

**GOVERNMENT OF THE REPUBLIC OF NAMIBIA
MINISTRY OF WORKS, TRANSPORT & COMMUNICATION
DEPARTMENT OF TRANSPORT
NATIONAL TRANSPORTATION MASTER PLAN STUDY**

Implementation and Funding of the National Aerodrome Network

FINAL REPORT

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LIST OF TERMINOLOGY AND ABBREVIATIONS

Aerodrome	a defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure or surface movement of aircraft
Airport	an aerodrome designated as a point of entry and where formalities incident to customs, immigration and health can be carried out
ATM	Aircraft takeoff and landing movements
CAA	Civil Aviation Authority
Contractor	body being established under MWTC 2000 to carry out road construction and maintenance
DCA	Directorate Civil Aviation (DoT)
DoT	Department of Transport
DoW	Department of Works
DTIMC	Directorate Transportation Infrastructure Maintenance and Construction (DoT)
DPTM	Directorate Planning and Transport Management (DoT)
ICAO	International Civil Aviation Organization
KM International/VKE	Principal Consultant conducting the NTMPS
Landing strip	an aerodrome with very basic facilities for the arrival and departure of aircraft, mostly consisting of a cleared runway strip
Licence	issued by the DCA in respect of an aerodrome in terms of which the licence holder must ensure that the aerodrome and facilities provided comply with certain minimum requirements, to ensure adherence to safety standards
MoF	Ministry of Finance
MTOW	Maximum take-off weight
MWTC	Ministry of Works, Transport and Communication
MWTC 2000	Project to restructure MWTC by the year 2000
NACo	Namibian Airports Company
NOTAM	Notice to Airmen - advising of temporary changes to published information
NTMPS	National Transportation Master Plan Study for Namibia

NTMPS
National Aerodrome Network Implementation

PAX (Aircraft) passengers

Roads Authority body established under MWTC 2000 to plan and oversee the national roads network

1. INTRODUCTION

1.1 Background

The aerodrome sections of the National Transportation Master Plan Study (NTMPS) require the consultants to define a national aerodrome network (an 'aerodromes master plan') and to address the institutional re-organisation of MWTC required to conduct and oversee the effective planning, operation and funding of such a network in future. Specifically, the NTMPS Terms of Reference include the following tasks:

- Task 5: review current methods, instruments and procedures for the development, planning, management, maintenance and funding of aerodromes;
- Task 14: identify the aerodromes under the responsibility of MWTC, including standards and procedures for their operations;
- Task 15: implement procedures for the operations of aerodromes under the MWTC; and
- Task 22: formulate a master plan for the development of road network, rail network and airports for the period up to 2012.

These tasks were carried out in four stages:

- *Status Quo.* An assessment was made of the current aerodrome network as regards ownership, facilities, traffic and operating and funding principles. The results of this analysis are contained in the report titled '*Situational Assessment of Namibian Aerodromes*'. This report also identified various matters of relevance to future work under the NTMPS Terms of Reference.
- *Desired network.* In '*Policy Principles Underlying an Aerodrome Master Plan for Namibia*', policy principles were developed for the definition of a national aerodrome network.

These principles were subsequently applied in the report titled '*Framework for a National Aerodrome Master Plan*', further refined in consultation with interest groups at a workshop on the national aerodrome network (recorded in '*Report on National Aerodrome Network Workshop*'). They were also presented in a Memorandum to Cabinet, and subsequently approved.

- *Standards of Network Aerodromes.* As recommended in the *Framework Report*, the network was divided into classes (levels or categories) of aerodromes. The required standards of facilities, operations and maintenance required for 'B' and 'C' classes were developed in the report titled '*Aerodrome Standards Report*'. A comparison of the existing and required facilities still needs to be carried out.
- *Implementation and Funding.* Two draft reports¹ were previously presented which addressed the actions required to implement the proposed network, as well as the financial and funding implications. Since these reports both deal with institutional aspects of the network, they have been integrated into a single report (this report).

1.2 Purpose of this Document

This report addresses two main topics. Firstly, it recapitulates the nature and extent of the network, including an appraisal of the funding requirements of the network. An aspect which is explored in more depth than previously is the impact of the application of the so-called Okongo principle (which includes aerodromes in the network not because they are identified in terms of the policy principles, but due to the investment previously undertaken in them - see section 2.3). Secondly, it looks forward by proposing institutional mechanisms and an assignment of responsibilities to manage the network in future. The specific focus areas here are the responsibility to manage and how to fund the network. Finally, these proposals are consolidated into a proposed implementation plan.

¹ 'Funding the National Aerodrome Network' (November 1997) and 'National Aerodrome Network Implementation Report' (November 1997)

1.3 Document Layout

Apart from this introductory chapter which sketches the background to the report, the report covers the following:

- Chapter 2 recapitulates the scope of the national aerodrome network.
- In chapter 3, an estimate of the cost of the network is presented, together with proposals on how such costs should be allocated to stakeholders.
- Chapter 4 focuses on potential mechanisms to charge users for their share of the network costs.
- Chapter 5 consolidates where responsibilities lie for each of planning, management and operation, and funding of the network.
- Chapter 6 presents an implementation plan, and also lists specific actions which could start immediately.
- The report is concluded in chapter 7 with recommendations.

Four annexures are attached. Annexure A reflects the costs of the different classes of aerodromes. Annexure B presents the contents of the proposed aerodromes register. Annexure C discusses the relative merits of selecting different network management agents. Annexure D provides a checklist for a contract with aerodrome operating agents.

2. NATIONAL AERODROME NETWORK

2.1 Introduction

The purpose of this chapter is to briefly restate the main characteristics of the national aerodrome network.

2.2 The Scope of the Network

Previously, a set of criteria was defined according to which aerodromes across Namibia were selected for inclusion in the network. In brief, these criteria were:

- International and strategic considerations, which require there to be at least one point of intercontinental access to Namibia and at least two further points of access by air to neighbouring states (so-called regional access);
- Economic considerations, according to which a further two points of access were identified;
- Equity and regional development considerations, which indicate that there should be an aerodrome at each regional capital and so-called remote access aerodromes at a further 23 locations to ensure an adequate coverage of the country;
- Aviation considerations, which mean that there should be a domestic hub with associated aviation support services; and
- The so-called Okongo principle which determines that an existing facility may be in a sufficiently developed condition not to be discarded even though it does not get selected based on the above criteria.

These criteria were applied hierarchically in the same order as presented above. This implies that a location which is selected, for example, on the basis of being an access point to neighbouring states, does then not need to be selected again based on a lower ranking criterion (e.g. if it also is an economic centre). Based on these considerations, 41 aerodromes (excluding 'Okongo' aerodromes) were included in the national network.

