value of non-aeronautical activities, setting concession fees, with separate reference to concessions directly associated with the operation of air transport services, setting rental charges, and the use and contents of tenders.

Part E focuses on contract stipulations and provisions for concessions and leases for premises, land and construction sites, length of contract periods, management contracts, and contracts related to free zone enterprises.

A — BASIC FACTORS

ICAO'S POLICIES ON CHARGES

5.1 ICAO's policies on charges recognize the continuing importance of revenues from non-aeronautical activities and recommend the full development of such revenues except in the case of concessions directly associated with the operation of air transport services such as fuel, in-flight catering and ground handling (Doc 9082, Section II, paragraph 10 refers). It should be noted that revenues from non-aeronautical activities are in fact the principal means by which airports that apply the single-till or the hybrid-till are able to recover their total costs, because their profits from these non-aeronautical activities more than cover the shortfalls that they incur on their airside operations. A delicate balance has to be found, taking into account, inter alia, the fact that the development of non-aeronautical revenues should not in any way compromise safety or security on airport land and premises, and that the primary role of an airport is to facilitate air traffic.

The significance of traffic volume

5.2 While a large number of airports in several regions of the world have actively developed revenues from non-aeronautical activities, in some other regions their development still appears to be below its potential, taking into account such factors as the overall volume of traffic and high share of international traffic. In this context, as airport traffic increases, not only do revenues from non-aeronautical activities tend to increase in absolute terms, but their share of total airport revenues also tends to increase compared to revenues from charges on air traffic. At some airports, however, inadequate terminal space management and lack of terminal space, as well as of financial resources can contribute to low levels of non-aeronautical activities.

Organizational aspects

5.3 Organizational aspects may also hinder the development of non-aeronautical activities. For example, the airport administration may not be able to exercise any control over the granting of concessions or rentals, when this is vested in another entity with revenues either accruing to it or to the national treasury. Under such circumstances, airport administrations may not have the same incentive to develop non-aeronautical activities as they would have if they were directly responsible for the management of these activities and the resulting revenues. It is important that an airport operator has the possibility to manage non-aeronautical activities to maximize the potential of the commercial opportunity presented by the airport location. Experience has shown that a mix of commercial activities needs to be kept under review to ensure that, in a dynamic market situation, airports continue to provide services and products that customers wish to buy.

B — NON-AERONAUTICAL ACTIVITIES — TYPES AND OPERATIONAL RESPONSIBILITIES

TYPES OF CONCESSIONS AND RENTALS

5.4 Non-aeronautical activities occupying airport building space and land are many and varied. They include a wide range of shops and service activities, office and other premises occupied by airlines and governmental agencies, as well as free zones. Airport revenues from non-aeronautical activities chiefly consist of fees for the rights to operate businesses at the airport, rentals of leased land and premises and, to a much lesser extent, receipts from commercial activities operated by the airport itself. Airports may also receive revenues from commercial activities operating off the airport but relying on airport traffic for their customer base.

5.5 Commercially oriented non-aeronautical activities cover a wide range. The most commonly found activities, listed in order of prevalence, are presented in Table 5-1. Most common are aviation fuel suppliers and food and beverage concessions (restaurants, bars, cafeterias, etc.). Also among the more common and significant activities are duty-free shops, banks and foreign exchange facilities, airline catering services, taxi services, car rental agencies and automobile parking. Even the smallest airport terminal buildings usually contain shops or stalls dealing in such items as confectionery, reading material and souvenirs. As airports increase in size, the trend is towards increased diversification and specialization as well as in the size of individual enterprises. The emphasis in merchandise trading is on light and compact items which can be carried as hand baggage and have a relatively high value per unit of weight and volume.

Table 5-1. Concessions most frequently found at international airports

—	Aviation fuel suppliers
—	Food and beverage concessions (restaurants, bars, cafeterias, vending machines, etc.)
—	Various shops (not duty-free)
—	Banks/foreign exchange
—	Airline catering services
—	Taxi services
—	Car rentals
—	Car parking
—	Airport advertising
—	Airport/city transport services (buses, limousines, etc.)
—	Duty-free shops:
	• Liquor and tobacco
	• Perfume and toiletries
	• Watches
	• Optical and electronic equipment
—	Petrol/automobile service stations
—	Hairdressing/barber shop
—	Vending machines not dispensing food and beverages
—	Hotels/motels
—	Freight consolidators/forwarders or agents
—	Souvenir shops

5.6 Duty-free shops exist at most international airports, although sales may be restricted to liquor, tobacco and perfumes at the smaller locations. As traffic increases, duty-free sales tend to expand, often rapidly, to include watches, cameras and optical equipment, radios and other sound-producing equipment, various electronic devices (computers, calculators, games, etc.) and expensive but light designer clothing accessories. Although the emphasis is on high-value portable items, duty-free sales at a number of airports have in recent years expanded to include such bulky merchandise as automobiles and large television and audio sets. Providing high-quality goods and services at competitive prices remains necessary but is no longer sufficient for commercial success. Attention is increasingly being given to airport advertising revenues which have become a major generator of income at many airports. The increased ability to easily transport people within an airport, leaving passengers free to peruse their surroundings, has given rise to more advertising at some airports. Advertising has also been used effectively on aerobridges and in some airport facilities, floors, particularly near revolving doors or in other areas where passenger attention could be reached. Another logical area for advertising is at the baggage claim area, where many passengers have time to dwell. There are of course limits to the amount of advertising an airport can undertake, since it should in no way compromise good airport signage.

5.7 While access to duty-free shops was traditionally limited to departing traffic, in recent years a small but growing number of airports have also successfully operated duty-free shops for arrivals. It is recognized, of course, that establishing duty-free shops for arrivals may in most States require amendments to be made to customs laws and associated regulations. Another development has been the establishment of off-airport duty-free shops where the products sold are collected at the airport at airside by the passengers. Websites created by airports can also facilitate this practice. Many airports maintain sophisticated websites where they provide useful information to passengers and the public. These websites often include real-time flight information, airline timetables, airport maps, and information on ground transport. The websites are also used by many airport operators to inform passengers about airport retail facilities and duty-free shops. Some airports have links that enable passengers to “pre-order” retail or duty-free shop items for pick-up at departure. Airport websites can be useful both from a customer service point of view and as a tool for enhancing non-aeronautical revenues.

5.8 The clustering of time-critical goods-processing facilities around airports is stimulating further expansion of air cargo, air express, less-than-load (LTL) trucking, freight forwarders and their party logistics providers along arteries leading into and out of gateway airports. Major forecasters project cargo volumes to grow more rapidly than passenger traffic over the next twenty years. The express parcel business and other time-sensitive services are expected to have the fastest rates of growth over this period. Airport operators are increasingly looking at cargo operations as an excellent option for using scarce airport capacity, since cargo can be moved at night or at other off-peak times. Airports with ample space sometimes host “cargo villages” where trucking, containerization, warehousing and other cargo activities can be handled on airport property. This represents a considerable source of rental income for the airport operator and also creates jobs.

5.9 Historically, most of the concession trade has been aimed primarily at travellers and their accompanying friends and relations. However, a growing number of airports have been paying increasing attention to the market composed of persons working at the airport and those living in nearby communities, developing for this market such concessions as restaurants, supermarkets and cinemas. Establishments of this kind need not be located in prime space in the major passenger flow areas or in the immediate vicinity of the passenger terminal(s), thus permitting more profitable use of building space and land than might otherwise have been possible.

5.10 Certain concession-type activities are frequently established at an airport, not because of their revenue-generating potential for the airport, but because they provide a service considered essential or highly desirable for passengers and/or persons working at the airport. Such activities may include employee cafeterias, post offices, government tourist information booths, etc.

5.11 With respect to rentals, in addition to the rental of premises for merchandising purposes, office space in terminal buildings, if available, can be leased. The main lessees would normally be airlines and governmental agencies. Rentals of hangars, workshops and warehouses (other than bonded warehouses) by the airport tend to be less common, as they are often owned by other entities although usually constructed on land leased from the airport.

Airport-operated non-aeronautical activities

5.12 Since they sometimes do not possess the expertise and marketing knowledge required, and also in order to limit their financial commitments, some airports prefer to arrange for certain commercial activities to be conducted by outside parties specialized in the businesses concerned while retaining overall control through contractual arrangements. Airports may also wish to consider making the concessionaires or lessees responsible for finishing and furnishing the premises they occupy. This, however, should be done under the control of, and subject to the approval of, the airport and in conformity with airport plans to promote overall harmony and visual balance in interior and exterior layout and appearance.

5.13 In some circumstances, however, it may be more advantageous for an airport to operate certain activities itself, particularly those not requiring specialized knowledge or substantial capital outlays or inventories, such as automobile parking, although more resource-demanding activities, such as the provision of conference facilities and services, have also been introduced. Even without previous direct retailing experience, airports are becoming more knowledgeable about the characteristics of their passenger base through the conduct of sophisticated passenger surveys, which provide useful indications on directions to follow for business development. The results of these surveys permit the careful establishment of retail strategies that are tailored to the needs and income levels of passengers through precise market segmentation.

5.14 A related situation, which is discussed in Part E, is when an airport itself owns a non-aeronautical activity, such as a hotel, but contracts out for the necessary expertise to operate that activity while retaining ownership and receiving the revenues it generates.

“Airport City” concept

5.15 The “airport city” (or “aerotropolis”) concept acknowledges the notion that large airports take the characteristics of a real city. They develop non-aeronautical services far beyond the core business of providing a location for passengers. Airports have not only become catalysts for employment and economic growth, but they have attracted a full range of businesses to the airport vicinity, which are reminiscent of the way seaports and river deltas became centres of economic activity in past centuries. Modern airports are becoming meeting places and indeed a destination in their own right, with corporations scheduling meetings at or near airports to maximize the valuable time of their managers. Many hotel chains report that airport hotels are among their most profitable properties, due not only to high demand for rooms, but also for revenues generated from conference services and catering. Airport cities are usually located only partially on land belonging to the airport, but also on off-airport land, a situation which may entail different treatment in terms of revenue for the airport operator.

Free zones

5.16 A small number of airport-operated free zones have been established, most commonly to accommodate bonded warehousing and storage, often with the primary objective of serving duty-free shops located at the airport.

5.17 The establishment of an airport free zone may impose substantial financial commitments on the airport and the State concerned, depending on the extent of the incentives which are offered to encourage enterprises to locate in free zones. These incentives would normally include:

- a) exemption of goods imported, exported, stored or processed from any import, export, transit or processing taxes or duties;
- b) goods produced benefitting from trade agreements to which the State may be party;
- c) possibility of entering a new market or improving present market position;
- d) tax exemptions or reductions regarding profits from export business;
- e) freedom to repatriate capital and profits;
- f) well planned secure zone with newly constructed buildings or sites prepared for construction with all necessary utilities;
- g) availability of materials, utilities and skilled and non-skilled labour at low cost; and
- h) satisfactory air and surface transport services.

The selection of incentives offered to enhance prospects for the operation of a successful free zone will, of course, be related to local circumstances and national laws and regulations.

5.18 Past experience, although limited, indicates that the type of industries most likely to be attracted to a free zone are primarily those involved in the manufacture of products with a high value per unit of weight and volume, or requiring a substantial component of inexpensive skilled and/or unskilled labour, or both. Considering the requirements that may need to be met, free zones may not represent an economically sound proposition for a large number of airports (or States). However, airports may still find it feasible and desirable to establish or expand bonded warehouses and storage areas to allow for limited consolidation and assembly activities, as this frequently may not impose substantial financial commitments on the airport or the State concerned.

Off-airport activities

5.19 A number of industrial or commercial activities are also taking place in the close vicinity of airports. They take advantage of the proximity of the airport but do not need to be located on the airport grounds, or they simply cannot, because of the scarcity of land at airports. Examples of such activities include hotels, restaurants, convention centres, shopping centres, freight forwarding agents, warehouses, e-commerce distribution centres, press distribution centres, light industries, and surface transportation-related activities. In terms of revenues that airport operators can derive from these activities, however, the situation is not as straightforward as for activities located on airport grounds and will depend on local circumstances and regulations.

C — MANAGERIAL ASPECTS

PLANNING AND SELECTION OF NON-AERONAUTICAL ACTIVITIES

5.20 For a number of reasons, priorities may need to be established for the selection of those concessions which are likely to yield the highest net revenue while ensuring that public convenience is taken into account. Similarly, coordination is necessary in developing commercial activities and harmonization in layout. All these factors are particularly important at the start of the master planning process and at the subsequent design stage of a new airport or terminal, when some compromises may be necessary in choosing among features required for the basic operational functions of the airport and those conducive to the profitable conduct of non-aeronautical activities. Periodic reviews of the various activities occupying airport space, to determine whether they are producing a satisfactory return and whether they could be replaced by more lucrative activities, will also need to be undertaken to ensure optimum use of the space available.

5.21 Since the market catered to by airport shops and services is composed of passengers, visitors and employees at the airport, it is useful to obtain information on these three groups of clients regarding their income levels, demands and the factors influencing their purchases. This would include information on preferred types of facilities, and opinions on prices charged and the quality of goods and services offered, which may be obtained by conducting periodic surveys. Other information that airport management is likely to find useful includes past, current and forecast air traffic volumes, including a breakdown of numbers of international and domestic passengers into arriving, departing and transit/transfer passengers; present and forecast numbers of visitors and airport personnel; the average duration of time spent by various categories of passenger traffic at the airport; and distribution of the passenger traffic over the hours of the day, days of the week, and months of the year.

