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TRANSPORT SCOTLAND
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SCOPING STUDY INTO POTENTIAL DEVELOPMENT OPPORTUNITIES FOR DUNDEE AIRPORT

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Northpoint Aviation Services Ltd in collaboration with RPS Consulting and Reference Economic Consultants

Transport Scotland 2013

EXECUTIVE SUMMARY

The Scope of the Study

i. The focus of this study has been to evaluate the commercial outlook for Dundee Airport and identify, in the context of a range of short-medium term strategic approaches (or scenarios), potential problems and development opportunities that may undermine, or conversely help to improve its prospects. Based on this analysis, we have then sought to provide a set of overarching (as opposed to design or business case specific) conclusions and recommendations that Transport Scotland, in conjunction with other strategic partners (e.g. HIAL, Dundee City Council and TACTRANS), with an interest in ensuring the airport has a sustainable future, can take forward and implement.

ii. The original study brief from Transport Scotland, specifically included the flowing four core elements in the scope of work:

- A review of current operations/infrastructure.
- A detailed stakeholder consultation/engagement exercise.
- Consideration of other regional airport initiatives/models.
- Identification of development opportunities, scoping options for their delivery and then their appraisal using the STAG Stage 1 methodology.

iii. This Final Report draws together the work that has been undertaken to examine each of these areas while also having regard to the imprimatur in Transport Scotland's study brief, namely:

> "*to provide a clear explanation of the underlying analysis and approach, including the assumptions behind the work and its limitations*"; while noting that,
>
> *"….. the intention of the study is not necessarily to come to one single conclusion or recommendation. …... there may be a range of options that could potentially represent a way forward*".

iv. With this in mind, we have not sort to conclude our work with a single strategic recommendation for the future direction of the Airport – further more detailed work is required before final conclusions can be reached about this. However, on the basis of the work we have done we can:

- draw some high level conclusions on the Airport's current direction of travel and its implications in the event that a strategy of non-intervention is adopted;
- make some recommendations on a menu of short-term initiatives which HIAL, Transport Scotland and other key local stakeholders could pursue over the next 18 months to increase

revenues and better understand the underlying market potential of the Airport;
- agree the most promising looking medium term strategic options from this report and secure a consensus amongst key partners; and
- identify any further more detailed work needed to refine the proposals, secure stakeholder support and secure funding for an agreed medium-term 5 year development strategy for the Airport site using the Airport business plan as the basis for determining when key aspects of strategy are taken forward and ensuring its commercial impacts are being closely monitored;
- outline the least worse fallback positions if none of those options prove deliverable in terms of market, operational, environmental and land ownership constraints, or the cost and benefits of implementation.

A Route Map to the Report

v. The analysis undertaken during the study is extensive and consequently this Executive Summary does not attempt to provide a synopsis of all the work that has been undertaken and set out in the body of the report. Instead, its focuses on providing:

- A clear route map to the rest of the report;
- an easily digestible précis of its principal conclusions; and a distillation, in the form of recommendations to Transport Scotland and other stakeholders with an interest in the airport, of a range of short term initiatives that could help to stabilise Dundee Airport's immediate prospects while the most promising looking medium term (3-5 year) development options are examined in more detail for their operational integrity, budgetary implications and potential wider economic benefits.

vi. With the first of these objectives in mind, the following synopsis provides a guide to the main chapters in the report:

- *Chapter 2* provides a potted history of Dundee Airport's development, information about current commercial and General Aviation activity at the airport and details of existing businesses and hangars that are based there.
- Current infrastructure, property assets and operational constraints are outlined in *Chapter 3*.
- The difficulty of reducing the Airport's fixed cost base significantly without substantially reducing its fire and security cover, opening hours or ability to handle commercial passengers, is discussed in *Chapter 4*.
- The Airport's core catchment area is defined in *Chapter 5* alongside an analysis of the one million plus passengers that are leaking to other airports in Scotland; it is then used as a the

basis for identifying potentially viable scheduled services and developing a range of airport forecasts. The opportunities and issues associated with generating other non-aviation (mainly property) related income is also considered in this chapter.