It was established that there should be four classes of aerodromes:

- **Class A** : Aerodrome capable of handling large jet aircraft and a high volume of traffic, and facilities to handle international flights and passengers;
- **Class B** : Infrastructure capable of handling smaller (commuter type) aircraft and volumes, not necessarily a point of entry;
- **Class C** : Minimum facility for access by air, implying a non-licensed facility with rudimentary infrastructure to handle only small aircraft on an occasional basis;
- **Class D** : Aerodrome retained according to the Okongo principle

Classes of aerodrome were distinguished based on a so-called Central Place Study (CPS) as applied by the Delimitation Commission in drawing up electoral boundaries. The CPS ranks locations according to an index based on a wide range of factors, such as the population, public services, employment and economic output.

The following table indicates the scope of the resultant network (as presented to Cabinet):

No.	Criterion ¹	Location	Owner ²	Class ³	Licence? ⁴
1	Intercontinental. Access	Windhoek	NACo	A	Yes
2	Domestic hub	Eros	NACo	A	Yes
3	Regional access	Walvis Bay	NACo	A	Yes
4	Region HQ	Swakopmund	Munic	C ⁵	Yes
5	Region HQ	Oshakati	MWTC	C ⁵	
6	Region HQ	Rundu	NACo	B	Yes
7	Region HQ	Keetmanshoop	NACo	B	Yes
8	Region HQ	Katima Mulilo	NACo	B	Yes
9	Economic centre	Lüderitz	NACo	B	Yes
10	Region HQ	Ondangwa	NACo	B	Yes
11	Region HQ	Tsumeb	Pvte	B	Yes
12	Region HQ	Otjiwarongo	Munic	B	

(table continued)

NTMPS
National Aerodrome Network Implementation

No.	Criterion	Location	Owner	Class	Licence? ⁴
13	Region HQ	Gobabis	MWTC	C	Yes
14	Economic centre	Oranjemund	Pvte	C	Yes
15	Region HQ	Mariental	MWTC	C	Yes
16	Remote access	Khorixas	Munic	C	
17	Remote access	Karibib ⁶	MWTC	C	
18	Remote access	Karasburg	Munic	C	
19	Region HQ	Opuwo	MWTC	C	
20	Remote access	Maltahöhe	Munic	C	
21	Remote access	Bethanie	Munic	C	
22	Remote access	Okakarara	MWTC	C	
23	Region HQ	Eenhana	MWTC	C	
24	Remote access	Otjinene	MWTC	C	
25	Remote access	Kamanjab	MWTC	C	
26	Remote access	Aroab	Munic	C	
27	Remote access	Aminuis	MWTC	C	
28	Remote access	Rosh Pinah	Pvte	C	
29	Region HQ	Uutapi	MWTC	C	
30	Remote access	Sesfontein	MWTC	C	
31	Remote access	Otjituuo	MWTC	C	
32	Remote access	Tsumkwe	MWTC	C	
33	Remote access	Bagani	MWTC	C	
34	Remote access	Nepara	MWTC	C	
35	Remote access	Okongwati	MWTC	C	
36	Remote access	Terrace Bay	ME&T	C	
37	Remote access	Okaukuejo	ME&T	C	
38	Remote access	Rietfontein	Pvte	C	
39	Remote access	Zais	ME&T	C	
40	Remote access	Sesriem	ME&T	C	
41	Remote access	Tweervieren	Pvte	C	

Notes on the table :

1. Criterion: Criterion for the identification of a network aerodrome
2. Owner: NACo = Namibian Airports Company
MWTC = Ministry of Works, Transport & Communication
Pvte = Private owner
Munic = Municipality, town or village
ME&T = Ministry of Environment & Tourism
3. Class: Standard of facility
4. License: Current holders of DCA aerodrome licence
5. Would have been B, but in close proximity to NACo aerodromes
6. Negotiations on the future of Karibib have resulted in it being earmarked for operation by the Ministry of Defence. Grootfontein has similarly been earmarked. However, Grootfontein is not part of the network due to its proximity to Tsumeb.

All 'A' aerodromes, and all 'B' aerodromes with the exception of two, will be transferred to the Namibian Airports Company. The remaining two 'Bs' are either privately owned (Tsumeb) or owned by a municipality (Otjiwarongo). Of the base-line scenario 31 'C' aerodromes, 15 are owned by local authorities, the Ministry of Environment & Tourism, or private owners, and 16 by the MWTC.

2.3 The 'Okongo' Principle

One of the policy principles (criteria) for the definition of the national network reads that: *'The present physical state and maintenance requirements of a State-owned facility may be sufficiently reasonable for it to be retained'*. In discussions on the network, this criterion became known as the Okongo principle (since the aerodrome at Okongo is one of the aerodromes likely to be affected under this principle).

In discussions with stakeholders, this principle was refined to mean that the identified aerodromes would not be discarded in the same way as those that do not qualify for the network. They then effectively form their own class - a D class. Such aerodromes would only receive periodic attention (once every five years, in comparison to the C-class aerodromes which are to be attended to annually).

Following the D-class approach, the 17 aerodromes which were identified in consultation with the MWTC as candidates for inclusion under the Okongo principle are presented on next page:

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No.	Criterion	Location	Owner	Class
1	Okongo Principle	Outjo	MWTC	D
2	Okongo Principle	Okongo	MWTC	D
3	Okongo Principle	Omega	MWTC	D
4	Okongo Principle	Operet	MWTC	D
5	Okongo Principle	Ruacana	MWTC	D
6	Okongo Principle	Ehomba	MWTC	D
7	Okongo Principle	Epupa	MWTC	D
8	Okongo Principle	Gochas	MWTC	D
9	Okongo Principle	Mangetti Dune	MWTC	D
10	Okongo Principle	Maroela Boom/Nurugas	MWTC	D
11	Okongo Principle	Noordoewer	MWTC	D
12	Okongo Principle	Okakarara	MWTC	D
13	Okongo Principle	Ongandjera	MWTC	D
14	Okongo Principle	Orupembe	MWTC	D
15	Okongo Principle	Otjinene	MWTC	D
16	Okongo Principle	Sesfontein	MWTC	D
17	Okongo Principle	Talismanis	MWTC	D

3. NETWORK COSTS

3.1 Introduction

This chapter provides background on typical costs associated with aerodromes and presents findings on what the likely extent of such costs are for the Namibian aerodrome network.