Internal administrative arrangements

5.22 As non-aeronautical activities expand, airport administrations may find it necessary or desirable to assign their supervision to a separate managerial unit. The responsibilities of such a unit would usually include the selection of the range of services to be provided to the public, the selection of concessionaires and tenants, the negotiation of contracts and leases, including selection of the appropriate concession fee structure, together with the subsequent monitoring of prices charged, quality of service and such other conditions as the contractual agreements may stipulate.

Promotional aspects

5.23 Particularly in the early stages of its development of non-aeronautical activities, the airport needs to actively promote itself by such means as the preparation and circulation of promotional material describing, for example, the potential market offered by the airport, indicating the size of that market and the above-average income levels in that market. Also, the media should be used to describe the airport as a place of trade, and contacts should be established with such interest groups as local chambers of commerce. It is important to develop an overall marketing plan for these various aspects of non-aeronautical activity development and promotion.

D — SETTING FEES AND CHARGES FOR NON-AERONAUTICAL ACTIVITIES

APPROACHES TO DETERMINING MARKET VALUE

5.24 With the exception of the special service-oriented concessions referred to in paragraph 5.10, prior to setting a concession fee or rental charge it is necessary to estimate the costs to the airport of providing building premises or land to each of the various concessionaires or lessees involved, in order to establish a minimum for the fees and charges to be set in each case. This is to prevent the airport from incurring any losses on the activities concerned. However, since a prime objective is normally for the airport to derive as much profit as possible from non-aeronautical activities, it is necessary, particularly in relation to commercial trading activities, to establish the market value of the various airport premises for different non-aeronautical activities. In this context, it is the customer potential and the location of the premises, not only at the airport as such, but also within a certain building (terminal or other) or the airport area, that determines how attractive it is to a prospective concessionaire or lessee and consequently determines the level of the fee the airport can charge for its use.

5.25 Market value can be determined by a tendering procedure or can be assessed by the airport itself. Often a combination of these two procedures is used. Most airports using the tendering process do so as a general practice and also use it for the renewal of concessionary contracts on their expiry. Some other airports use the tendering approach selectively, usually confining its use to the potentially more lucrative activities. Tenders will be discussed in more detail later in this section.

5.26 An assessment of the market value of the premises offered usually involves comparison with premises of similar character in the vicinity of the airport or in the downtown area, taking account of factors such as the nature of the trading activity, the size of the market to which access is provided, and the volume of business transacted. In this context, it should be noted that certain areas or locations within the airport, particularly in the terminal building(s), are commercially much more attractive than others because they may be more visible to and accessible by prospective clients. Consequently, an airport may divide building space and land into different zones, setting a range of market values per unit of floor space (within, for example, a terminal building) or land depending on the location and the type of activity for which it is intended. In general, the more remote the location of the building space or land, the lower the market value.

Setting concession fees

5.27 With exceptions, such as those referred to below, concession fees may be variable or fixed, or a combination of both. The combination-type fee is normally preferable, particularly with regard to such major activities as restaurants, bars, duty-free sales and shops, as well as car rental and car parking operations because it creates the right commercial incentives for retailers and concessionaires, particularly on airports with limited commercial space. The range of activities to which the fees would apply would generally increase with airport size. At airports handling a very large annual volume of traffic, the tendency would be for most concession fees to be assessed in this way.

5.28 The fixed and variable components in a concession fee should recover all airport costs attributable to the concession concerned as well as produce the level of profit desired. It is for the individual airport to decide how much of the costs and profits, respectively, would be covered by the fixed as opposed to the variable components of the fee for a concession. The variable component of the fee should normally be expressed as a percentage of the turnover of the business concerned rather than as a percentage of net profit since the latter can raise various monitoring and auditing problems, and is thus more difficult to apply satisfactorily. While it is common practice to use a percentage rate that remains constant for one activity, irrespective of the volume of business, in some cases the percentage payable increases as the business volume increases, particularly when major concessions are involved.

5.29 It may be difficult to determine the turnover of a concession activity for fee assessment purposes. The airport will therefore need to establish the necessary accounting, auditing and control procedures to monitor turnover levels and include the necessary provisions in the concession contracts (see also paragraph 5.44 h)).

5.30 The fixed-amount type of concession fee would usually be applied selectively to those activities of a specialized nature likely to yield only modest profits (e.g. florist, barber, book and newspaper shops, photo slot-machines, taxis and hotel reservations). Contracts of this type should, however, be for relatively short periods, or if they are longer-term contracts, provide for review of the fee at periodic intervals.

5.31 Certain forms of concession fees are distinctly different from those more commonly used. Perhaps most interesting among these are the practices of assessing certain kinds of shops a fixed amount for each arriving and departing passenger; charging car rental companies a fixed amount for each car delivered, or a fixed rental plus a fixed sum for each airport passenger; and, in the case of taxi operations, imposing a licence fee payable by each taxi authorized to operate at the airport.

5.32 Attempting to increase airport revenues by raising the level of concession fees should be approached cautiously. Careful and subsequent monitoring and evaluation are recommended to avoid the concessionaire charging higher retail prices that may have an adverse effect on that concessionaire's gross revenue (as well as on the maintenance and appearance of the premises involved) and consequently on airport income. Airport management should, therefore, exercise reasonable control over prices charged at the airport to ensure that they are fair and competitive, when compared with the major airports of destination and departure of its traffic or with premises of similar character in the vicinity of the airport or in the downtown area.

Fees for concessions directly associated with the operation of air transport services

5.33 ICAO's policies on charges (Doc 9082, Section II, paragraph 10) encourage the full development of revenues from non-aeronautical activities, with the exception of concessions directly associated with the operation of air transport services, such as fuel, in-flight catering and ground handling. This group of activities nevertheless remain concessions and therefore not subject to the same limitations that it is recommended be applied to charges on air traffic, although caution should be exercised when the fees for these activities are being determined. As far as, for example, in-flight catering is concerned, it would essentially involve a lower fee being charged for that type of concession than for other food and beverage concessions at the airport. Because of their special characteristics, aviation fuel and ground-handling services concessions are referred to separately below.

Aviation fuel concessions

5.34 The concession fees for most aviation fuel concessions tend to be in the form of fuel "throughput" charges. Doc 9082 recommends, in Section II, paragraph 11, that where fuel "throughput" charges are imposed, they should be recognized by airport entities as being concession charges of an aeronautical nature. Fuel concessionaires should not add them automatically to the price of fuel to aircraft operators, although they may properly include them as a component of their costs in negotiating fuel supply prices with aircraft operators. The level of fuel "throughput" charges may reflect the value of the concessions granted to fuel suppliers and should be related to the cost of the facilities provided, if any. Alternatively, consideration may be given, where feasible, to replacing fuel "throughput" charges by fixed concession fees reflecting the value of the concession and related to the costs of the facilities provided, if any. Where imposed, any such charges or fees should be assessed by airport operators in such a manner as to avoid discriminatory effects, either direct or indirect, for both fuel suppliers and aircraft operators and to avoid their becoming an obstacle to the progress of civil aviation.

5.35 ICAO's policies on charges thus set out the position that the concession fee for an aviation fuel concession may reflect the value of this type of concession to the concessionaire. In practice, the "throughput" charge is, as a rule, added by the concessionaire directly to the price of the fuel sold to aircraft operators. This has given rise to much dissatisfaction among aircraft operators, as a result of which some airports have replaced or are contemplating replacing the "throughput" charge by another form of charge (this could involve increasing the fixed element in the concession fee).

Ground-handling concessions and ground-handling charges

5.36 At most airports, ground-handling is performed by airlines or concessionaires, although a considerable number of airports provide this function partly or completely themselves. Focusing first on ground-handling provided by the airport, it should be noted that the extent and nature of the ground-handling services provided by the airport — for example, if they cover passenger check-in and/or loading and unloading of aircraft — determine the scope of the charge(s) levied. Other considerations include whether there should be one or more charges, and on what parameter(s) the charge or charges should be based. The charging scales used could be arrived at by dividing the estimated ground-handling costs for the coming year by that year's estimated total volume of international and domestic passengers, and/or weight of baggage and cargo handled, and/or accumulated maximum permissible take-off weight, which would establish the estimated basic unit costs. The airports' profit margin would be added to this cost in order to arrive at the basic unit rate(s) in the charging scale(s). Unit rates could increase at certain intervals depending on the volume handled in each case. A prerequisite for two or more separate cost-based ground-handling charges is that the overall cost basis be subdivided accordingly.

5.37 When ground-handling services are provided by concessionaires, whether they are airlines or separate ground-handling agents or companies, the concession fee could be in the form of a fixed component plus a percentage on turnover. Where the ground-handling services are provided by one or more entities other than the airport itself, the airport should carefully monitor the charges being levied on aircraft operators to prevent them from being excessively high compared to those at a rival/neighbouring airport, as this could cause traffic to be diverted to that airport. It should be noted that competition in the provision of ground-handling may have the beneficial effect of reducing ground-handling charges without compromising the quality of the service provided.

Setting rental charges

5.38 The approach to setting rental charges is broadly similar to that outlined for concession fees. An assessment of the market value of the building space and land involved could be arrived at by taking into account the level of rentals charged for similar building space or land in the vicinity of the airport or in other comparable areas.

5.39 Since the market value of a rental property is strongly influenced by its location, an airport would normally divide building space and land into different zones, setting a range of charges per unit of floor space (particularly within terminal buildings) and lot of land, with much lower charges applying to space in more remote areas of the airport. In this context, airports may wish to consider making a distinction between space required by airlines that is essential for their operations at the airport, as opposed to space required by them for other purposes. Apart from airlines, airports may also choose to charge certain categories of tenants less than others, for example, other aviation enterprises, flying clubs, certain government departments and non-profit organizations. Moreover, some airports charge below what could be termed an adequate return for airport locations where they wish to encourage the establishment of certain activities.

Tenders

5.40 Public tendering is used extensively in making arrangements for the offering of concessions, and also sometimes for the renting of airport premises or land, because it is often the most practical way of determining the market value of business trading rights at the airport or of airport premises. It also provides airport management with a

widely acceptable means of selecting clients and tenants on favourable terms. It is worth noting that it may not necessarily be advisable to accept the highest tender since other factors, such as standards of service and competitive prices, could play a major role in arriving at the selection most profitable to the airport. To ensure that all requirements are met, many airports follow specific procedures in the invitation and processing of bids by tender. In some cases, particularly where major concessions are involved, the process is undertaken in two stages — the first to select candidates that meet the basic qualifications to provide the standard of service desired, and the second to invite these candidates to submit tenders for evaluation.

5.41 When airports invite public tenders, it is usual for such invitations to include information on which the bid may be based, together with specific indications as to the information required in support of the bid and the way the bids are to be submitted. In the case of simple rentals, the points covered might be expected to include:

- a) details of the size, location and condition of the premises;
- b) the nature of the activities that could be conducted on the premises;
- c) the proposed date of commencement and duration of the lease;
- d) maintenance and services provided;
- e) improvements expected to be carried out by the lessee;
- f) security or guarantee deposit requirements; and
- g) closing date for tender submissions.

5.42 For concessionary trading activities, information on some or all of the following additional aspects is usually included in tender documents:

- a) specific information on the type(s) of concessionary activity envisaged, including the variety of merchandise or services to be provided;
- b) the nature of any exclusive trading rights to be granted;
- c) qualifications and other requirements regarding personnel;
- d) the standards set for merchandise, service, fittings and furnishings;
- e) the nature of furniture and fittings to be provided by the concessionaire;
- f) insurance requirements;
- g) data on past traffic volume and predictions for the future;
- h) past sales figures, if applicable;
- i) trading hours; and
- j) extent of control to be exercised by the airport entity.

E — CONTRACTUAL ASPECTS

GENERAL

5.43 Once the concessionaire has been selected, a contract needs to be drawn up establishing and defining the relationship between the airport and the concessionaire. The airport should normally prepare the draft contract. If the headquarters of the concessionaire are located in a State other than that of the airport, the contract should be drawn up under and governed by the laws of the State where the airport is located. The contract should also stipulate that where arbitration procedures fail, any disputes that might arise should be settled before the courts of that State. The same general considerations would apply with regard to leases.

CONCESSIONARY TYPE CONTRACTS

5.44 Apart from what has been stated in the preceding paragraph, contracts governing concessionary trading activities normally incorporate stipulations and provisions, such as:

- a) duration of the contract;
- b) specification of the activity to be carried out on the premises and prohibition of any changes in the intended utilization of the premises;
- c) arrangements concerning subletting, if applicable;
- d) level of concession fees, terms of payment and arrangements for review of fees;
- e) payment of cost of registration of contract, various services and taxes;
- f) requirement to make security or guarantee deposits;
- g) obligation to adopt proper accounting procedures and to submit audited accounts periodically;
- h) right of the airport to have full and unrestricted access to all the accounting and financial records of the concessionaire that relate to the concession;
- i) designation of the premises to be occupied, statement to the effect that they have been inspected by the parties concerned, and right of the airport administration to carry out inspection and supervision of the premises;
- j) obligation to maintain the premises in their initial condition or, alternatively, obligation to submit to airport management any project for alterations, and terms for evacuation of premises on termination of the contract, including undertaking to return such premises in their initial condition;
- k) conditions governing maintenance and repair of the premises and cleaning arrangements;
- l) insurance requirements and determination of liability with respect to:
 - 1) accidents sustained by occupants or by third parties;
 - 2) thefts with or without forced entry involving damage to the premises; and
 - 3) damage caused by fire or water; or by floods, lightning and other Acts of God;

- m) obligation to observe current laws and regulations;
- n) conditions governing advertising and signs on the premises;
- o) causes for termination of contract (bankruptcy, criminal conviction, non-compliance with terms of contract, etc.) and conditions regarding the application of sanctions in such cases;
- p) arbitration procedures;
- q) definition of terms used; and
- r) options for renewal of contract.