- *Chapter 6* examines the economic under-pinning for an air service market from Dundee and the policy context within which options for the Airport's development need to be considered.
- *Chapter 7* summarises the feedback from the stakeholder consultation including the important pricing and scheduling issues highlighted during interviews with key local businesses and public sector employers.
- *Chapter 8* offers a benchmark analysis of Dundee against peer regional airports, focusing on metrics such as operating costs per passenger, governance models and by comparison with other airports, the limited scope to attract non-passenger related aviation activity because of the lack of physical space for development within the Airport's control.
- *Chapter 9* sets out the key challenges facing Dundee airport.
- *Chapter 10* provides a structured analysis short and medium term development opportunities and options.
- *Chapter 11* appraises these using the STAG methodology; and
- *Chapter 12* sets out in full our conclusions and recommendations; but for convenience they are summarised below.

The Current Direction of Travel

vii. Dundee airport has a long history of providing scheduled air services alongside the General Aviation users it has traditionally served (see Chapter 2). However, these 'commercial' services have, for the most part, proven to be short lived as carriers have come on and off different routes. This historical pattern appears to be continuing, as present day passenger volumes have dropped from a highpoint of nearly 80,000 passengers in 2008, until only one service (to London) now remains. And while that service's short-term future seems assured, it appears likely that co-ordinated strategic stakeholder support may be needed to secure its retention in the medium term.

viii. With commercial air passengers representing much the largest source of the Airport's revenues, if the current London City route were to be withdrawn and not replaced, the short-term prospects for the Airport would be likely to include a requirement for rising levels of subsidy over and above the current estimate of £2.7m per annum. If the Airport is to remain open in these circumstances, a figure between £3.0m to £3.5m seems more realistic.

ix. The only alternative would be to close the airport to passenger services and lay-off the additional staff required to service them. A skeleton staff (particularly Air Traffic and Fire and Rescue) would need to remain to

enable Business Aviation and GA traffic, which is actually growing, and an offshore operator (if one can be attracted), to continue to use the airfield. Complete mothballing of the Airport (at which point it would be returned to Dundee City Council, from whence it came, under the terms of the lease), followed by an attempt to re-start scheduled passenger operations at some later date outside the HIAL umbrella, would potentially involve significant start-up costs and regulatory/licensing risks.

x. The question of whether the Scottish Government can justify its current, or possibly an even greater, level of support over a protracted period will be at the heart of decisions about the airport's long-term future and they in turn will be heavily dependent on a realistic assessment of the prospects for attracting new airlines and other ancillary activity to Dundee. Our high level analysis of the airport's catchment and demand profile suggests there potentially is sufficient demand to support a modest network of scheduled and charter services from the airport and that there are a number of carriers that have the equipment to operate those services with the airfield's operational constraints. However, persuading them to enter into commercially sustainable contracts is likely to be time-consuming and require substantive investment in the form of marketing resource and monetary support. As such this could present an additional financial risk to the airport, albeit a relatively modest one.

xi. In this context, it is worth noting that the seminal study led by Cranfield University for the European Commission back in 2002[1], which concluded that although there could be significant variances, 500,000 WLUs[2] typically represents the median point (exempting depreciation and major capital investment), at which small regional airports should reach break-even. This is consistent with our own indicative analysis of what might be required to reach this longer-term aim at Dundee. The shorter term ambition, set out in this report, of securing full use of the existing terminal (i.e. 150,000 passengers per annum and more on site ancillary activity), provides a sensible and achievable first strategic stepping stone en route to achieving this ultimate objective).

Issues and Opportunities

xii. So in terms of issues and opportunities facing the airport, the highest priority must be to put an effective, well-timed and cost effective London service on a stable footing (through the use of a PSO if all other avenue fail), then to set about securing other scheduled routes where there is clear evidence of sufficient business or leisure/VFR orientated market demand. Concurrently, HIAL should also be looking to exploit other short term commercial opportunities (e.g. letting the Ex

[1] Cranfield University et al: Study on Competition between Airports and the Application of State Aid Rules – Volume 1; for European Commission – Directorate General of Energy and Transport (Sept 2002)

[2] WLU is a Work Load Unit – each unit represents one passenger or 100kg of freight.

Scottish Water Board building and working with Tayside Aviation to help them expand their business so they remain committed to the Airport as a key anchor tenant), while putting in place a coherent 5 year development strategy and 3 year business plan, which will utilise much of the existing terminal capacity and turn the airport around commercially.

xiii. From a scheduled passenger network point of view, we consider that with the right financial support, the short-medium term actions could encompass a number of domestic routes (in addition to London), possibly an international link (to Amsterdam) and a range of longer distance charter destinations.