3.2 Aerodrome Network Costs

The costs associated with the aerodrome network include the following:

- *Development and rehabilitation costs.* These are the costs of construction, extension and upgrading of capacity, and costs incurred to ensure safety. Among other, they include the construction of runways, buildings and perimeter fencing. These costs are once-off expenditures. Since the definition of the national network is aimed at consolidating the portfolio of aerodromes, it is unlikely that it will lead to any major construction of or at aerodromes. However, any such costs can only be determined once a network audit has been conducted (i.e. a comparison of the actual conditions with the minimum facilities defined in the 'Aerodrome Standards' report). These costs are therefore not dealt with further in this report, save to note that there are international precedents for aerodrome development funds (e.g. the USA) stocked by means of user levies. Again, such requirements will be known once an aerodrome audit has been performed.
- *Operational and maintenance costs.* These include current expenditures to maintain aerodromes open and serviceable, such as cleaning and repairs, and grounds keeping.
- *Administration and inspection costs.* This category relates to the cost of planning and overseeing the network, including the cost of monitoring compliance with certain minimum criteria. It also potentially includes the cost of collecting aerodrome charges and financial record-keeping.

Most of these costs (possibly with the exception of direct costs related to inspections) are peripheral expenses for an already existing planning and regulating body (MWTC), and their extent will depend on the future composition and nature of MWTC and its agencies (such as, potentially, a Civil Aviation Authority). These costs are not dealt with further here, save to say that there is no reason why the beneficiaries of aviation regulation (i.e. the users) should not also contribute at least in part to the cost of the regulating agency's work.

The focus as regards network costs in this report is therefore on operational expenses. The terms 'operation and 'maintenance' are used interchangeably, since for the non-Company aerodromes (and one or two exceptions), operation in essence implies the maintenance of a facility.

Operational costs may be fixed or variable. Fixed costs refer to those that do not change as the volume of use changes, while variable costs do change. Operational costs are variable in as far as they fluctuate with demand, but fixed in as far as they constitute a constant expense item (e.g. expenses related to weather conditions).

In previous reports (*'Framework for a National Aerodrome Master Plan'* and *'Aerodrome Standards Report'*), a three-tier aerodrome classification system was proposed and developed. A detailed break-down of the estimated average operational costs associated with the 'B' and 'C' aerodrome categories are presented in Annexure A.

The estimated annual operational costs for an individual aerodrome of the 'B' and 'C' classes are as follows:

Cost Item	Class B	Class C
Total cost	N\$ 442 215	N\$ 44 375

When interpreting the above table, it should be remembered that all 'A' aerodromes and most of the 'B' aerodromes will be assigned to the Airports Company, whose costs do not form part of the cost of the aerodrome network as presented in this report.

Also, the values indicated above are estimated values and do not reflect the MWTC's actual aerodrome expenditure.

Given the 41 aerodromes in the base-line option (i.e. excluding the 'Okongo' aerodromes), the average annual cost of operating and maintaining the network is estimated to be N\$ 2 260 055. It must be emphasised that this is the amount that has been estimated to be required to maintain the selected aerodromes at a minimum level of serviceability (i.e. not the expenses currently incurred). It therefore also excludes any costs required to upgrade the network to the required standards.

3.3 Principles of Cost Allocation among Stakeholders

If the network were a commercial (i.e. self-sustaining) network (as is the goal associated with the aerodrome network assigned to the Airports Company), it would be difficult to argue otherwise than have the users carry the full operational cost. However, the non-Company aerodromes in the national network represent the 'public good' component of the network. These are aerodromes provided to ensure access in remote areas to potential users which are not easily discernible as direct beneficiaries (they are not typical 'aerodrome users'). In principle therefore, it could be expected of Government (the MWTC) to contribute to the network in as far as it serves a public cause.

It is proposed here that the public good nature of the aerodromes extends to their fixed operational costs - in other words, the cost of maintaining a facility, but excluding all costs which may be related to the users of the aerodromes (i.e. the marginal cost). In the cost allocation referred to below, these costs have been categorised into an 'access' and 'use' component of costs - 'access' costs ensure that there will be a serviceable aerodrome, while 'use' costs recover maintenance expenditures caused by persons using the facility. Therefore, it is proposed that, ideally, the cost of access should be borne by the MWTC, while each user should contribute only the remaining marginal cost of his use of the facility.

It was mentioned previously (see 3.2) that aerodrome development costs could be recovered through a levy on users. There would be little justification for such a levy in the case of an aerodrome developed for public purposes only. The following table gives an indication that for instance the costs of operating the Swakopmund aerodrome could be fully recovered by levies like those in the Airports Company.

Airport/Aerodrome	Average ATMs	Average PAX per
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	per month		month	
	1995	1996	1995	1996
<u>New Airports Company</u>				
Windhoek Hosea Kutako	833	590	31 553	28 829
Windhoek Eros	2 704	1 967	8 272	7 983
Keetmanshoop	184	208	728	901
Ondangwa	160	145	240	n.a
Walvis Bay	331	356	5 069	6 071
Katima Mulilo (Mpacha)	128	n.a.	1 014	n.a.
Lüderitz	306	n.a.	1 642	n.a.
Rundu	60	n.a.	300	n.a.
<u>Other aerodromes</u>				
Tsumeb	180	n.a.	580	n.a
Otjiwarongo	50	n.a	150	n.a.
Aminuis	10	n.a.	19	n.a
Bagani	5	n.a.	16	n.a.
Bethanie	< 1	n.a.	n.a	n.a.
Eenhana	9	n.a	57	n.a.
Gobabis	55	n.a.	116	n.a
Grootfontein	74	105	313	242
Kamanjab	7	n.a.	10	n.a.
Karibib	30	n.a.	70	n.a.
Khorixas	3	n.a.	16	n.a.
Mariental	20	n.a.	80	n.a.
Nepara	9	n.a.	24	n.a.
Nepara	13	n.a.	36	n.a.
Okakarara	15	n.a.	105	n.a.
Opuwo	20	n.a.	80	n.a.
Oranjemund	160	n.a.	637	n.a.
Oshakati	590	552	2 298	2 394
Swakopmund				

In the case of a facility which needs to be developed or upgraded due to demand (i.e. increased use), it is proposed that the cost of that upgrade be factored into the network's cost and distributed only over the users. In other words, 'use' costs should ideally also include network development costs where such development is for aviation purposes (as opposed to 'public' purposes).

The annual operational cost of 'B' and 'C' classes of aerodrome may be allocated as follows:

Cost Type	Class B	Class C
Access	N\$ 120 865	N\$ 38 475
Use	N\$ 321 350	N\$ 5 900
Total	N\$ 442 215	N\$ 44 375

The 31 C and two B class aerodromes in the (non-Company) national network means that the total access charge is N\$ 1 434 455 (63% of the total) and the total use is N\$ 825 600 (37%), which sums to N\$ 2 260 055 per annum. If only once-off expenditures on pavements and verge clearing are incurred, the once-off cost related to a D aerodrome is estimated to be approximately N\$ 7 000 (approximately N\$ 120 000 in total).