5.45 Depending on the nature of the concessionary activity, various other clauses may be included, such as the:

- a) guarantee of exclusive rights to operate the type of concession specified;
- b) opening and closing hours;
- c) obligation to sell merchandise at competitive prices and at the prices displayed, and the nature of price control exercised by the airport;
- d) quality standards, control of merchandise and such aspects of the sale and serving of food and beverages as:
 - 1) quality, procedure of preparation and storage of food and beverages;
 - 2) quality, condition, maintenance and cleanliness of apparel, tables, chairs, etc.; and
 - 3) hygiene standards for personnel;
- e) right to install specialized equipment; and
- f) requirements concerning qualifications of personnel engaged in specialized services and security procedures.

LEASES FOR PREMISES, LAND AND CONSTRUCTION SITES

5.46 Leasing contracts, concerned primarily with the occupation and use of airport property, are usually less complex in terms of the variety of provisions they contain, although in some cases certain clauses may need to be expressed in greater detail. It is unusual for these contracts to contain any provisions concerning the accounting procedures of the lessee, or to impose any obligation to submit financial statements to the airport; clauses relating to the nature of the enterprise to be conducted might often be less specific than in the case of a concessionary trading contract.

5.47 Since leases relating to land, and to construction sites in particular, are usually negotiated for longer periods than is normal for leases of airport premises or concessionary trading contracts, there is a greater need for them to include provisions for periodic reviews of the rental charges, so that due account may be taken of property revaluation. It is prudent for contracts of this nature to be quite explicit concerning the airport's right to repossess the property after expiry of the contract, and the conditions and terms under which this may be effected. Repossession of property by the airport may also take place if the lessee defaults on payments, if the airport needs to repossess because of its operational requirements, or if repossession would be in the public interest. If repossession takes place, compensation, if due, may also need to be addressed.

LENGTH OF CONTRACT PERIOD

5.48 The length of the contract period would normally be influenced by factors such as the type of business or rental involved and the extent of the investment in fixed assets by the concessionaire or lessee. Thus, longer term contracts would usually be offered in cases where significant investments are involved. Generally, contracts would make specific provisions for renewal.

5.49 While the lengths of concession contracts vary, most tend to fall in the one- to five-year range. Leases of airport premises are usually for somewhat shorter periods, with up to three years or less being most common. For the rental of airport land involving the construction of buildings by the lessee, the general range appears to be from 10 to 40 years, with the most common period being around 20 years. This reflects recognition of the need to grant lessees of construction sites a reasonable period in which to amortize the usually large investments involved. It is important that, except in cases where concessionary or rental contracts are of short duration, they provide for a periodic review (for example, once a year) of the fees charged during the contract period to ensure their continuing appropriateness.

MANAGEMENT CONTRACTS

5.50 As noted in Part B of this chapter, a special form of contract is the "management contract", which may be used by an airport in cases where it may wish to contract out for the necessary expertise to conduct an activity of a commercial nature but still retain ownership of, and a high degree of control over, the activity concerned. Such contracts would specify the type of activity to be performed in exchange for a management fee, while stipulating that the net revenues earned accrue to the airport, possibly after deduction of a commission.

CONTRACTS RELATING TO FREE ZONE ENTERPRISES

5.51 The airport free zone concept has so far only had limited application. The nature of free zones and the contractual arrangements involved would depend largely on local circumstances. Contracts and leases with commercial enterprises operating in free zones are likely to contain certain clauses not common to the other types of contracts mentioned above. Where foreign enterprises are involved, such clauses may contain reference to requirements imposed by legislation or governmental regulations.

5.52 The creation of a free zone and various aspects of its operation by the entity charged with its administration (whether the airport itself or a subsidiary established by it) would probably be covered by special legislation, while the rights and obligations of an enterprise functioning in the zone would be defined in the legal instrument (such as a charter or letters of incorporation) effecting its creation. Stipulations applying to foreign enterprises concerning their ownership, expatriation of capital and profits, employment of nationals, etc., would therefore not normally be covered in any contractual arrangements drawn up by the free zone entity, since such matters would already be governed through the mechanisms of the administrative or corporation law of the national, State or other jurisdiction concerned.

Chapter 6

FINANCING AIRPORT INFRASTRUCTURE

This chapter addresses various aspects of financing that need to be considered when embarking on an airport infrastructure investment project, which may entail construction of a new airport or expanding the capacity at an existing airport.

Part A addresses the relevance of traffic forecasts in the context of project development and financing, and refers to related policies and guidance available.

Part B outlines the types of experts likely to be involved in an infrastructure development project.

Part C focuses on the relevance and purpose of economic and financial analyses, and outlines elements of their contents.

Part D considers the purposes of financing plans, addresses currency requirements, and discusses the repayment of loans.

Part E focuses first on possible domestic sources and then on foreign and other sources, including pre-funding, that might be used for financing an airport investment project.

A — TRAFFIC FORECASTS

6.1 Sound traffic forecasts are essential to any airport infrastructure development project and its financing. The main purpose of such forecasts is to identify air traffic developments and to establish the associated capacity requirements of the airport. The forecasts should cover the planned life of the project concerned and should include forecast annual volumes of international and domestic scheduled and non-scheduled aircraft movements and passenger and cargo traffic. They should also include, where relevant, general aviation and exempted flights. Distribution of traffic by month and day (and, if required, within the day) would also be required in order to recognize traffic trends and peaking patterns, as would data relating to aircraft types expected to be operated.

6.2 For guidance on the preparation of traffic forecasts, reference is made to the ICAO *Manual on Air Traffic Forecasting* (Doc 8991). Reference should also be made to Doc 9082, where it is recommended in Section I, paragraph 19 that airport users, particularly aircraft operators, should provide advance planning data to individual providers on a five- to ten-year forecast basis. Such data should include future types, characteristics and numbers of aircraft expected to be used, the anticipated growth of aircraft movements, and passengers and cargo to be handled.

B — USE OF EXPERTS

6.3 During the planning and throughout the implementation of an airport investment project, it may often be desirable and advantageous for an airport without sufficient expertise in the planning field to obtain the services of one

or more outside consultants. In so doing, however, it is important that every effort be made to ensure the consultant selected is thoroughly knowledgeable in the area of expertise required. Under normal circumstances, it is also desirable that the consultant not be affiliated with a major bank, investment bank, contractor or a manufacturer of airport equipment, as this could possibly influence any technical specifications drawn up by the consultant or prepared on the basis of the consultant's report. Airport management should also work closely with the consultant, regularly monitor the work and carefully review the resultant report, assessing, for example, whether it is realistic and whether national and local circumstances have been fully taken into account. With regard to obtaining expert assistance, reference should also be made to paragraph 6.51, Part E. The type of experts generally used in an airport investment project are:

- economists trained in evaluating the costs and benefits of investments;
- financial advisors with an expertise in airport financing to assist in negotiating with banks and other fund providers (they should be independent of the entity providing the loan);
- attorneys with expertise in drafting documents related to airport investment projects; and
- project management companies, generally engineering companies with expertise in planning and construction.

C — ECONOMIC AND FINANCIAL ANALYSES

6.4 All organizations are faced with decisions on how best to pursue their objectives. To guide investment decisions, organizations use evaluation techniques that focus on the options and search for that which maximizes net benefits. Every major investment decision taken by an airport should be supported by analyses to demonstrate costs and benefits accruing from investment in infrastructure to providers, users and, as appropriate, the wider community. Consultation with users should assist States in guiding their major investment decisions. With regard to analyses undertaken, commonality in approach within a State or region would be desirable.

6.5 Economic and financial analyses of major airport projects are becoming an increasingly important component of proposals seeking government funding or private financing. These activities are crucial given that airports can make an important contribution to a State's economy by generating employment and other economic activity, not only at the airport and the surrounding community, but for the country as a whole.

6.6 The following paragraphs describe various types of analyses that should be considered prior to beginning any large-scale investment project. These are the economic impact, cost-benefit, business case, and financial analyses. Each is designed for a specific purpose.

ECONOMIC IMPACT ANALYSIS

6.7 An economic impact assessment of a major airport investment project¹ identifies the cumulative economic effects of the project. It goes beyond the projected or existing generation of revenues and employment, and assesses the wider contribution made or expected to be made to the national, regional or local economic development. The results of such assessments are often used in the decision-making process of determining the economic viability of an investment in aviation infrastructure.

6.8 The airport's contribution to the economy can be assessed on the basis of the following factors from which direct, indirect and induced economic activities can be derived: sales revenues, labour income, tax revenues, capital investment and employment. Accordingly, economic impact assessments can be designed to collect information on a

1. Such a project could be either a new "greenfield" airport or a major expansion of an existing airport.

wide range of economic activities taking place both on-site and off-site the airport, in the surrounding region, or even throughout the State.

6.9 Economic impact assessments include information on the number of jobs directly provided by the airport operator, air carriers and other airport-related employers, such as the air navigation services provider, and companies dealing with procurement and aircraft servicing, maintenance and repair. Direct and indirect employment could represent a sizeable labour income and constitute a major segment of the region's or the State's economy.

6.10 Beyond the direct and indirect economic impacts of the airport on the economy concerned, there is the induced impact created by spending labour income from direct and indirect economic activities. For an airport of a medium to large scale input-output models are applied to identify the multiplier effects² throughout input-providing and consumer industries. An economic impact assessment can reveal benefits from tourism and various related activities to the economy concerned. Economic activities attributable to the tourism industry that are highly dependent on air transport services can be accounted for as catalytic demand effects when applying an extended approach of an economic impact assessment.

6.11 An economic impact assessment can reveal the share generated by air transport services and multiplier effects in a State's Gross Domestic Product (GDP). The knowledge of the contribution made by an airport to the GDP may positively influence the decision-making process regarding investment in additional capacity or infrastructure.

6.12 While the preceding paragraphs have focused on the potential benefits of new or expanded airport development, it should be recognized that such projects often involve certain disadvantages. For example, the specialized equipment needed for security and baggage handling may have to be imported, causing concerns regarding the balance of payment in the national accounts of a developing economy. Construction projects may strain limited supplies of national human, physical and financial resources, thereby delaying or postponing other projects. Also, the project may place demands on other infrastructure (such as air navigation systems, access roads and power supply) in excess of their capacity, leading to reduced services to other users or other costly expansion. Moreover, the project may pose environmental and ecological problems, such as pollution from aircraft noise and other emissions. The determination and, where possible, the quantification of some of these disadvantages must be addressed separately, while some others will be analysed in a complementary environmental impact assessment.

6.13 A well prepared and researched positive economic impact study can be instrumental in obtaining financing, or better financial terms, for an airport project. Indeed, the absence of such an economic impact evaluation may make it more difficult to secure financing from foreign sources, such as development banks and funds, where the effects on the national economy of the proposed project are taken into account in the evaluation process.

6.14 In conclusion, it should be emphasized that the combination of successfully relating airport plans to regional development plans, recognizing and displaying sensitivity to environmental concerns, and presenting well researched economic impact analyses, provide useful planning and management tools which may encourage investment. This also produces a clear message to public authorities, business partners and investors, which may trigger further investment with consequential benefits for the economy of the State concerned.

COST-BENEFIT ANALYSIS

6.15 When airport projects are publicly funded, a methodology that reflects both the public and private benefits and costs of the project should be considered. Cost-Benefit Analysis (CBA) identifies the investment option that best conforms to the economic goal of maximizing net societal benefits. This obviously goes well beyond a financial evaluation (see paragraphs 6.28 and 6.29) that focuses on the project's financial accounts and cash flows. In addition, there are differences between a financial evaluation and a CBA on the treatment of capital costs. While a financial

2. See definition in the Glossary of Terms of this manual.

evaluation would normally re-state the capital costs into annual depreciation and interest expenses, a CBA measures capital costs by the cash expenditures required in future years — not by depreciation and interest. The cash stream of expenditures is compared to the stream of benefits and the annual net amounts are discounted to compute a net present value (NPV)³ for the investment option.

6.16 To illustrate the different scope of a financial evaluation and a CBA, consider the extension of a passenger terminal at an airport. The financial evaluation would look at the financial cash flows and required user charges associated with this investment, while a CBA would consider the benefits and costs to all parties involved. These would include the air carriers' benefits from improved passenger processing and the passengers' benefits from time-savings. Additionally, if considering the wider social effects, the negative effects, such as increased traffic and noise experienced by individuals living or working in the vicinity of the airport, need to be taken into account.