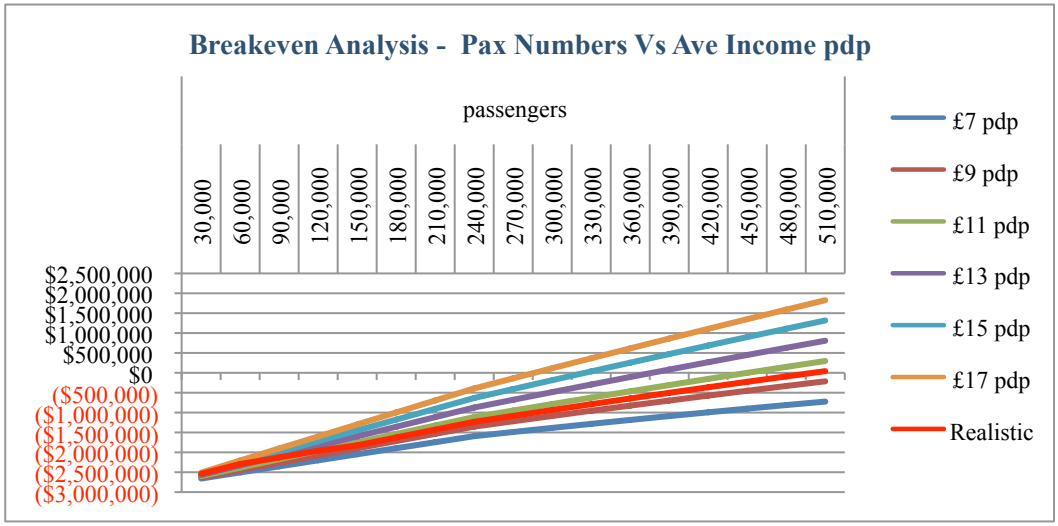
xiv. Capturing these services would certainly substantially improve the prospects for reducing the level of subsidy the airport requires over time. However, the high level demand assessment undertaken for this study will not of itself be sufficient to attract potential carriers to serve these routes: a combination of further in-depth route specific analysis, offering airlines attractive commercial terms (including potentially a risk sharing approach) and, initially at least, strong marketing support will all be required to make a compelling case that would put Dundee on the radar of a number of UK and European regional carriers.

xv. With the possible exception of additional aircraft stands, the terminal and airside infrastructure and operating cost base exist already to handle up to 150,000 passengers per annum and should not need to be increased until passenger volumes materially exceed that figure.

xvi. Scope also exists to generate additional revenues from Business Aviation, Helicopter and GA traffic and also from aviation related property development to service their needs as they grow (see Chapter 5). Some modest capital investment may be needed in relation to the latter, particularly if the use of the available land at the Airport is to be optimised.

xvii. If revenues per passenger can be sustained at current levels (c£13/pax), whilst growth is achieved in passenger volumes and costs are held steady, then the chart overleaf points to a breakeven at around 360,000 passengers, perhaps less if other income streams allow the intersection point between costs and revenues to be achieved earlier. However, we consider it unlikely all these conditions will come into alignment for some considerable time and based on a pragmatic view of unit operating costs and revenue per passengers (i.e. £11/pax to allow for discounts and route incentives), then even if the existing terminal is being used by 150,000 passengers and the site has been comprehensively re-configured in 5 years, we would still expect the Airport to have an annual operating deficit of £1.5-2.0 million.

Breakeven Analysis for Dundee Airport



Source: Consultant's analysis

xviii. Although investing in non-passenger based commercial activities at the airport could materially increase current levels of revenue in percentage terms for virtually no additional operating cost, at Dundee this element of the commercial strategy will only ever make a modest overall contribution because of the physical constraints of the site. In other words, it is unlikely to be the solution for the airport's on-going operating deficit. A commercially sustainable turn-round will need, therefore, to focus on attracting new routes and additional passenger volumes. In the face of strong competition from other Scottish airports this will not be achieved with current levels of route development and marketing spend.

xix. A premium therefore needs to be placed on:

- Marketing the airport heavily to the right carriers so that services can be provided at a price and frequency that will prove attractive to the catchment area. We have good evidence that there is a willingness to pay a premium to use Dundee, but exactly what that premium is on each route and whether that will make the service viable requires further work.
- Offering an airport environment that is attractive both to airlines (in terms of charges and route development support), and to customers (as a result of speedy processing, good local accessibility, competitive car parking prices and an attractive terminal environment).

- Addressing as cost effectively as possible any infrastructure constraints that might prevent the Airport's ability to optimise operational flexibility.
- Raising the level of awareness within the catchment area.
- Maintaining a high quality service that attracts repeat users and local pride and commitment to look to Dundee Airport first for their air travel and only thereafter look elsewhere.
- Securing the support of key local businesses and other stakeholders.