4. RECOVERING 'USE' COSTS

4.1 Introduction

Having defined the network operational costs, this chapter explores the salient implications of recouping the 'use' component of costs from the network users. It must be emphasised that the charges explored in this chapter will be over and above charges levied by the Airports Company. They also do not take into account potential funding instruments for the proposed Civil Aviation Authority. As stated earlier, aerodrome development costs have also not been factored in. Important is also that the discussion which follows does not separate the impact of individual (i.e. non-MWTC) aerodrome operators imposing their own funding structure. For the purposes of the calculations presented below, it is therefore assumed that the same charging instruments will be used across the network.

4.2 Criteria for Funding Instruments

The ideal qualities of such funding instruments include the following:

- They should be *transparent* (and, by implication, auditable);
- They should encourage *allocative efficiency* (in that they accurately assign costs to appropriate users);
- They should be *equitable* (in that they limit cross-subsidisation); and
- They should also be *simple* in their form, application, administration and policing.

4.3 Access Charge

For the access component of funding, the existing funding instrument is the general fiscus (i.e. the Central Revenue Fund), from where funds are allocated according to Government's spending priorities of the day. Aerodromes do not have an earmarked share of these funds, and what they are assigned depends largely on the MWTC's motivation for projects.

There is at most a crude relationship between this funding instrument and the benefits derived from the aerodromes it funds (except in as far as they fulfil a public function).

Although funds from central Government are not foreseen to fall away in future, their extent cannot be guaranteed. Still, it is expected that such funds can for some time finance the largest part of the 'access' component of the network operational costs.

4.4 Use Charge

Regarding the most appropriate forms of charging users for the 'use' component of costs, there are a number of options available:

- Addition to Licence Fee - i.e. an increase in the aircraft registration fee or the annual operating licence, the amount of which may be related to the aircraft's size and log book (hours flown) as indications of use;
- Fuel Levy - i.e. a per-volume charge on fuel consumption as a proxy for aerodrome use; or
- Landing Fee - i.e. a fee based on each landing or take-off an aircraft makes, probably related to the aircraft's mass.

The following table briefly tests the charging mechanisms against the criteria stated above:

Charge and Criterion	Licence Fee	Fuel Levy	Landing Fee
Transparency	Very transparent. Transaction with individual aircraft owner or operator	Transparent i.t.o. payment record. Little i.t.o. daily operations - probably seen as a 'tax'	Very transparent - if collected on-the-spot or on a per landing basis
Allocative efficiency and equity	Least efficient/equitable. Has to assume standard user profile The more efficient the charge, the less cross-subsidisation	Partially. Flight time a usable, but not very good, proxy for landings	Most efficient and accurate
Simplicity	Already existing mechanism	Very simple - only two parties involved	Requires on-the-spot charging for maximum efficiency. Agent may be required. Most costly
Overall	Easy but inefficient. May have reached tolerable level already.	Easy with improved efficiency	Efficient but various practical implications

The above table indicates that, should a fee be considered for the 'use charge' component of costs, the selection of a specific fee would be a function of the relative importance of allocative efficiency versus practical implications (i.e. a licence fee or fuel levy are practical, while a landing fee is efficient). A fuel levy would be a simple and not wholly inefficient charge.

4.5 Possible Levels of Charges

Should each of these fees be instituted independently (i.e. not as a combination of fees), scenarios for each may be as follows:

4.5.1 Licence Fee

There are currently 357 operational aircraft on the Namibian register, with a total estimated mass (maximum take-off weight) of 1 132 tonnes. Each aircraft weighs 3 170 kg on average.

Given the network 'use' cost of N\$ 0.826 million, the licence fee of each aircraft will have to be increased by N\$ 2 310 on average, or N\$ 0.73 per kg. (This calculation assumes that each aircraft has some type of annual licence fee. Since aircraft licences are issued once only, this is not the case and therefore the actual levels of charges will be higher than indicated below.)

Given the above qualifications, charges could therefore be:

Aircraft	MTOW	Additional Licence Charge		
		Access Only	Use Only	Total
Cessna 210	1 315 kg	N\$ 1 670	N\$ 960	N\$ 2 630
Beech 1900	7 700 kg	N\$ 9 760	N\$ 5 620	N\$ 15 370
B737.200	52 000 kg	N\$ 65 890	N\$ 37 940	N\$ 103 820
Average on register	3 170 kg	N\$ 4 020	N\$ 2 340	N\$ 6 330

The current aircraft registration fee (as from 1 April 1998) is N\$ 200 per aircraft, and the licence fees for commercial operators and aerial workers are N\$ 4 000 and N\$ 2 000 (for aircraft above and below 5 700 kg respectively). These fees are also only payable at the start of operation (i.e. they are not renewed periodically).

4.5.2 Fuel Levy

During 1997, an estimated 61 865 533 litres² of aviation fuel were imported into Namibia. Of this volume, 93% was JetA1 (for jet aircraft) and 7% was AvGas (for prop aircraft). The current price for AvGas is N\$ 2.03/litre and for JetA1, it is N\$1.66/litre. The domestic network is predominantly used by piston-engined aircraft, which implies that the network costs should ideally be recouped from this source. As the table below indicates, this may, however, not be practical given the large required increase in the price of AvGas. Alternative scenarios for the weighting of the fuel levy are therefore presented:

Fuel Type	Current Price	Price/litre for Access only	Price/litre for Use only	Total Price/litre
AvGas only	N\$ 2.03	N\$ 2.36 (+16%)	N\$ 2.22 (+9%)	N\$ 2.56 (+26%)
JetA1 only	N\$ 1.66	N\$ 1.68 (+1%)	N\$ 1.67 (+1%)	N\$ 1.70 (+2%)
50% AvGas	N\$ 2.03	N\$ 2.20 (+8%)	N\$ 2.13 (+5%)	N\$ 2.29 (+13%)
50% JetA1	N\$ 1.66	N\$ 1.67 (+1%)	N\$ 1.67 (+0%)	N\$ 1.68 (+1%)
Equal AvGas	N\$ 2.03	N\$ 2.06 (+1.3%)	N\$ 2.05 (+0.8%)	N\$ 2.07 (+2.1%)
Equal JetA1	N\$ 1.66	N\$ 1.68 (+1.3%)	N\$ 1.67 (+0.8%)	N\$ 1.70 (+2.1%)

In short, it is unlikely that piston engine aircraft (AvGas) can bear the full brunt of a fuel levy for the aerodromes network. It appears that a very small increase in the price of JetA1 will, however, be able to provide the required funds.

² Source: Ministry of Mines and Energy

4.5.3 Landing Charge

Statistics for aerodrome use in Namibia are available only for the larger airports and aerodromes, which makes it difficult to assess the use of the (non-Company) network aerodromes accurately.