6.17 There are also potential productivity gains for the airport that must be taken into consideration. For example, an investment in an enhanced baggage handling system may reduce the number of agents required in the future thereby reducing future operating costs. Transportation efficiency benefits may also accrue to the air carriers and would include savings arising from the quicker turnaround of aircraft, and possibly greater service reliability and predictability. Similar considerations to those noted in the last sentence of the preceding paragraph would also apply.

6.18 The measurement of safety benefits requires an analysis of the safety risks that are a composite measure of the probability and the severity of an adverse occurrence. A CBA takes the consequences determined by a risk analysis and attributes a specific monetary value to them. Where accident losses involve tangible goods such as property, accident risks can be valued on the basis of replacement or repair costs. Where losses have intangible consequences such as personal injury or loss of life, the proper valuation of accident risk becomes more uncertain and judgemental, and should be approached with care. Given the difficulties involved with measuring safety benefits, they are often omitted in these analyses unless the safety benefits would differ among the options considered or prove decisive in establishing a positive net benefit for a single infrastructure investment. Where a project cannot be justified by consideration of the non-safety benefits, it may be necessary to consider whether the project will lead to an improvement in the level of safety.

6.19 Projects may have negative or positive effects that are experienced by third parties (for example, environmental impacts). The identification and measurement of these effects are less readily identifiable and may have no obvious market value. It is nevertheless useful to list these and quantify them using analytical techniques, if at all possible.

6.20 The impact on the environment is an important effect of many large transport projects. Whether considered as a cost or as a negative benefit (environmental effects are often unintended and typically negative), these effects are difficult to measure precisely. Nevertheless, it is important that they be identified and carefully evaluated. Extensive research has been carried out in the quantification of environmental effects.

6.21 Once all of the benefits and costs have been identified and forecast, in order to determine if a project is cost-beneficial, or to assess which option yields the greatest net benefits, the net cash stream of benefits and costs is discounted to today's value to produce a single NPV. The preferred option, from an economic perspective, would be the one with the highest NPV. The need for discounting stems from the fact that the value placed on income and expenditures depends on when they occur. One unit of currency to be received a year from now is worth less than the value of one unit of currency in one's pocket today because of opportunities foregone during the year.

3. The NPV is the discounted value of future income (or benefits) from a particular investment less the discounted value of expected costs. A positive NPV indicates that an investment project is worthwhile. Also used in this context is the Internal Rate of Return (IRR), which is the discount rate that makes the NPV of an investment project equal to zero. The latter is a widely used method of investment appraisal as it takes into account the timing of cash-flows.

6.22 Benefits and costs do not necessarily follow the same distribution of cash flows arising from a financial evaluation. In addition, benefits accruing to aviation users may be insufficient to cover the total cost of the project.

BUSINESS CASE

6.23 An important purpose of a business case is to facilitate coordination with all parties involved and to support the negotiations with financial institutions. The development of a business case is often a complex process and includes a number of assumptions and assessments. A major part of a business case study is the financial analysis (or evaluation) discussed earlier. A business case often includes also, among other components, a cost-benefit analysis and a risk management section. The information required for a business case goes beyond the scope of the budget and business plans (see Chapter 3, Part A).

6.24 A business case sets out the context, identifies the issue(s) to be addressed and provides a detailed description of the proposal selected, as well as the rationale for its selection among other options, and a comprehensive assessment of its benefits, costs and risks. The other options should also be described together with their benefits, costs and risks. In addition, a business case may provide analyses of, and information on, products and services, markets, employees, technologies, facilities, equipment, capital, financing, contingency plans, etc. It evaluates performance and productivity, and critical success factors are identified and discussed. Key risk factors are identified together with the indicators that would signal changes in results. For each risk factor, mitigating measures should be indicated. The impact on the organization and on human resources would need to be assessed with regard to recruitment, redeployment, training and discharging.

6.25 The business case should identify airport business activities and processes that will be impacted, and should evaluate this impact and propose appropriate measures for dealing with it. For example, in the case of the construction of a new terminal or the expansion of an existing one, a business case would try to identify what the impact would be on airport users, such as aircraft operators, passengers and forwarders, and on providers, such as ground-handling services, catering and other services. It would examine the impact on human resources in terms of recruitment, layoffs, redeployment or training.

FINANCIAL ANALYSIS

6.26 For airports that seek investment funds from quasi-private or private sources, a financial evaluation will likely be necessary to secure funding for the proposed project. A properly completed financial evaluation will provide a complete assessment of the cash flows, including the risks of the downstream revenues associated with each investment option, and also assist with choosing between alternative solutions. How the evaluation is conducted is largely dependent on its target audience. However, most evaluations begin with an estimate of the project's capital cost, projected output such as passenger enplanements or aircraft operations, and annual revenues, expenses and deductions. Measures such as the NPV, IRR and Payback periods are frequently used to summarize the financial attractiveness of a proposed project and its possible alternatives. Pro-forma earnings statement, debt redemption schedules, and statements of cash flows are also typically prepared.

6.27 It is sometimes suggested that a financial analysis also be conducted on every publicly financed airport project. However, such analysis does not measure the full economic costs and benefits of a project and is therefore of limited value to the State in these circumstances. The following factors may cause public benefits to vary from those envisaged by the project builder and operator:

- Producers (airports) sometimes create benefits for other members of the economy but are unable to obtain payment for these benefits, or, alternatively, they may cause losses to others without having to pay the full costs. These events are called externalities. A frequently cited negative externality to airport operations is aircraft noise. In the case of externalities, the measure of net benefits to the producer will not be the same as the net benefits to the public.

- Public costs and benefits may not be fully realized in market transactions due to imperfect information. The full value of saved passenger time or improved air safety attributable to an investment may not be understood by passengers and thus may be difficult to recover through higher air fares and airport fees.
- Some airports are, de facto, monopoly providers of regional airport services to certain classes of aircraft. Users of such an airport do not have reasonable alternatives should the airport increase its fees to cover the cost of a project, although the project may or may not have benefits equivalent to the rate increase. Thus, the ability of an airport to cover a project's costs by a rate increase does not necessarily mean that the project has economic merit from the public's standpoint.
- A project at an airport may have important benefits, but if some users are in a position to block the project, the worthwhile project could be blocked. For instance, a dominant airline might oppose the addition of new capacity that would disproportionately benefit its competitors, or, due to short-term financial problems, may reject any project with future benefits that would increase current costs.

D — THE FINANCING PLAN

PURPOSE AND CONTENTS OF A FINANCING PLAN

6.28 Prior to embarking on an airport investment project and securing the financing required, various data need to be compiled. Thus, broad order-of-magnitude estimates of the costs of the project involved need to be prepared and, as noted in Part A above, annual traffic estimates need to be made for the period extending over the life of the airport infrastructure created by the project. Possible sources for financing the project would need to be identified, as would potential airport revenue sources subsequently required to meet debt-servicing obligations for which the airport would be responsible. All this information is also relevant to the preparation of the analyses referred to above.

6.29 Once it is decided to proceed further with the airport project, it becomes necessary to develop a much more detailed plan — the financing plan — which provides such basic information as:

- a) estimates of the component costs (labour, materials, equipment, contingency, etc.) of each distinct part of the overall project;
- b) the cash flow required to make disbursements at various stages in the project's progress, including construction cost and payment on the related debt;
- c) the currencies in which payments are to be made; and
- d) the sources from which the funds are to be forthcoming, whether from:
 - 1) sources generated by the airport itself from its operations (e.g. retained earnings); or
 - 2) other sources including information on the applicable conditions (e.g. interest rate and repayment period).

6.30 Also to be emphasized is the importance of the availability of data showing the trend in the financial situation of the airport over recent years, as well as anticipated developments over the period of debt repayment. Historical financial data are contained in airport accounts showing data such as those described in Chapter 4, Part A — Accounting. Of particular relevance is the recording of revenues and expenses by major item. Estimates regarding future financial developments would emanate from the airport budgets and longer-term financial plans. In that context, reference is made to the text on the budgeting process in Chapter 3, Part A — Basic aspects of financial management.

In the absence of such financial data, it will be much more difficult for those outside the airport to decide whether the loan or financing sought should be granted and, if granted, what terms should be offered.

6.31 It should be understood that apart from regular reviews prior to the decision to proceed with the airport project, once that decision has been made, the original cost and revenue estimates will need to be reviewed and updated. This process should continue throughout the project construction and implementation phase.

CURRENCY REQUIREMENTS

6.32 An important — and in some instances a determining — factor as to whether an airport investment project can proceed is the demand it places on foreign currency, and the extent to which costs can be defrayed in domestic currency. Where, as will often be the case, project costs call for payment in foreign funds and the national currency is not freely convertible, it is essential to establish, at an early stage, the practicability of obtaining the foreign exchange required. The provision of such exchange will need to be examined with the appropriate fiscal authorities of the government, and for this purpose, a statement should be prepared detailing, as fully as possible, both the foreign currency payments involved and the extent to which prospective sources of financing for the project can be expected to accommodate foreign exchange requirements. While arrangements securing the loan of foreign funds or even the provision of foreign goods and services on extended credit terms serve initially to reduce exchange problems, all such arrangements remain a legitimate concern of the fiscal authorities of the government, since repayment of the debt involved ultimately constitutes a demand on foreign exchange reserves.

6.33 The extent to which payment of project costs can be made in the domestic currency or will involve foreign exchange depends on the many and varied factors present in each situation; it is therefore only possible to give the following general guide as to the kinds of costs that might typically be expected for each category.

Costs typically payable in domestic currency

6.34 Such costs may include:

- a) construction work and other services performed by domestic contractors and firms;
- b) land acquisition including associated costs of any easements (e.g. rights-of-way over another's property);
- c) salaries, wages and other related costs of national employees;
- d) domestic materials, supplies and equipment of which the country is not a net importer;
- e) interest on domestic credit; and
- f) taxes.

Costs typically payable (wholly or partially) in foreign currency

6.35 Such costs may include:

- a) construction work and other services performed by foreign contractors and firms;

- b) imported equipment, materials and supplies;
- c) wages, salaries, allowances and other related costs of expatriate personnel; and
- d) interest on foreign credit.

It should be noted that policy directives and contractual arrangements seeking maximum use of domestic labour and materials can be effective restraints on foreign currency requirements.

REPAYMENT OF LOANS

6.36 Early in the planning stages, a determination needs to be made of the future ability of the airport to service loan obligations. Economists and financial advisers can work with the airport to determine the ability of the airport to repay loan obligations. That ability depends to a large extent on the airport's revenue-generating capacity, which may increase significantly as a result of the availability of the new or improved airport facilities financed by the loan concerned. In this context, it may be recalled that many airports still do not recover their total costs and those with low traffic volumes have little or no immediate prospects of doing so. Where this is the case, the burden of securing funds to service the loan will normally become the responsibility of the government concerned. Nevertheless, where circumstances permit, growing emphasis is being placed on airports assuming responsibility for providing the funds required for meeting a part of the interest and instalment payments on a loan taken to finance airport infrastructure developments.

6.37 Where such responsibility is assigned to the airport, a schedule should be drawn up showing, for every loan or part of a loan involved, when each instalment and interest payment is to take place and the amounts involved, as well as what revenue or other income the airport intends to pledge against these commitments. Funds required to service the debt obligations would need to be channelled from the overall revenue flow of the airport, principally revenues from charges on air traffic, concessions and rentals.

6.38 Payment of foreign loans usually requires outlays in convertible currency. To the extent that the airport is responsible for any servicing of this type of loan, it may be advisable for it to be given access to such convertible currency as it might have generated from its operations. This could involve the establishment of a convertible currency account (or accounts) being held for that purpose by the airport, or trustee, subject, if required, to monitoring by the foreign exchange authorities in the State concerned to ensure it is being used as intended.

E — SOURCES OF FINANCING

6.39 A survey of potential sources of funds for an airport project, and the selection of which of these to consider, should be done as early as possible in the planning process. Financial advisers can assist in locating sources of funds for airport infrastructure development. It is important to do so in order to have, from the outset, an indication of whether financing will be available; to provide adequate time for completion of the usually lengthy preliminaries preceding the conclusion of specific financial arrangements; and to become versed in the procedural and other requirements of such arrangements in time to incorporate those requirements directly into the planning process itself wherever compliance therewith would be facilitated by so doing.

6.40 Potential sources of funds will vary considerably from State to State, and which of them are to be approached has to be studied and decided individually for each project. Historically, the most common source of funds for airport development was government sources. This includes funds provided by the government directly as well as through government-owned or sponsored financial institutions, including development or export-promoting agencies. The government may be a national government, or one or more foreign governments. Also, one or more international governmental institutions or agencies may be involved. Another source of financing is retained earnings, although this does not mean that self-financing is or will be the largest source of financing. The reliance on government financing has

decreased considerably in recent years with the continuous increase in the number of autonomous bodies operating airports. Compared to the situation a few years ago, the use of commercial loans has shown a remarkable increase, again reflecting the growth in autonomous entities that are expected to secure their own financing. An interesting new trend is the growing importance of bonds and share capital, which again is clearly linked to the new organizational structures. Pre-funding of capital projects through airport charges is another source of financing that may be used in specific cases and under certain conditions (refer to Appendix 4).

DOMESTIC SOURCES

6.41 Costs to be met in domestic currency may be financed by various means available within the State itself, including loans (and sometimes grants) from government sources, commercial loans negotiated through banks and other domestic financial institutions, and the extension of credit by contractors and other firms engaged in the project. Also relevant in this context is income from the sale of airport land, particularly where a new airport will replace an existing airport, the site of which can then be sold. Government assistance in the form of interest-free loans or even grants can appropriately be sought in recognition of the local, regional and national benefits derived from the airport's existence and development. Where revenues are insufficient to cover total operating costs, including depreciation and interest, the execution of any new development project will inevitably depend on government assistance in some measure, and the benefits just mentioned could play a role of particular importance in securing such assistance. Their evaluation, even though only practicable in broad terms, should therefore not be neglected and is a primary purpose of the economic impact surveys referred to in Part C above. Financial assistance in recognition of such benefits may of course be sought from the local and regional, as well as the national, governments, but in so doing, the airport should be prepared to demonstrate that the particular communities within such jurisdictions do, in fact, derive distinct benefits beyond those realized nationally.

6.42 Where an airport seeks commercial loans directly from banks or other domestic financial institutions, it can expect that forecasts of its future operating costs and revenues will be required as a basis for assessing its ability to repay such loans. Where that ability is judged adequate, such commercial financing will probably be obtainable against an appropriate pledge of future airport revenues, but to the extent that it is found lacking, it is likely that the loan will only be forthcoming if repayment is backed by the government or some other acceptable guarantor.

FOREIGN SOURCES

6.43 Further to that noted in paragraph 6.32, project costs payable in foreign funds constitute a demand on the State's reserves of foreign exchange and as such their financing will usually have to be arranged through, or with the approval of, the appropriate government authorities. While the fluctuations in the value of these funds can add to the cost of an airport development project, hedge funds can be established to help reduce the volatility and risk associated with the use of financing airport development using foreign funds.

6.44 Depending on the magnitude of the costs involved and the state of exchange reserves, it may prove possible to obtain the required financing through such domestic institutions as those mentioned above, but usually this will not be the case and foreign sources will need to be found. In any event, quite apart from foreign exchange considerations, such sources should always be explored as a matter of course, since financing may be available from them on more favourable terms than those obtainable from domestic institutions (lower interest rate, repayment over a longer period, etc.).

6.45 For most States, particularly developing States, the foreign sources of financing are principally government-operated. The following paragraphs focus first on such foreign governmental financing sources as bilateral institutions, and development banks and funds, and then comment on foreign commercial sources such as commercial banks, contractors and suppliers.

Bilateral institutions

6.46 Foreign financing may be available from foreign governments in the form of loans negotiated directly with the government of the recipient country, or may otherwise be facilitated by particular agencies of government that have been established for the primary purpose of promoting the nation's export trade. The development of transport facilities and the consequential benefits to the national economy as a whole expected to result from any given project may evoke the provision of such assistance for various reasons, among them being the desire to promote trade and cultural relations between the two countries. Additionally, as mentioned, the wish to facilitate the export of technology and equipment required for the project and available in the assisting State may be a further reason for interest. Such assistance, as well as any subsequent negotiations, will usually need to be pursued through the appropriate governmental authorities of the State in which the project is being undertaken.

6.47 In the case of developing countries, such assistance may be available through specific aid programmes, which certain governments have established to promote economic and social development in various areas of the world. These programmes extend assistance in forms such as loans on preferential terms and the direct provision of supplies, equipment and technology. Examples, by State, of such sources of funds are presented in Appendix 5, Part A.

6.48 For projects not qualifying for aid from such sources, assistance in meeting the requirements for foreign financing may be available through the special export-promoting agencies of certain governments. Assistance from these sources takes various forms, including direct loans by the agency itself, guarantees covering private loans, and insurance of the risk assumed by national enterprises in providing goods and services on credit terms. Examples of agencies of this nature are the Export Development Corporation of Canada, the Export-Import Banks of Japan and the United States, COFACE of France, HERMES of Germany, and the Export Credits Guarantee Department of the United Kingdom.

Development banks and funds

6.49 Possibly of most importance among the sources of foreign financing available to developing States are the international banks and funds that have been established to assist in the financing and execution of projects seeking to promote national economic development. It should be noted, however, that such projects cover a wide range of economic activities, of which airports are but one. Prominent among these banks and funds are the International Bank for Reconstruction and Development and its affiliates, the International Development Association and the International Finance Corporation (although the purpose of the latter is to promote development through loans to the private sector), and various regional development banks and funds. A list of such institutions is presented in Appendix 5, Part B.

6.50 As in the case of financing by foreign governments, the possibilities of obtaining financial assistance from the above institutions for any particular airport development project, and the procedures to be followed in applying for such assistance, will inevitably involve the government of the State in which the project is being undertaken. There are two reasons for this: first, any loan or grant that may be extended will be made either to a government or government agency, or to a private entity with the support and guarantee of the government; second, the first test of suitability of a project is usually whether the sector of the economy in which it is categorized, and the project itself, are of high priority for development and are so recognized in the government's development plans.

United Nations Development Programme

6.51 Developing States should bear in mind the United Nations Development Programme (UNDP) as a source of assistance when seeking to finance airport project(s). The various kinds of expertise required for the consideration, planning and execution of airport development projects, which will be needed for the necessary feasibility and cost-benefit studies, in the preparation of master plans and in the actual construction phase itself, may be requested from the State's programme of UNDP-funded technical assistance. As well as expertise, funding for minor necessary airport equipment may also be obtained through the UNDP. Where such technical assistance is to be sought for any airport

development project, the specific requirements will need to be formulated and submitted to the national government for approval within the country's overall programme of development projects for which technical assistance is being requested. It should always be remembered, however, that the principal role of the UNDP is to provide expertise and not the funds required to finance airport construction or expansion.

Commercial sources

6.52 One of the simplest ways of dealing with costs payable in foreign funds is to place the responsibility for financing arrangements on foreign contractors and suppliers who stand to benefit directly from the project. In foreign commercial dealings, suppliers are often required to state, as part of their bid, the financing arrangements that they are prepared to offer, and for contractors to be given the responsibility for securing financing on the most favourable terms. When applied, such practices will not only help to reduce the financing problems encountered in airport projects, but will also enable the acceptability of bids to be evaluated from all perspectives, including financial. For the latter purpose, the bids should of course be required to quote supply prices separate from the financing charges involved, so that such charges may be compared with the cost of financing through alternative sources. Financing of costs in such a manner, however, poses a risk that needs to be guarded against, which is that during the process of selecting bids, a firm's financing capability may be allowed to assume an importance disproportionate to that of other considerations more basic to the project's successful execution.

6.53 Banks, investment houses and other traditional commercial credit institutions operating in the private sector of the country of a contractor providing equipment, supplies or services for the airport project may, of course, be approached directly for financing assistance. However, the cost and other terms of credit obtained in this manner are in general likely to be more onerous than those obtainable from the various public sources described in the preceding paragraphs. Commercial institutions of the kind referred to here exist in a variety of forms in different States, and for any particular State, those likely to assist with an airport project are probably best ascertained directly from the government concerned.

DEBT FINANCING

6.54 Financing airport infrastructure improvements has taken different paths around the world. In the United States, and more recently in Canada and Australia, the use of long-term debt through bonds to finance capital improvements has become a common practice. Short-term debt is often used to bridge periods of high interest rates or during a construction phase where the risk of rising interest cost is offset by the invested principal of the debt obligation. Airports with large construction programmes often keep a portion of their debt portfolio in short-term debt, balancing the risk of rising interest rates. In other parts of the world, airports have used bank loans or other government supported financing mechanisms to finance airport development. With the prospects of a growing number of airports moving toward partial or complete financial self-sufficiency, long- and short-term debt financing is increasingly viewed as an attractive alternative. Of course, the terms under which a debt obligation must be offered in order to be marketable, as well as the cost of the issue, will determine, in each instance, whether a debt obligation is more advantageous than other forms of financing.

6.55 The attractiveness of an airport debt obligation to investors in the financial markets can be gauged by the following three conventional indicators of investment quality:

- a) credit ratings — a simple system used by major investor services to grade bonds according to investment quality;
- b) interest cost — the interest paid by the airport to attract investors relative to what issuers of competing bonds pay; and

- c) tax-exemption (exemption from income taxes of a bond's purchase price and/or interest paid, for example) can frequently be an important factor when determining a debt obligation's attractiveness to a potential investor.

6.56 Debt obligations should not be planned and undertaken without the active involvement of experts because of the various and specific qualitative and quantitative judgements that need to be made, the thorough knowledge of the market required, the relatively large funds needed in an issuance, and the costs of the issuance. Financial advisors independent of the loan provider generally provide an issuer greater assurance of the risks and rewards of financing a project.

Credit rating

6.57 A credit rating is a measure of the history and ability to repay loan obligations. A number of firms specialize in evaluating new debt obligations and providing ongoing surveillance on outstanding debt of an entity. Credit rating agencies will review credit history and analyse an airport's historical financial statements. Rating agencies look at many aspects of an airport's financial and operational history and forecasts to rate the airport's ability to repay its debt obligations. Some of the criteria rating agencies evaluate are:

- a) financial strength;
- b) competitive position;
- c) airline diversity;
- d) control over facilities;
- e) geographic location;
- f) demographics;
- g) environmental issues; and
- h) management/ownership structure.

6.58 Financial ratios such as debt per passenger, debt service coverage, and cost per passenger can be used to evaluate the financial position of an airport. Operating ratios, such as gate utilization and relative use by individual air carriers, can be used to determine the competitive position of an airport. As the structure of debt obligations and governance has become more complex, rating agencies typically review the underlying legal documents of the financing while assessing a rating.

6.59 To provide a quick snapshot of the credit worthiness of a business entity such as an airport, credit rating agencies have developed various rating scales. Over the course of time, each rating agency has developed its own ranking system, but the purpose remains the same. For example, one leading credit rating company ranks long-term debt as shown in Table 6-1. Long-term debt judged to be of the highest quality with the smallest investment risk receives a rating of "triple A", followed by a rating of "double A" for debt deemed to be of high quality. Debt judged to be of upper medium quality receives a rating of "A", followed by a rating of "triple B". Ratings below this level are assigned to debt that is considered speculative or in danger of default.

6.60 The risk for short-term debt is limited to the length of time the debt is held by the investor, anywhere from one day to one year.

Table 6-1. Bond Credit Ratings Scale

Investment Grade	AAA AA A BBB	Highest quality High quality Upper medium grade Medium grade
Speculative Grade	BB B CCC	Speculative Speculative, low grade Danger of default
Default	D	Questionable value
<i>Individual company ratings will vary slightly and may indicate slight variance from the standard by using "+" or "-".</i>		

PRE-FUNDING OF PROJECTS THROUGH AIRPORT CHARGES

6.61 When more traditional sources of funds are not available, the use of pre-funding can be an acceptable means of financing airport development, under certain conditions. Guidelines for pre-funding of airport charges are contained in Appendix 4.

OTHER SOURCES

6.62 Some airports have found it advantageous to sell equity capital in the airport as a means to generate funds for airport development projects. In issuing these shares, the equity owners share in the profits as well as the risks of the operation of the airport.

6.63 Although relatively rare, another option to fund airport development is through a "build, operate and transfer" (BOT) arrangement. Under these arrangements, an enterprise undertakes the construction and operations of an airport facility, such as a terminal, for a predetermined number of years after which ownership is transferred to the airport.

6.64 Leasing rather than outright purchase of equipment may in some cases provide an attractive alternative where, for example, vehicles and machinery are involved. The benefit to the airport would be that it can have the use of the item(s) leased without having to incur a substantial financial outlay. Also, such use would normally take place sooner than if financing had to be sought in order to purchase the items. Leasing, moreover, does not significantly influence the overall debt the airport needs to serve, and leasing arrangements may not be subject to the same extensive and time-consuming approval processes frequently required for purchases.

6.65 On the negative side, the airport does not enjoy the benefit of ownership, including the addition to total airport assets. This may be relevant when financing for other airport investment projects is being sought and assets that can be considered security are to be identified. Of greater significance is that leasing tends, in the long run, to be more expensive to the lessee because the overhead and profit of the lessor must be covered by the lease payments. In some circumstances, however, there may be offsetting factors; for example, where the items leased are renewed frequently, the maintenance expenses incurred by the airport may be reduced. Tax laws in some States may also encourage leasing arrangements.

Appendix 1

MEASURING AIRPORT ECONOMIC PERFORMANCE

1. The key elements of a performance management process that could be applied to the economic and managerial aspects of an airport business are illustrated in Figure App 1-1. Detailed considerations are presented in the following pages.