For the purposes of this report, movements to Eros aerodrome have been used as a proxy for network movements as a whole. Based on sampling, the 19 600 arrivals at Eros translate into approximately 7 850 movements over the network in 1996 (i.e. excluding flights to Company aerodromes, training flights and cross-border flights). Given the network 'use' cost, each movement would therefore have had to be charged N\$ 105. Given the estimated traffic mix, typical charges would therefore be:

Aircraft	MTOW	Landing Charge		
		Access only	Use only	Total
Cessna 210	1 315 kg	N\$ 102	N\$ 59	N\$ 161
Beech 1900	7 700 kg	N\$ 598	N\$ 344	N\$ 942
B737.200	52 000 kg	N\$ 4 036	N\$ 2 323	N\$ 6 359
Average in traffic		N\$ 246	N\$ 142	N\$ 388

'Aerodrome' charges, as from 1 April 1998, are N\$ 15, N\$ 80 and N\$ 520 for the three types of aircraft respectively.

The charges indicated in this chapter are only indicative. Once the principle of dedicated network charges has been canvassed, a more detailed analysis needs to be carried out. This will, among other, require relevant traffic statistics to be captured over at least a couple of months.

5. MANAGING AND FUNDING THE NETWORK

5.1 Introduction

Having specified the aerodrome network and defined the funding options, it now remains to define the process by which it will be managed and funded in future. The first requirement is to identify an appropriate agent to manage the network. Secondly, this party must be funded - either by Government or the users or some combination of the two. Lastly, someone must be assigned the responsibility to see that the network stays dynamic and reflects changing circumstances and requirements.

5.2 Operating Agent

5.2.1 Duties

Whereas 'A' and 'B' aerodromes require an hourly or daily presence at the facility, 'C' aerodromes (all network aerodromes are C) require the operator to monitor the condition of the facility on a less regular basis. His duties will essentially be the following:

- Inspection of facilities at predetermined intervals to establish the condition of infrastructure;
- Repairs and janitorial work carried out to rectify any unacceptable condition of infrastructure;
- Maintenance carried out to ensure the continuous operation of infrastructure. Maintenance is divided between pavement and off-pavement (e.g. buildings) maintenance; and
- Reporting matters of a national civil aviation concern to the DCA.

The exact duties to operate the network aerodromes have been defined in the *Aerodromes Standards Report*.

5.2.2 Appropriate Agent

For licensed aerodromes, the above duties currently fall under the responsibility of the MWTC. However, one of the principles of the MWTC 2000 programme is that operational and regulatory functions should be divorced. Ideally then, the management of the network should be assigned to an agent other than the DCA of the MWTC. It could potentially be considered to assign the actual carrying out of these functions (i.e. not the 'responsibility') to a body outside the MWTC.

Annexure C presents the main considerations should it be considered to assign the duties indicated to a body outside of the MWTC.

The MWTC can obviously not decide on who the agent should be for the maintenance of non-MWTC aerodromes. In the network, there are 5 privately owned aerodromes, 7 which are owned by local authorities and 4 by the Ministry of Environment and Tourism. (One of the local authority aerodromes (Swakopmund) is currently being privatised.) These aerodromes should therefore continue to be operated by their existing agents, who should have a duty to make them viable and self-financing. In those cases where such aerodromes cannot reasonably be expected to be viable, Government assistance may be considered in as far as they fulfil a public function – i.e. they may be financed up to the level of funding defined for that class of airport.

5.3 Funding the Network

Previous chapters addressed the extent of funding required as well as the potential sources of funding. In short, Government has a contribution to make in as far as the network is a public good, while it must be considered whether to charge users as well.

The options for funding are, essentially, that:

- MWTC funds the network wholly through a budget appropriation (as happens currently, although the budget is spread over three departments);
- a combination of Government (MWTC) and user charges are used (in which case the split and the form of user charging must be formalised).

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A variant of this option is where user charges are only recovered for B-level aerodromes (which are per definition there for the users);

- subsidisation is received from another source (e.g. the Airports Company) to make up the MWTC or the user contribution; or
- user charges only are used.

The last two sources of revenue listed above cannot be considered on equity grounds. The following table indicates salient considerations in selecting one of the other options:

Source and Criterion	MWTC Appropriation	User Charges
Sufficient funds generated?	The amount of funding required is relatively small (N\$ 2.3 mill in total and N\$ 800 000 for 'use'). Should not be excessive for fiscus (CRF). Especially in the light of formation of self-funding NACo (also potentially a self-funding CAA) and other MWTC 2000 projects (e.g. Roads Authority)	Individual charges (especially licence and landing) imply a major increase in existing fees. Fuel levy is less pronounced. Also, these same sources of revenue may in future be required to fund a CAA
Practical implications of collection	Existing budgeting process continues. Budget requirements have been spelt out	Collection mechanism must be created. Not problematic with licence or fuel. Potentially much larger issue in case of landing fees. An agent could be used, except that no agent will reasonably man network aerodromes permanently
Legal authority required?	Existing authority continues	Will at least require amendment to regulations in the case of landing fees so that charges can be levied for non-licensed aerodromes
Fund required?	No. Disbursements to be made from time to time from treasury to MWTC to agent	Probably

The table indicates that the amount of funding required *per se* is not a sufficient motivation to search for new sources of funding. This is especially so in the light of the relatively small amount which could justifiably be recovered from users. Also, the other implications of user charging do not justify moving away from the MWTC budgeting process. On the other hand, user charging is consistent with the philosophy underlying the restructuring of the MWTC.

It is recommended that user charges indeed be imposed to recover the use component of aerodrome costs. Based on its relative administrative advantages, the charging instrument should be a fuel levy. It is further recommended that, since the impact on jet fuel will be small, the fuel levy be introduced through an equal increase of both AvGas and JetA1.

Together with imposing a dedicated user charge, it may also be appropriate to establish a dedicated fund to house and from which to disburse funds collected from users. Should user charging not be implemented, the existing budgetary arrangements will continue and funds will be made available from Treasury (i.e. user charges will become part of general Government funds in the Central Revenue Fund).

Where user charges are collected, such revenues should ideally be placed in a dedicated fund rather than the general fiscus to ensure that aerodrome funds are indeed spent on aerodromes. Two types of fund may be considered - a suspense account (which must be cleared to zero annually) or a trade account (a revolving account). The administrative procedures for each are similar, and include record keeping and annual reporting to the Accountant General.

Ideally, an aerodrome trade account should be established in favour of the MWTC. However, the extent of financing is not such that funds necessarily need to be secured through a dedicated account. In the mean time, therefore, it is recommended that funds be appropriated from the Central Revenue Fund.

5.4 Management and Planning

Apart from the periodic maintenance of the individual aerodromes, certain planning and management functions need to be carried out for the network as a whole.

The following actions are considered to be part of planning:

- **Periodic Review of Network Principles.** The network principles as proposed³ reflect current national policy directives and other concerns. These will change over time and the aerodrome network principles may accordingly be affected. It is proposed that the network principles be reviewed every five years, and then with specific reference to the latest policy directives for the country, the economy and transport specifically.
- **Periodic Review of Network Standards.** In the same vein, there should be a process for the review of aerodrome standards. Two issues have to be addressed - the so-called standards index which indicates cut-off points between categories of aerodromes and which reflects the relative priority of each aerodrome location (i.e. the delimitation between 'B' and 'C' aerodromes), and the detailed standards specification for each aerodrome type.