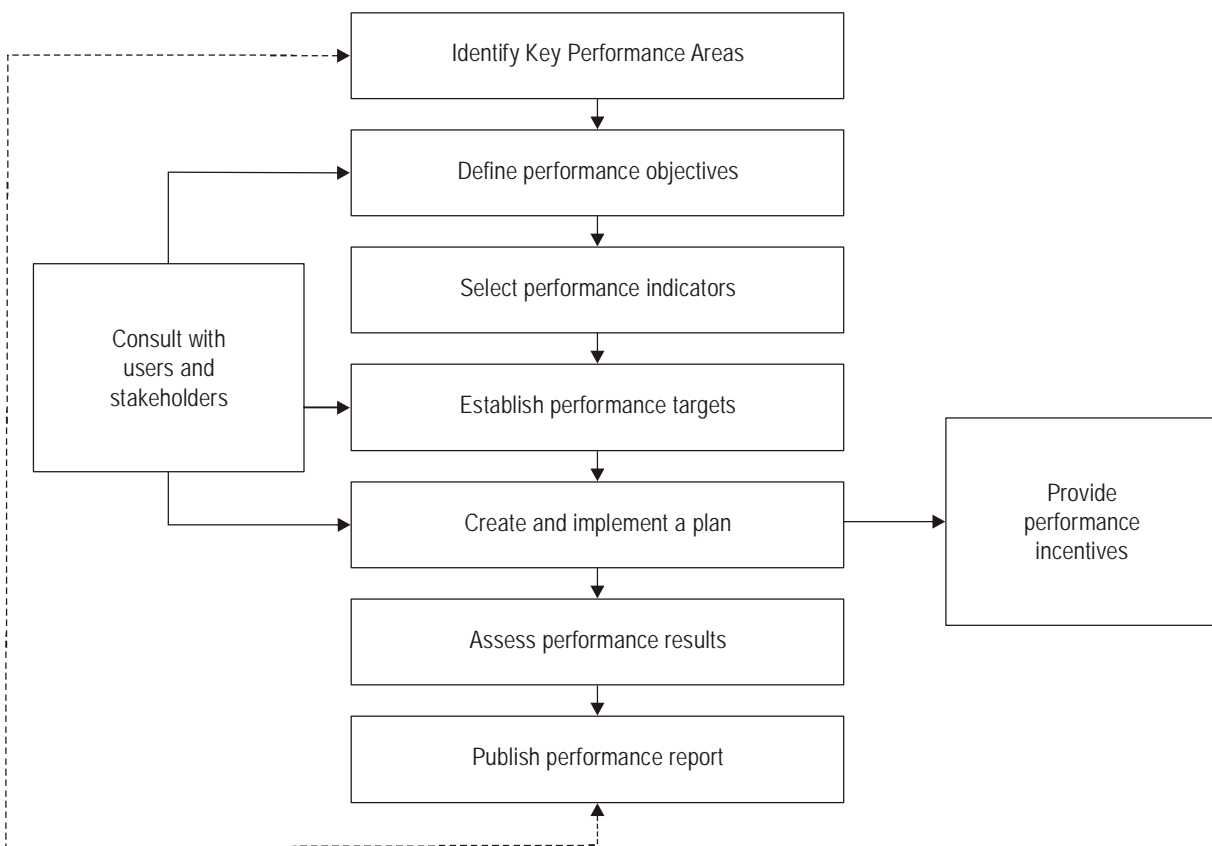


Figure App 1-1. Performance management process flow diagram for economic and managerial aspects of airports

Key performance areas and performance objectives

Identification of key performance areas (KPAs)

2. The starting point for developing a successful performance management process is the identification of Key Performance Areas (KPAs). For economic and managerial performance of airports, as recommended in ICAO's policies on charges in Doc 9082, Section I, paragraph 16 i), four KPAs should be emphasized, i.e. safety, quality of service, productivity and cost-effectiveness, it being understood that States may choose additional KPAs according to their objectives and particular circumstances.

3. For each KPA, a variety of indicators may be appropriate to consider, depending on the circumstances at each airport (see paragraphs 6-12 below). For example, it may be appropriate to focus on an area where a present or anticipated need for action and improvement has been identified.

Definition of performance objectives

4. A performance objective expresses a goal that improves on today's performance in a qualitative and focused way (for example, reduce the total number of delays). At least one objective for each of the selected KPAs should be defined. Selecting a few key, high-level, achievable objectives is a good rule to follow. Especially when the airport has little prior experience, it would be wise to start from a limited set of low-risk objectives.

5. Performance objectives are often inter-related and therefore there might be some trade-offs among them. When inter-relationships are identified, priorities should be established to resolve any conflicts between the objectives. In this regard, objectives related to safety should always be given the highest priority. Prioritization is supported by risk management, which helps to identify the risks that are most urgent or must be avoided, those that should be transferred or reduced, and those that are reasonable to retain. Also, the objectives at the different levels of the organization need to be linked to ensure overall coherence and to focus on priorities throughout the airport. This will foster teamwork and facilitate effective communication.

Performance indicators

Selection of performance indicators

6. Performance indicators are a tool for quantitatively measuring current, past and expected future performance, as well as the degree to which performance objectives are being met and should be met. The performance indicators, which represent the high-level knowledge about the performance of the airport, are often called Key Performance Indicators (KPIs). To be relevant, the indicators need to correctly reflect the intention of the associated performance objectives and thus should not be developed without having specific performance objectives in mind.

7. The number of performance indicators within each performance objective should be limited so as to ease the burden on monitoring (collecting and processing statistical data), but should be relevant and sufficient to allow for an ongoing review of performance. ICAO's policies on charges in Doc 9082, Section I, paragraph 16 ii), recommend that at least one relevant performance indicator is selected and reported for each of the KPAs selected.

Examples of indicators

8. A range of possible performance indicators for the four KPAs that are in use in various jurisdictions, which may be of use in developing a performance management system, are listed here below. When performance indicators

are not directly measured, they should be calculated from supporting metrics according to clearly defined formulas. Supporting metrics determine which data need to be collected to calculate values for the performance indicators.

Safety

9. Runway accidents and incursions are primary safety concerns for airports. A runway incursion is often defined as any occurrence at an airport involving an aircraft, vehicle, person or object on the ground that creates a collision hazard or results in a loss of separation with an aircraft taking off, intending to take off, landing, or intending to land. Potential indicators include:

- a) runway accidents per thousand operations;
- b) fatal runway accidents per thousand operations;
- c) accidents per thousand hours worked;
- d) runway incursions per thousand operations; and
- e) bird strikes per thousand operations.

Quality of service

10. Quality of service can be measured from aircraft operators' and from end-users' perspectives. Potential indicators include:

- a) airport average daily capacity (aircraft movements per day);
- b) number of delays by cause; and
- c) average delay per flight.

Passenger surveys on quality of airport services:

- d) time at security queues;
- e) percentage of time out-bound and in-bound baggage system available during hours of operation;
- f) ease of finding one's way;
- g) accuracy of screen information;
- h) cleanliness of washrooms; and
- i) overall passenger satisfaction.

Productivity

11. Productivity performance indicators look at the relationship of airport output (for example, number of aircraft movements, number of passengers and tonnage of cargo handled) to inputs (for example, employees, gates and airport facilities). Potential indicators include:

- a) aircraft movements per employee;
- b) aircraft movements per gate;
- c) passengers per employee; and
- d) tonnage of cargo per employee.

Cost-effectiveness

12. Cost-effectiveness performance indicators measure the financial cost (for example, total airport costs, facility costs and operating costs) of input required to produce an output (for example, aircraft movements, passengers and cargo handled). Potential indicators include:

- a) total costs per aircraft movement;
- b) total costs per passenger;
- c) total costs per 1 000 air traffic units; and
- d) staff costs as a percentage of turnover.

Data collection and processing

13. Good quality information is essential to the whole performance management process and hence design of performance management systems must take into account the quality of data collection systems in place or that can be developed. It is critical that robust information systems provide all the relevant data. However, data collection and processing (as well as storage and analysis) are not cost free and may require investment, which may at times be substantial. Airports should always take care that the benefits of data collecting and processing justify the cost incurred and that the effort and money spent on the collection and processing of data are actually used to improve the effectiveness of decision making. It should be noted that airports do not require sophisticated information systems in order to start performance measurement, but there are dangers in relying on simplistic partial productivity metrics. Management can subsequently add refinements as required.

14. For performance management to be effective and credible, it is important to adhere to certain guidelines on data collection and processing. First, the data used should be obtained from accurate sources. Second, the compilation of data should be thorough with clear definitions of services and units of measurements, and if estimation procedures such as sampling are used, they should be free from bias as much as possible. Third, consistent, transparent methodologies should be used to compile or estimate results. Without consistency, changes of performance cannot be meaningfully interpreted. (For example: is the observed change caused by a difference in measurement method or by a real difference in performance?)

Performance targets

Establishment of performance targets

15. Each performance indicator should, where practical, have a unique target value that needs to be reached or exceeded over a predetermined period in order to determine whether or not a performance objective has been fully achieved. Performance targets can be set as a function of time (i.e. the required speed to achieve the targets) and at

different aggregation levels (i.e. on an individual airport basis, on an airport system basis, or on an airport network basis). They can also vary by geographic area.

16. The airport should develop realistic and achievable performance targets. The determination of a baseline performance (i.e. an initial performance level) is a prerequisite to setting performance targets. The baseline performance should be established taking into account the past year's performance, peer group best performance (benchmarks), the State's (or economic oversight entity) expectations for performance, and specification of potential performance improvements and trade-offs. Knowledge gained through the baseline performance and modelling of future scenarios can provide guidance as to achievable target values for performance indicators.

17. Airports are complex environments where different components of the services to aircraft operators, passengers or forwarders are provided, in some cases through a variety of parties.¹ Service quality as a whole thus comprises a range of components. Where there is such a range of service providers, the relevant economic oversight authorities should consider whether targets should also be set for service providers other than the airport authority, and there should be an obligation on the service providers to comply with the targets thus set. Where it considers such targets suitable, the relevant economic oversight authorities should consider appropriate ways to ensure that such targets are met, which may include supporting the airport, as the entity with overall management control, to put in place measures to ensure that service providers comply. Economic oversight or regulatory structures should be supportive of such management activities to ensure that the interests of users, including end-users, are safeguarded.

18. Target setting depends on the nature of the objectives and other circumstances. In some cases, the performance targets may be dictated by external circumstances such as a cost reduction of a specified amount or percent in response to an industry downturn, or a budget cut imposed on a government-owned airport, or competitive pressures from rival airports. Overall, the targets should relate to the airport's ongoing efforts to improve over time. In this case, they may be more nuanced (for example, established as "meeting", "exceeding" or "far exceeding").

Planning how to achieve the targets

19. Achievement of performance targets may require new initiatives, while airports typically have limited resources. Prioritizing use of staff, financial and infrastructure resources is important to ensure achievement of the targets. In this respect, decision makers need to gain a good understanding of the strategic fit, the benefits, cost and feasibility of each initiative for performance improvement. To plan how to achieve the targets, it is suggested that an airport:

- a) determine what initiatives need to be taken to close current performance gaps, i.e. the shortfall between the baseline performance and its performance target;
- b) estimate the budget, staff and management time required for each initiative;
- c) prioritize each initiative to most efficiently close performance gaps;
- d) if there are a significant number of new initiatives, decide what non-critical work can be stopped or deferred to free the resources required to achieve the targets; and
- e) establish internal commitment to each initiative and collaboration with aircraft operators, end-users and other interested parties through consultation.

1. As many services critical to the airport's performance are outsourced to suppliers or undertaken by other providers, they are also often included in the performance measurement system.

Performance incentives

20. Incentives may be incorporated in the performance management process to help the achievement of the performance targets. It should be noted that incentives may apply to both airports and users, in particular in situations where the airport is not directly involved in a specific operation (for example, the handling of a flight by a third-party ground handler contracted by the airline, or by the airline itself). The following paragraphs focus on financial incentives for airports, whereas incentives for users are described in Chapter 4 of this manual in the context of differential charges.

21. There are a variety of potential incentives that airports can initiate on their own. Such incentives include, but are not limited to, the following:

- a) compensation of airport employees tied to meeting performance targets;
- b) share in cost saving/profit among airport staff for meeting performance targets; and
- c) service level agreements with users.

22. There are also potential incentives that States can establish for airports through some forms of economic oversight. The archetypal example is price cap regulation (see Chapter 1, Part C), under which performance targets for productivity and cost-effectiveness can be set through the introduction of an incentive “x” factor. Under a direct cap on charges, all traffic and cost risks are for the airport. Some other forms of regulation exist, which introduce a risk sharing mechanism between airports and users, where some risks are borne by the airport but some risks are borne by the users.

23. When introducing incentives for cost-reduction, States should ensure that safety will not be affected and that quality of service will be maintained at a satisfactory level in the interests of current and future users, including end-users.

24. It should be noted that financial incentives are not necessarily compatible with the full cost recovery principle, which means by definition that the airport should recover all its costs. Within the full cost recovery principle, any penalty applied to the airport would have to be considered as an extra cost, which would then have to be charged back to the users. As a consequence, any incentive effect would be lost. Conversely, any reward granted to the airport would have to be considered as surplus income, which would then have to be passed back on to the users through a decrease in charges if an adjustment mechanism is in place. Strict application of the full cost recovery principle in these circumstances would negate the purpose of such incentives for cost reduction.

Performance assessment and report*Assessment and applying results*

25. Performance assessment or measurement can start once the required data on performance indicators and targets, as well as actual performance results, are available and made at regular time intervals, at least annually. Performance assessment is to continuously keep track of performance and monitor whether progress is made in achieving performance objectives and targets.

26. The critical step of performance assessment is to develop a factual understanding of the reasons for (good or bad) performance, and explain these to high-level decision makers. To that effect, managers in charge should compare actual performance results against performance targets and analyse historical trends of performance results. They should look at the big picture (e.g. annual totals and averages, performance results) and, to the extent practicable, also examine details. If an airport is getting better-than-expected results, airport managers should determine what factors are causing improved performance and analyse whether those factors could be applied in other areas. If there

are deficiencies, cases where performance is not as expected despite the implementation of initiatives designed to achieve performance targets, managers should determine what the root cause of the problem is and how it can be improved. It is important to note that the purpose of assessment is not punitive, but is to assist in the achievement of planned performance improvements.

27. An integral part of the performance assessment is the formulation of recommendations, where this is possible and meaningful from the level of analysis undertaken. Recommendations will fall typically into the following categories (not exhaustive):

- a) related to the need to improve performance data collection;
- b) suggested initiatives aimed at closing identified performance gaps;
- c) suggestions to accelerate or delay performance improvements, based on anticipated evolution of traffic demand and predicted performance indicator trends; and
- d) recommendations of an organizational nature (set up a task force, define an action plan, etc.) with a view to actually starting the implementation of the above recommendations.

28. When inconsistencies between expectations and performance objectives and targets are found, recommendations may include the need to (re)define performance objectives and/or the need to set or change performance indicators and targets.

Performance comparisons and benchmarking

29. Airport performance is frequently discussed in relative terms, which can be internal or external.

30. Internal benchmarking (or self-benchmarking) means considering an airport's performance against itself over time. Within an individual airport, this might involve reviewing the average performance of facilities of a given type, or the performance of a specific facility, at a point in time. In the former case, individual facilities are compared to the average level of performance, while in the latter case changes in performance of a single facility over time are compared to its review period.

31. External benchmarking involves comparing airports with one another. The term "airport benchmarking" is generally taken to mean a process whereby it is intended to compare an airport with the "benchmark" — an estimate of what a best performer could reasonably be expected to achieve in a given set of circumstances, based on the achieved performance in a relevant and comparable group of airports. It is very important to note that great care must be taken when going through this exercise as comparisons of performance between airports are difficult and can often be misleading, particularly true if partial productivity indicators are being used. Measures used by one airport may not be comparable to measures in another airport, due to, inter alia, differences in the nature of the operating model, the operating environment and the stage in the airport investment cycle. Definitions, content, data collection, and accounting practices may also differ. The size and operational complexity of an airport is another factor to consider. To the extent that such comparisons are made, great caution should be exercised in interpreting the results, especially when the goals are to understand performance drivers and shortfalls, and thus establishing best practices.

32. If airport managers attempt to make performance comparisons with other airports, differences in operational, structural, commercial and organizational situations must be adequately reflected in the analysis. It is therefore of major importance to first create a level field for comparison by means of KPIs. For this reason, in order to gain a deeper understanding of the drivers of efficiency, airports often apply process level benchmarking of particular activities as this is a more useful approach to dealing with the data and business diversity issues than using partial productivity analysis. As mentioned in Chapter 4, Part A, paragraph 4.52 of this manual, comparisons between cost centres at different airports may be more feasible than comparing entire airports with each other.

33. Performance comparisons and benchmarks must be readily understandable at a decision-maker level and provide a basis for discussion and awareness across all the stakeholders. Such activities can:

- a) improve transparency of a performance management process;
- b) provide insight into the opportunities for the improvement of individual airports' performance (learning opportunities, setting performance targets);
- c) highlight best practices for delivering improvements in performance through the identification of highly efficient or high-quality service facilities and/or processes;
- d) support more effective regional coordination and planning, thereby rationalizing and avoiding duplication of efforts;
- e) support constructive dialogue with users and other interested parties; and
- f) provide global reach to expand the knowledge base.

Investment analysis

34. Performance assessment can help to support and justify investment decisions. As the investment decisions regarding changes to the airport become more complex, the need for thorough assessment of performance increases. The identification of best practices and associated levels of output and quality can help estimate the potential benefit or return that could be produced by investment in facilities and equipment, as well as the optimum size of investment.

Forecasting

35. Performance assessment results can be used to forecast needed capital and staff investments required for airport development. Forecasts are an important input to cost-benefit analyses associated with infrastructure development.

Information disclosure and performance report

36. Information disclosure is an important component of a performance management process for airports. While information disclosure is often an obligation imposed on a statutory monopoly as the counterpart of its monopoly rights and on a public company whose registered securities are traded in the market, it is also an essential component of a performance management process for all airports. Appropriate dissemination of performance information on a periodic basis can build public confidence in the airport and enables an effective dialogue between all interested parties (see Doc 9082, Section I, paragraph 16 iv)). It can also support the setting of objectives/targets and encourage ongoing thinking about what works to improve performance and what improvement opportunities can be pursued by offering a measurable means by which to ascertain how an airport is performing against its stated objectives and targets.

37. Performance reports normally describe the performance indicators established, the targets selected and the actual results achieved. ICAO's policies on charges in Doc 9082, Section I, paragraph 16 ii), recommend that, for each of the KPAs selected, at least one relevant performance indicator and its target should be reported. To assist readers with interpreting the report's findings, the derivation of the performance assessments used along with a discussion of how these assessments were applied is also incorporated either directly within the report or by reference to a public document. The level of detail of information to be provided depends on the circumstances. For example, if it has to be used for the purpose of a price cap regulation, then the information disclosure can be quite comprehensive.

38. The contents of performance reports need not be limited to just a review of the airport's past performance. They can, to the extent practicable, look forward, anticipating future capacity needs.

39. For transparency purposes, performance reports should be readily obtainable and be made available to all interested parties on a timely basis (for example, placing performance information in the public domain wherever it is possible or practicable to do so). Whether performance reports are subject to an independent audit is left to the discretion of the State.

Appendix 2

SERVICE LEVEL AGREEMENTS

Introduction and overview

1. Generic standards at airports should distinguish the service levels, for common use areas, that an airport has to deliver to all airlines equally in return for the charges they pay. In some States, generic service quality and performance benchmarks are woven into regulatory frameworks, which govern the relationship between airports and their users. Regulated prices are sometimes linked to quality standards and the delivery of certain levels of service. In circumstances where specified generic standards are not met, the regulation may provide for rebates for users.
2. Service level agreements (SLA) usually refer to bilateral agreements where individual airlines, or groups of airlines (e.g. alliances), request a service above the generic standards. An SLA can take many forms and in some cases may include (e.g. where an airline provides a particular service at an airport) commitments on the part of airlines to meet performance targets for services they deliver at airports.
3. An airport/airline(s) SLA is founded on the concept that airports and airlines are partners in serving the same customer — the airline passenger. The passenger experiences a joint airport/airline product that influences his or her opinion of the total travel experience. Dissatisfaction with any aspect of the airport experience may reflect unfavourably on the airport, the airline, or both, since the passenger is often unaware of the actual provider of a given service at an airport.
4. SLAs are viewed as a useful tool for defining the level of service and the terms of engagement or rules that will govern the airport/airline(s) relationship on the agreed service(s). Both airports and airlines would determine upfront which services and performance levels would be provided in exchange for the charges paid for their use, and decide how success or failure will be measured. Failure of the airport to meet the agreed service levels may mean earning less money or even a financial penalty. Surpassing expectations may earn the airport financial rewards.
5. SLAs can take many forms, from a simple non-binding understanding between airports and airlines to more complex documents, including contractual arrangements.

Objectives and characteristics of SLAs

6. An SLA should be thought of as a communications tool and conflict-resolution tool for gauging service effectiveness when evaluating service quality. It should not only prescribe service expectations, but also remedial action or measures to be taken when service levels do not meet expectations. SLAs can therefore contribute to the delivery of consistent, appropriate and timely service quality. An SLA can promote a robust service partnership by clarifying the key operational targets and delineating accountabilities within airport/airline(s) operations.
7. To be effective, an SLA should incorporate the following elements:

Service elements

- a description of the facilities and services to be provided;
- the conditions of service availability;

- the service standards;
- the cost versus the benefit of providing the service standard;
- the responsibilities of both parties; and
- service escalation or de-escalation procedures from the current service standard.

Management elements

- a description of how service effectiveness will be tracked;
- a description of how service effectiveness will be reported and addressed;
- a description of how service-related disagreements will be resolved; and
- a description of how the agreement will be reviewed and revised.

8. The following success factors are critical:

- a) Close consultation between the parties on both the service and management elements is required throughout the process of planning, establishing and implementing the agreement.
- b) Service standards are to be jointly agreed by the airport and the airline(s) involved. Where multiple airlines are engaged in the dialogue with the airport on an SLA, this might complicate consultations. Therefore, there must be airline consensus on the key service elements of the SLA in order to provide the airport operator with clear service expectations.
- c) The service standards described in an SLA should be carefully chosen to reflect performance in essential areas that are important to both airports and airlines and that have a demonstrable impact on the passenger in terms of service delivery.

Implementing SLAs

9. For implementing SLAs, the following conditions should be met:

- a) Airports and airlines must agree on the particular airport areas/services (refer to the list below) for which SLAs are to be implemented. Airlines must review and clarify their service needs and priorities; airports should examine their service history and determine the level of service they can provide. Furthermore, both airlines and airports should assess passenger service satisfaction so as to clearly understand passenger concerns and establish a baseline for assessing service levels.
- b) A precise definition of the service to be measured must be followed by adequate time to collect data on actual performance.
- c) Specific targets on service levels to be achieved must be agreed (e.g. the escalators should be working for passengers' use for 97 per cent of the operational day).
- d) The parties must agree on the timing of the period over which the SLA will be in place. This will depend on the complexity of, and level of difficulty involved, to improve a particular service to the agreed service level.
- e) A mechanism for measuring and tracking performance against targets should be developed jointly by the airport and the airlines (e.g. airports should provide management information systems for performance monitoring), and report to airlines on a monthly basis. Airports and airlines may need to consider jointly the cost implications of performance monitoring if sophisticated, costly systems are required in the monitoring process. For incentivized SLAs (see below), settlements of bonuses and penalties should be transacted with the airline(s) concerned.

- f) Once implemented, a mutually agreed calibration period will be needed to fine-tune the SLA.

Scenarios for SLAs

10. SLAs can take a variety of forms:

- a) “*One-way*” — reflecting commitments by an airport to deliver a particular quality of service to the airline(s); or
- b) “*Two-way*” — reflecting mutual commitments by both the airport and the airline(s) to deliver particular service quality levels to the other parties;
- c) *Non-financially incentivized* — these are voluntary commitments by an airport, or airline(s), to use their best endeavours to deliver a service quality level at the airport, but without any financial or legal implications if that level is not achieved; or
- d) *Financially incentivized* — these can be partially binding SLAs or fully binding SLAs. Financial capping and collars should apply to penalties and to rewards, to limit financial exposure of both airports and airlines. In this context, it should be clear that airlines and airports are seeking a mutually agreed desired level of performance, and not solely attempting to save money or to increase profits, respectively. However, airlines should be prepared to pay more for above average performance where it adds value.

Non-exhaustive list of airport facilities and services that could be subject to SLAs

11. Facilities and services that could be subject to SLAs could include, for example, the following:

Airside

- fixed electrical ground power serviceability;
- aircraft parking (dedicated) stand availability; and/or
- remote coaching performance.

Passenger terminals

- people mover systems serviceability (escalators, lifts, passenger conveyors, transit trains and buses);
- transfers standards — coaching performance, security queuing;
- baggage systems (outbound, transfer, inbound);
- queuing standards: security;
- ease of finding way around terminals and flight information;
- departure and gate lounges — quality of services (e.g. seat availability); and/or
- cleanliness of terminal facilities.

Conclusion

12. The regulatory environment in which an airport operates can have a bearing on the implementation of SLAs, for example, on areas/services where SLAs could be applied.

13. SLAs can be an innovative and constructive mechanism for managing service level expectations, but also for improving the quality of service offered at an airport. Such a mechanism will be influenced by local circumstances, including the degree of congestion at the airport, both landside and airside, the number of airlines seeking service quality commitments, and the life cycle of the airport facility.

14. Above all, in the aviation industry, which is subject to cyclical changes in economic performance, SLAs can embody the concept that airport services are delivered through a partnership between airports and airlines, and establish an element of transparency and stability in a sometimes adversarial relationship.

Appendix 3

CALCULATION OF THE WEIGHTED AVERAGE COST OF CAPITAL (WACC)

CAPITAL ASSET PRICING MODEL (CAPM)

1. Cost of equity

1.1 The cost of common equity is an estimate of a reasonable rate of return on the shareholders' or owners' investment. It is normally estimated by using a market-driven model called the "Capital Asset Pricing Model" (CAPM), which attempts to measure the relationship between the risk of a share of stock and its return.¹

1.2 The CAPM formula states that an organization's cost of capital is equal to the risk-free rate of return (typically the yield on a ten-year treasury bond) plus a premium to reflect the extra risk of the investment or its "Beta". The exact rate of return on equity will depend on perception of risk ("Beta" or "β") on the part of the equity holders.

1.3 The formula could be expressed algebraically as follows:

$$\text{cost of equity} = R_f + [(R_m - R_f) \times \beta]$$

where R_f and R_m represent risk-free rate and market rate, and "β" represents the industry or company risk. A Government Bond rate with a ten-year yield spread is considered as a good representation of a risk-free rate. The formula may have to be amended to meet the requirements of various structures of airport ownership.

1.4 The average market return obtained on share indices like FTSE, DAX, S&P 500, etc., represents the market return in a particular State. The difference between the market return and the risk-free return represents the "Market Risk Premium". The market risk premium is then adjusted to the industry premium by multiplying by the industry Beta.