As regards the current standards index, it will not easily be updated given the weight the Delimitation Commission's Central Place Analysis (a not easily-repeatable exercise) plays. It is therefore proposed that the index be updated with reference to the latest population numbers as well as realised demand (landings and take-offs). Given the pace of demographic and economic changes, it is proposed that this index be updated every five years.

As far as the detailed aerodrome standards (i.e. standards related to facilities, operation and maintenance) are concerned, they are 'technical' in nature (as opposed to 'geo-political'), and should therefore be more robust over time. It is proposed that the detailed standards definition be reviewed once every ten years.

- **Periodic Review of the Network Itself.** Based on changes in the network criteria, the standards index and/or the detailed standards, the national network may also need to be updated (i.e. aerodromes added in, taken out or re-prioritised). It is proposed that this also takes place once every five years.
- **Periodic Review of Network Costs.** Even if there are no changes to the network principles, standards or the network itself, it will be necessary to confirm the (capital

³ Refer to 'Policy Principles Underlying an Aerodrome Master Plan for Namibia'

and operational) cost of each facility, since this will form the basis for the contract with the operating agent. It is proposed that a detailed cost analysis be undertaken once every five years (based on the schedule provided in the 'Aerodromes Standards Report'). In the interim years, rather than revisit costing aspects in detail, it is proposed that costs be index linked. For the sake of simplicity, this index could be the official consumer price inflation index for Namibia.

- **Periodic Review of Network Charging.** At first, it is proposed that MWTC carry a large share (if not all) of the cost burden. However, depending on its share of the national budget, the Ministry's contribution may have to be reviewed in future. Similarly, as the network expands or contracts, or standards are redefined, the need may arise for the imposition of or a structural change in the levels of the aerodrome network charges. Such an adjustment will take place when circumstances dictate.

As regards periodic (non-structural) increments in fees, it is proposed that fees are reviewed annually and at least be increased by the rate of inflation (to ensure that users' real contributions do not decline). The revised fees must then be published for general notice.

- **Identification of Aerodrome Projects.** The network review may result in specific aerodrome projects being identified. For each such project (if it can be executed in terms of the budget), a detailed design must be undertaken, a contractor engaged and the work carried out and supervised. Although the strategic planning function for aerodromes will continue to reside with the MWTC, the Ministry should attempt to limit its operational and executive duties, work resulting from the identification of a project should be out-sourced as far as possible.
- **Interaction with the Namibian Airports Company.** As far as the Namibian Airports Company's role in the planning function is concerned, the first issue is whether it should be expected of Company aerodromes to comply with the minimum standards for each relevant category of aerodrome.

Given its commercial mandate, it must be assumed that the Company will attempt to match each facility as closely as possible with the type and level of demand for that facility. This is also ultimately the aim of having different standards of aerodromes in the national network - to cater for different requirements. It is therefore proposed that the Company will find an acceptable balance between facility standards and demand, and that active policing of Company aerodromes for compliance with the network principles not be undertaken. (It must be remembered that all Company aerodromes are licensed, which means that they will still be subject to regular safety/licence inspections by the DCA.)

Furthermore, the Namibian Airports Company is planned to be financially self-supporting (after an initial period wherein users are subsidised). There should therefore in principle be no need for the Company to approach the MWTC for funds, even though its aerodromes are all part of the national network. As regards the inclusion of further aerodromes in the Company's network, this situation is governed by the Airports Company Act, which in essence places the Company in a position to decline taking in a non-profitable aerodrome without a corresponding subsidy. Similarly, the Company will have to convince the MWTC of the merits of relieving itself of a Company aerodrome. If this does happen, and the aerodrome qualifies as a national network aerodrome, it will have to be taken up in the normal network review process, and provided for in the charges.

As regards capital works in progress at designated Company aerodromes, this is a matter that will have to be taken up between the MWTC and the Company's Board. It is foreseen that the MWTC will refrain from commencing any further large-scale capital works.

The following actions are considered to be part of management:

- Appointment of Agent. Should the MWTC consider to appoint an agent for the MWTC-owned network, such agent must be appointed contractually, and his performance must be reviewed.

- Inspection. The definition and implementation of a national aerodrome network with certain specified minimum standards does not detract from the DCA's licensing and inspection function, which will proceed as usual⁴. However, the contract with the network operating agent (or the individual owners in the case of non-MWTC network aerodromes) will specify minimum standards to be attained by the non-licensed network aerodromes. In principle, the function to inspect can be contracted out. It may be designated to the DCA, but this would raise the question of operation-regulatory conflict.
- Arrangements for non-MWTC Aerodromes. The fact that there are network aerodromes belonging to parties other than the MWTC, does not distract from the fact that they fulfil a public function. As such, they should receive the same level of funding as the MWTC network aerodromes. These parties must be contacted and arrangements made for an annual subsidy. In exchange, sufficient proof must be delivered to the MWTC that the funds were applied for their intended purpose. It is proposed, though, that any Okongo aerodromes taken over by local authorities not necessarily be funded in the same way - since these aerodromes do not qualify for full 'network status'.

As regards the responsibility for planning and management, it is proposed that planning remain within the Ministry (MWTC). Ultimately, the MWTC will be staffed by a core team of officials dealing with policy-making, regulatory and planning issues, and related legislation. The planning functions as set out above relate to the design of the aerodrome network, and actions to ensure its sustainability. They therefore fall within the proposed ambit of the MWTC's functions, and should accordingly be handled by the MWTC.

⁴ The DCA inspects licensed aerodromes, and has no licensing inspection duties towards other network aerodromes.

5.5 Need for an Aerodromes Register

Although the groundwork for an aerodromes database has been laid during the NTMPS analyses, there is a need to establish a more formal record of aerodromes. This would greatly facilitate the MWTC's planning function, and altogether make possible a more sensitive evaluation of aerodromes.

It is foreseen that such a register will contain basic information on each aerodrome in Namibia. A proposal on its design is included as Annexure B.

The establishment and maintenance of such a register could be the duty of the DCA, and can probably be housed in the Air Traffic Services (ATS) section which is already responsible for the Aviation Information Publication (AIP).

6. IMPLEMENTATION PLAN

6.1 Introduction

The previous chapters have explored the implications of establishing alternative sources of funding for the national aerodrome network. This chapter briefly considers some of the implementation issues that will have to be addressed in the light of the aerodrome network.

6.2 Implementation Phases

Given the ideal engagement process as well as its potential distractions, the following sequence of events is proposed:

6.2.1 Immediate Phase

The *Immediate Phase* refers to the period prior to the establishment of the Roads Authority (as a potential network agent) and the establishment of the Roads Contractor out of the DTIMC.