2. Cost of debt

2.1 Determining the cost of debt is relatively straightforward. This cost is represented by the weighted rates of interest paid by the airport on its debt instruments. The rate of interest of debt will depend on market interest rate plus a premium based on the conception of risk of the airport on the part of lenders. Therefore the cost of debt should reflect the cost of actual borrowing (i.e. interest rates attached to the bonds and loans) plus any contributory risk factors "β" attached to the debt (normally risk of default).

1. Cost of equity capital is a long-term, minimum hurdle rate. The actual recovery of costs in any given year may need to include a cost of equity capital above the CAPM calculation taking into account market fluctuations such that the actual cost of equity capital is achieved over time.

2.2 The beta of debt could be close to zero for large organizations and in particular low-risk organizations. However it can be high for organizations with poor credit rating. Airports could have different types of debt like long-term bonds or loans, pension reserves or short-term debt. The weighted average rates of interest paid on these different debts should be taken as the representative rate.

3. Weighted Average Cost of Capital

3.1 The Weighted Average Cost of Capital (WACC) would therefore depend on the financing structure of the airport, that is, the proportion of equity and debt in its total capital as:

$$\text{cost of capital} = \text{cost of equity} + \text{cost of debt}$$

or

$$\text{return on capital} = \text{return on equity} \times \frac{\text{equity}}{\text{debt} + \text{equity}} + \text{return on debt} \times \frac{\text{debt}}{\text{debt} + \text{equity}}$$

3.2 As discussed above, the calculation of the WACC is a multiple step process. First, the cost of equity is calculated; second, the capital structure of the airport is identified (i.e. percent of the airport financed by debt vs. equity); and third, the weighted average cost is calculated.

3.3 The following is an example of how to calculate the WACC². This example is illustrative and is not intended to serve as a proxy value for estimating the WACC for any particular service provider. Consider the following parameters:

- | | |
|--|------|
| a) Return on ten-year Government Bond: | 2.0% |
| b) Average market rate of return: | 7.0% |
| c) β industry risk: | 0.55 |

3.4 First, the cost of equity is calculated. Based on the formula noted above, the cost of equity is calculated as follows:

$$\text{cost of equity} = R_f + [(R_m - R_f) \times \beta] = 0.02 + [(0.07 - 0.02) \times 0.55] = 0.0475 \text{ (or 4.75\%)}$$

3.5 Second, the capital structure of the airport is identified. For the purpose of this example, assume the following capital structure:

- | | | |
|--------------------|-------------|------|
| a) Long-term debt: | € 1,400,000 | 40% |
| b) Equity: | € 2,100,000 | 60% |
| c) Total: | € 3,500,000 | 100% |

3.6 Third, the WACC can be calculated according to the following formula:

$$\text{WACC} = (4.75 \times 0.60) + (2.0 \times 0.40) = \mathbf{3.65\%}$$

2. The calculation of the cost of capital should be either in nominal or real terms, but not a combination of both.

Appendix 4

PRE-FUNDING OF CAPITAL PROJECTS THROUGH CHARGES

INTRODUCTION

1. ICAO's *Policies on Charges for Airports and Air Navigation Services* (Doc 9082) and this manual espouse the principle of cost-relatedness in establishing user charges. Under this principle, the development of airports is normally financed using funds obtained from sponsoring States, retained earnings of autonomous airport entities, commercial loans, or the issue of debt securities. Once facilities are completed and commissioned, their capital cost is generally recovered by including associated amortization or depreciation costs in the cost basis for user charges. Thus, aircraft operators are only charged the cost of services actually provided.

2. However, the possible use of pre-funding for the development of airports in specific circumstances and subject to detailed safeguards is recognized in Doc 9082, Section I, paragraph 23. The safeguards include effective and transparent economic oversight of user charges and the related provision of services, including performance management; comprehensive and transparent accounting; substantive consultation; and application of charges for a limited time period. Pre-funding should only be employed where aircraft operators will benefit from the provision of needed, improved, or lower cost service, which could not otherwise be provided because regular sources of financing are insufficient and it is not possible or it is too costly to access capital markets. Management and accounting safeguards should: clearly identify links between pre-funding charges and project costs; link charges to users who ultimately benefit from the project; encourage advance consultation; and ensure that transparent and generally accepted accounting principles are implemented for the project in question. Further detail on pre-funding criteria and procedures are outlined below.

Economic oversight

3. Part C of Chapter 1 provides guidance on the need for, and possible forms of, economic oversight. Of particular relevance, when pre-funding is contemplated, is the need to protect users against overcharging, which could result from abuse of any dominant position that the providers may have, as well as the provision of dispute resolution mechanisms.

Criteria for capital projects

4. Airport management should be able to demonstrate clearly to aircraft operators and economic oversight authorities the advantages of pre-funding over traditional capital funding techniques. Pre-funding should be considered only for capital expansion projects that have reached a substantial level of maturity in the capital planning process, including project justification, project scope, proposed implementation schedule (including project start and completion dates), cost estimates, and required project approval levels. In the case of developing countries, consideration could also be given to funding large-scale capital refurbishment projects. Pre-funding should not be used for the establishment of a capital sinking fund for undefined projects as current ICAO cost-recovery policies allow for limited capital reserves, nor should pre-funding pay for operating costs.

5. Pre-funding may be used to pay capital project related development and implementation costs including preparation of final engineering and architectural project plans, contracting and administration costs (including

reasonable costs related to the collection of the pre-funding charge), construction, equipment purchases, environmental costs, and construction site security costs. When it is possible to finance some, but not all project development costs, pre-funding should not be used as the sole source for financing the totality of the project. Rather, airport management needs to consider what percentage of total project costs reflects an acceptable balance between the benefits and risks of undertaking a pre-funding initiative and should consult with users, and if appropriate, the economic oversight authority.

Consultation with users

6. Airports contemplating the use of pre-funding should consult with aircraft operators, and, if appropriate, authorities responsible for economic oversight, in advance of project initiation. The requirement for comprehensive consultation prior to the establishment and subsequent operation of a pre-funding account is both a challenge and the key to the success of any pre-funding initiative. The objective of a consultation is to illustrate to users the financial benefits derived through pre-funding, the respective share on a multi-year basis of each of the financing methods planned for the project, and the opportunity to explore other financing solutions. Ideally, consultations should be able to clearly articulate the benefits of a proposed pre-funding initiative to users. The introduction of a pre-funding charge should not be undertaken until transparent and substantive consultations with airport users are completed and the approvals prescribed within the economic oversight regimes of individual States are received. Appropriate consultations and notice provisions should be undertaken in any proposed revisions to pre-funding charges, including a change in the level of the charge, or a material change in the scope, timing or cost of the designated project.

Accounting for revenues and expenses related to pre-funding of projects

7. Comprehensive and transparent accounting for the pre-funding of capital projects is a necessary safeguard to ensure that revenues derived from pre-funding charges are being collected and allocated against a specific project in a manner consistent with the pre-funding framework, the cost-recovery methodology of the airport operator, and the economic oversight framework of the State, wherever applicable. The objective is to ensure that no abuses are committed resulting from any dominant position that an airport may have, and that all available measures are taken to lead airports to improved productivity.

8. A dedicated or separate pre-funding account should be established for the project in question. This will result in greater transparency regarding the degree to which project-specific charges are being allocated to airport users and the crediting and debiting of the account in relation to the project implementation schedule. It will also enable management to demonstrate clearly the cessation of charges to users once the need for the pre-funding account is no longer required. Transparent accounting, in conjunction with comprehensive consultation with users, will serve as a means of ensuring that users will not be double-charged for the facility under traditional charging regimes once the facility becomes operational.

9. Any interest accrued in the course of establishment of a pre-funding account should be applied to offset or reduce the costs of the specific project for which the account was established.

10. Charges collected through pre-funding should be evaluated commensurate with Chapter 4 but without taking into account, in the cost basis, the amortization of the pre-funded share of the investments.

11. Where applicable, the principal elements of a pre-funding framework, and a summary of the revenue and expenditure transactions in a fiscal year, should be reflected in annual reports or other public accountability documentation of the airport. The dedicated, pre-funding account should also be subject to the provider's audited financial statements for the fiscal year and as part of any specific financial or performance auditing of the specific capital project in question. This could also include any documentation prepared by airport management that supported the benefits of implementing a pre-funding strategy over traditional funding techniques prior to the introduction of the pre-funding charge.

Sources of pre-funding charges

12. Pre-funding frameworks should reflect the broader ICAO principle of cost-relatedness: charges should not be set at levels that would, based on reasonable and prudent projections, generate revenues that exceed cost-based funding requirements. Pre-funding sources could include a surcharge on existing aviation charges or the introduction of a new, but project-specific, aviation charge.

13. Airport operators could also employ a mixed pre-funding strategy whereby new charges could be levied on different users of the airport in a manner commensurate with the costs and benefits assumed by the respective users upon the completion of the project, consistent with the charging methodologies of the airport operator. This would provide airports with greater flexibility to respond to their unique operating environment. Other external sources of funding such as grants, contributions or other subsidies (both principal and interest) should be considered in the overall funding strategy.

14. Pre-funding charges should be consistent with, and applied within, the economic oversight framework of individual States, and should be in accordance with the airport operator's accepted methodology for determining user charges. A pre-funding framework would also have to be developed within the context and possible limitations imposed by any existing cost-recovery agreements with airport users. The pre-funding framework should also recognize those segments of the user population that are exempted from user charges.

Timing and restrictions

15. The commencement of a pre-funding period is linked to the complexity of the project, the financial maturity of the service provider undertaking the project, the portion of the project that pre-funding is eligible to fund, and other sources of funding available to management.

16. A pre-funding framework should include provisions regarding the cessation of pre-funding charges if a project has not commenced within a certain time frame, is halted for a defined period of time, is completed, or if total project funding requirements are met when all revenue sources are considered.

Collection of pre-funding charges

17. Depending on the form of the pre-funding charge (surcharge on an existing aviation charge or new project-specific aviation charge), the collection aspects of this charge will be of the same nature as those described in Part I of Chapter 4. In view of potential facilitation problems, and also for better acceptance by the travelling public, solutions that do not create additional queuing and delays at airports should be considered, whenever possible.

Appendix 5

BILATERAL AND INTERNATIONAL SOURCES OF FINANCING

Part A — Bilateral development agencies

Belgium	Belgian Development Cooperation (BTC) — Brussels
Canada	Canadian International Development Agency (CIDA) — Gatineau, Quebec
Denmark	Danish International Development Agency (DANIDA) — Copenhagen
France	Agence Française de Développement (AFD) — Paris
Germany	Federal Ministry for Economic Cooperation and Development (BMZ) — Bonn Kreditanstalt für Wiederaufbau (KfW) — Frankfurt Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) — Eschborn (Frankfurt)
Italy	Direzione Generale per la Cooperazione allo Sviluppo (DGCS) — Rome
Japan	Japan Bank for International Cooperation (JBIC) — Tokyo
Netherlands	Ministry of Foreign Affairs — The Hague
Norway	Norwegian Agency for Development Cooperation (Norad) — Oslo
Russian Federation ...	Ministry of Economic Development and Trade — Moscow
Spain	Agencia Española de Cooperación Internacional (AECI) — Madrid
Sweden	Swedish International Development Cooperation Agency (SIDA) — Stockholm
United States	United States Agency for International Development (USAID) — Washington, D.C.

Part B — Development banks and funds

African Development Bank Group (AfDB)	Abidjan, Côte d'Ivoire
Andean Development Corporation (CAF)	Caracas, Venezuela
Asian Development Bank (ADB)	Manila, Philippines
Black Sea Trade and Development Bank (BSTDB)	Thessaloniki, Greece

Caribbean Development Bank (CDB).....	St. Michael, Barbados
Central American Bank for Economic Integration (CABEI).....	Tegucigalpa, Honduras
East African Development Bank (EADB).....	Kampala, Uganda
Eastern and Southern African Trade and Development Bank (PTA Bank).....	Nairobi, Kenya
European Bank for Reconstruction and Development (EBRD)	London, United Kingdom
European Development Fund (EDF)	Brussels, Belgium
European Investment Bank (EIB)	Luxembourg, Luxembourg
Financial Fund for the Development of the River Plate Basin (FONPLATA).....	Sucre, Bolivia
Fund for Cooperation, Compensation and Development (ECOWAS Fund).....	Lome, Togo
Inter-American Development Bank (IDB)	Washington, D.C., USA
International Bank for Reconstruction and Development (IBRD).....	Washington, D.C., USA
International Development Association (IDA)	Washington, D.C., USA
International Finance Corporation (IFC)	Washington, D.C., USA
Nordic Development Fund (NF).....	Helsinki, Finland
Nordic Investment Bank (NIB)	Helsinki, Finland
Organization of Petroleum Exporting Countries (OPEC) Fund for International Development (OFID).....	Vienna, Austria

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In addition, the following institutions are established and financed essentially by Arab States:

Abu Dhabi Fund for Development (ADFD)	Abu Dhabi, UAE
Arab Bank for Economic Development in Africa (BADEA)	Khartoum, Sudan
Arab Fund for Economic and Social Development (AFESD).....	Kuwait City, Kuwait
Arab Monetary Fund (AMF).....	Abu Dhabi, UAE
Islamic Development Bank Group (IDB).....	Jeddah, Saudi Arabia
Kuwait Fund for Arab Economic Development (KFAED).....	Kuwait City, Kuwait
Saudi Fund for Development (SFD)	Riyadh, Saudi Arabia

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