During this period, MWTC should identify and negotiate with the local authorities (and the Ministry of Regional and Local Government and Housing as the *de facto* local authority in many cases) the possibility of making similar arrangements as the Mariental case with them. In each case, the financial limit of the contract will be as calculated for the MWTC's network commitment.

As regards the non-MWTC network aerodromes, a formal contract should be negotiated with each owner specifying the required aerodrome standards that should be maintained (refer Annexure D). The maximum value of each contract will be as determined in the network costing. Should this amount not be sufficient, an alternative aerodrome fulfilling the same function should be identified.

6.2.2 Long Term

This phase will commence once the Roads Authority and the small contractors are established.

During this phase, it is proposed that the MWTC contract with the Authority who will then take care of the execution of all oversight and maintenance duties.

6.3 Specific Implementation Issues during the Immediate Phase

The following specific actions flow from this report:

- Allocate the planning functions and responsibilities (as per section 5.4) within the MWTC;
- Make arrangements for the collection of levies with the Ministry of Mines and Energy, and publish the levies;
- Carry out the aerodrome network audit and draw up a capital budget for aerodrome expenditures (inclusive of the 'Okongo' aerodromes);
- Design and implement an inspection plan according to the Aerodrome Standards Report;
- Negotiate the potential hand-over of aerodromes to appropriate local authorities;
- Contact the owners and operators of all non-MWTC network aerodromes, and commence discussions with them to formalise their network role and duties (in this regard, refer to Annexure D for the proposed contents of such agreement);
- Disengage from non-network MWTC aerodromes ('appropriate disposal'), including the re-assignment of personnel; and
- Assign the responsibility to establish an aerodromes register, and verify and modify the draft register prepared by the consultants.

7. CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This is the final report under the aerodromes terms of reference of the NTMPS. It has recapitulated the main planning, management and operational duties towards the aerodromes network. Read in conjunction with the 'Aerodromes Standards Report', it indicates which actions have to be carried out to give effect to the planned network.

7.2 Recommendations

It is recommended that

- this report be finally reviewed by the MWTC;
- it subsequently be approved; and
- the tasks listed in chapter 6 be actioned by the indicated bodies.

ANNEXURE A
COST PER AERODROME CLASS

ANNEXURE B
AERODROMES REGISTER DESIGN

It is proposed that the Aerodrome Register contain the following information for each aerodrome in Namibia (whether licensed/unlicensed or network/non-network):

- Aerodrome Name
- Aerodrome Location (co-ordinates S/E)

- Name of Owner
- Contact details
 - Telephone
 - Fax
 - Radio call (if available)
 - e-mail (if available)

- Facilities
 - Runway type, orientation, length and width
 - Traffic (estimated movements per annum or per week)

- Licensed?
- Network aerodrome?

ANNEXURE C
POTENTIAL NETWORK AGENTS

The two main issues in engaging an outside agent are whether there should be one body or various, and whether the engagement will be open (e.g. through tender) or closed (a direct appointment).

There are two evident candidates to manage the network - the Airports Company and the Roads Authority. The Company will operate a network of aerodromes across Namibia. It will be relatively well-positioned geographically and skills-wise to oversee the network. However, it is not foreseen that it will have the capacity in-house to conduct major runway and other repairs, especially not far away from its own facilities.

The Roads Authority is being set up to operate the national roads network. As such, it will cover the country comprehensively. It will also be geared to put out and manage contracts. In this regard, it will make use (at least for some time) of the Contractor and small contractors who will consist of the same people who are currently carrying out aerodrome maintenance.

Comparing the two potential agents for their ability to manage the network reveals the following:

Criterion	Airports Company	Roads Authority
'Public' or 'commercial' goals?	Commercial goals	Established as an autonomous body operating in a commercial manner, but does not have profit motive
Existing contractual framework with MWTC (for MWTC to assign aerodrome responsibilities to the agent)	Yes -Performance Agreement	Yes -Performance Agreement
Geographically spread across the country?	Yes - 8 locations. In effect, only 4 locations are staffed	Yes, throughout Namibia. 5 Regional offices
Expertise to carry out maintenance?	Yes	Yes
Capacity to carry out maintenance?	No - will be outsourced from time to time	Will also make use of outsourcing on a more permanent basis
Administrative capacity?	Yes	Yes - but capable to handle larger volumes
Liability	Will probably not accept liability	Will probably not accept liability, but in a position to react relatively quickly in case of a problem

As far as agents for the maintenance of individual aerodromes is concerned, the likely candidates are the Road Contractor being formed under MWTC 2000, private contractors or local authorities. A major implication of using such agents directly is that they will still need to be co-ordinated and controlled. If the MWTC engages individual contractors, it must be equipped administratively to deal with this task. It is proposed that a network agent would be more appropriate. It should then be one of the conditions of contract with the network agent that it will make use of small-scale and geographically localised enterprises in its contracting process.

ANNEXURE D
OUTLINE CONTENTS OF CONTRACT WITH AGENTS

It has been proposed that the relationship be formalised between the MWTC and operators of aerodromes. The following is a list of items that need to be taken up in such agreement:

1. Aerodrome Standard
 - 1.1 Assignment of a specific network category to the specific aerodrome.

2. Duties of the Operator
 - 2.2 The operator shall maintain the facility at the minimum standards as specified in the 'Aerodromes Standards' report and in the 'Duties of the Aerodrome Manager' (refer to the report titled '*Situational Assessment of Namibian Aerodromes*')
 - 2.3 The maintenance of the facility shall be done in a cost-effective manner, likely best achieved by using contractors in competition
 - 2.4 The aerodrome shall be available for use by the public
 - 2.5 The operator shall inform the MWTC (or its agent) of any event likely to influence the use of the facility as an aerodrome of the designated standard so that NOTAMs may be posted
 - 2.6 The operator shall keep record of all traffic movements at the aerodrome
 - 2.7 The operator shall facilitate Government duties and functions at the particular aerodrome
 - 2.8 The operator shall present to the MWTC annually a budget for the aerodrome in which measures are specified to minimise expenditures on the aerodrome while maintaining it at the minimum standard, and measures to maximise the financial sustainability of the aerodrome
 - 2.9 Any funds provided by MWTC to the operator may only be used for aerodrome purposes, and the operator shall deliver the necessary proof of such expenditures to the MWTC

3. Liability

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- 3.1 The operator will not be held liable for actions reasonably undertaken to maintain the aerodrome

4. Duties of the MWTC
 - 4.1 MWTC shall provide the operator with funds to make up the difference between any reasonably obtainable aerodrome revenues and MWTC's estimate of the funds required to maintain the facility at the prescribed minimum standard
 - 4.2 MWTC shall inspect the aerodrome annually to ensure compliance
 - 4.3 MWTC shall assist the operator with information on how to run an aerodrome efficiently, and supply the operator with such technical assistance as may be required from time to time

5. Payment arrangements
 - 5.1 Format and timing of payment

6. Contact details
 - 6.1 The operator's name and contact particulars

Namibian Airports Company
Projected Capital Expenditures and Associated Depreciation

Depreciation Policy	CORP	WDH	ERS	WVB	MPA	KTM	OND	RND	LUD
Land & Buildings	50	50	50	50	50	50	50	50	50
Roads & Runways	50	50	50	50	50	50	50	50	50
Airport equipment	40	40	26	40	40	40	40	40	40
Furniture and fittings	0	0	0	0	0	0	0	0	0
Office equipment	0	0	0	0	0	0	0	0	0
Motor vehicles	5	13.6	12.5	17	5	10	7	5	5

Land & Buildings		Year	CORP	WDH	ERS	WVB	MPA	KTM	OND	RND	LUD
Book value at start of period	1998/9	-	4 219 991	477 863	1 306 019	490 785	279 541	344 091	475 372	61 158	
Additions											
Depreciation during period		-	84 400	9 557	26 120	9 816	5 591	6 882	9 507	1 223	
Book value at start of period	1999/00	-	4 135 591	468 306	1 279 898	480 969	273 950	337 209	465 865	59 935	
Additions											
Depreciation during period		-	82 712	9 366	25 598	9 619	5 479	6 744	9 317	1 199	
Book value at start of period	2000/01	-	4 052 879	458 940	1 254 300	471 350	268 471	330 465	456 548	58 736	
Additions			3 590 400	1 044 000							
Depreciation during period		-	116 962	19 619	25 086	9 427	5 369	6 609	9 131	1 175	
Book value at start of period	2001/02	-	7 526 317	1 483 321	1 229 214	461 923	263 102	323 856	447 417	57 562	
Roads & Runways		Year									
Book value at start of period	1998/9	-	2 573 147	857 744	949 250	1 509 665	1 288 561	1 705 865	1 586 922	573 824	
Additions			38 000 000								
Depreciation during period		-	431 463	17 155	18 985	30 193	25 771	34 117	31 738	11 476	
Book value at start of period	1999/00	-	40 141 684	840 589	930 265	1 479 471	1 262 789	1 671 748	1 555 184	562 347	
Additions											
Depreciation during period		-	802 834	16 812	18 605	29 589	25 256	33 435	31 104	11 247	
Book value at start of period	2000/01	-	39 338 851	823 778	911 660	1 449 882	1 237 534	1 638 313	1 524 080	551 101	
Additions			2 463 600	2 436 000							
Depreciation during period		-	811 413	40 836	18 233	28 998	24 751	32 766	30 482	11 022	
Book value at start of period	2001/02	-	40 991 038	3 218 942	893 427	1 420 884	1 212 783	1 605 546	1 493 598	540 079	
Airport Equipment		Year									
Book value at start of period	1998/9	-	6 727 140	1 339 850	2 211 506	250 000	1 875 000	465 000	-	-	
Additions											
Depreciation during period		-	168 179	51 533	55 288	6 250	46 875	11 625	-	-	
Book value at start of period	1999/00	-	6 558 962	1 288 317	2 156 218	243 750	1 828 125	453 375	-	-	
Additions											
Depreciation during period		-	163 974	49 551	53 905	6 094	45 703	11 334	-	-	
Book value at start of period	2000/01	-	6 394 987	1 238 767	2 102 313	237 656	1 782 422	442 041	-	-	
Additions											
Depreciation during period		-	159 875	47 645	52 558	5 941	44 561	11 051	-	-	
Book value at start of period	2001/02	-	6 235 113	1 191 122	2 049 755	231 715	1 737 861	430 990	-	-	

Namibian Airports Company
Projected Capital Expenditures and Associated Depreciation

Furniture & Fittings	Year								
Book value at start of period	1998/9	-	56 600	10 800	21 893	-	-	-	-
Additions		-	24 000	-	-	-	-	-	-
Depreciation during period		-	-	-	-	-	-	-	-
Book value at start of period	1999/00	-	80 600	10 800	21 893	-	-	-	-
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	-	-	-	-	-	-	-
Book value at start of period	2000/01	-	80 600	10 800	21 893	-	-	-	-
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	-	-	-	-	-	-	-
Book value at start of period	2001/02	-	80 600	10 800	21 893	-	-	-	-
Office Equipment	Year								
Book value at start of period	1998/9	-	23 500	-	2 000	-	-	-	-
Additions		-	27 000	-	27 000	-	-	-	-
Depreciation during period		-	-	-	-	-	-	-	-
Book value at start of period	1999/00	-	50 500	-	29 000	-	-	-	-
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	-	-	-	-	-	-	-
Book value at start of period	2000/01	-	50 500	-	29 000	-	-	-	-
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	-	-	-	-	-	-	-
Book value at start of period	2001/02	-	50 500	-	29 000	-	-	-	-
Motor Vehicles	Year								
Book value at start of period	1998/9	-	3 539 971	2 088 370	1 470 529	-	213 130	92 084	-
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	260 292	167 070	86 502	-	21 313	13 155	-
Book value at start of period	1999/00	-	3 279 679	1 921 300	1 384 027	-	191 817	78 929	-
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	241 153	153 704	81 413	-	19 182	11 276	-
Book value at start of period	2000/01	-	3 038 526	1 767 596	1 302 614	-	172 635	67 654	-
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	223 421	141 408	76 624	-	17 264	9 665	-
Book value at start of period	2001/02	-	2 815 105	1 626 189	1 225 990	-	155 372	57 989	-
Total Assets	Year								
Book value at start of period	1998/9	-	17 140 349	4 774 627	5 961 197	2 250 449	3 656 232	2 607 040	634 982
Additions		-	38 051 000	-	27 000	-	-	-	-
Depreciation during period		-	944 333	245 314	186 895	46 259	99 550	65 779	12 700
Book value at start of period	1999/00	-	54 247 015	4 529 313	5 801 302	2 204 190	3 556 682	2 541 261	622 283
Additions		-	-	-	-	-	-	-	-
Depreciation during period		-	1 290 672	229 433	179 522	45 303	95 620	62 789	40 421
Book value at start of period	2000/01	-	52 956 343	4 299 880	5 621 780	2 158 888	3 461 062	2 478 472	1 980 628
Additions		-	6 054 000	3 480 000	-	-	-	-	-
Depreciation during period		-	1 311 670	249 507	172 501	44 366	91 944	60 091	39 613
Book value at start of period	2001/02	-	57 698 673	7 530 373	5 449 279	2 114 522	3 369 118	2 418 381	1 941 015

7 654 820
-
153 096
7 501 724
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150 034
7 351 689
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47 475 197
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1 981 889
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