Recommendations

xx. With the forgoing in mind, our recommendations to Transport Scotland from this study of Dundee Airport are in three parts:

Short Term Initiatives

xxi. First that, in conjunction with relevant strategic partners (e.g. HIAL, Dundee City Council, Scottish Enterprise, Visit Scotland and Tactrans) - they consider implementing over the next 12-18 months a programme of short term initiatives aimed at stabilising and then turning round passenger throughput at the airport whilst optimising as far as possible other existing commercial opportunities. These should include:

- Working with Cityjet to see if their existing service to London City can be retained, or should that not prove successful, finding a replacement carrier to serve the London market should that prove necessary – we understand Transport Scotland may have already implemented this proposal by securing Cityjet's continued commitment to the route over the 2013/14 winter season.
- Build-up an in-depth understanding of the Dundee to London market and the economics of maintaining such a service given the constraints the airport imposes on the aircraft that could operate it.
- Pursue the potential to support the service, if required, through use of a PSO or the Government's recently announced £10m Route Development Fund – we understand work is already underway on this too.
- Undertake a survey of potential demand for air services within the core catchment area, using a combination of survey monkey style techniques supported by the local media and follow up discussions with key local companies and the wider business community to provide evidence to support the CAA based analysis and hard market data for presentations to airlines.

- Draw-up a wider route development strategy (i.e. beyond the core London service) and identify the likely financial implications of implementing it.
- Develop an airport marketing plan to raise the profile of the airport within its core catchment area and engage pro-actively with a range of market segments (i.e. business fliers, in and out-bound leisure travellers, tertiary education, VFR passengers and the offshore sector) and the local community using a variety of marketing techniques including social media in particular.
- Seek third party advocates in the form of high profile champions, ideally with a strong connection to Dundee, to help build public awareness and support for the airport.
- Develop a commercial offer, not just in the form of pricing but also convenience and customer experience that will make the airport a preferred choice for travellers within its catchment area.
- Prepare a prospectus to market the airport as a base for offshore, but particularly, renewables related helicopter operations, and market it pro-actively.
- Engage with Tayside Aviation in negotiations on a joint plan to develop their flying school and maintenance businesses, increase apprenticeships, jobs and long-term rental income.
- Secure a productive use for the Ex Scottish Water Board building that generates rental income now without foreclosing the potential for attracting a blue chip use down the line.
- Draw-up designs, cost and an associated business case for additional aircraft stands for commercial or business aviation use.

xxii. It is envisaged this agenda may require additional resources in the form of dedicated staff or specialist external consultancy support, alongside appropriate capital, marketing and route development budgets.

xxiii. It will also need careful management to a set of clearly defined timetable and output targets, all designed to turn round the airport's decline quickly and create a platform for further medium-term growth.

xxiv. The evidence from some of the peer airports we benchmarked is that those who have:

- remained committed to marketing themselves to airlines and passengers during he economic down-turn,
- sought to engage actively and openly with their key stakeholders, local communities and customers, and
- have been ready to make judicious investments to position themselves for the recovery when it comes (e.g. Gloucestershire Airport with £4m on runway improvements and

Norwich to develop new offshore facilities and hangars for spray-painting)

have not only done better during the recession, but will be better placed to benefit from the upturn when it comes.

xxv. The message to the key stakeholders with an interest in the airport is clear, therefore: do nothing and preside over what is likely to be an ongoing decline and at some point closure; or make some targeted pro-active investment now to ensure no stone has been left un-turned in the effort to giving Dundee Airport a chance of survival.

Medium Term Strategy

xxvi. Route development is not normally a process that generates quick wins; it is as much about persistence and long-term development of relationships with airlines, knowing and being able to articulate clearly the commercial opportunity your market offers while being committed to providing strong and consistent financial and marketing support, if they are ultimately to be secured.

xxvii. In our view this means that HIAL needs to be able to find additional resource to support their existing Commercial and Marketing manager in taking forward the Airport's business development agenda, not only in the short-term, but the medium term as well. Dundee is not an easy sell, but also not an impossible one; if the issue of whether there is a market to be served at all is to be bottomed out once and for all, this effort requires appropriate priority and funding as the UK, Scottish and local economy recovers over the next 2 years. In the context of current operating losses, the resource required is unlikely to be disproportionate.

xxviii. Consistent with the forgoing would be HIAL spending time to build-up and get firmly established the potentially important relationships identified by the stakeholder survey undertaken for this study, and by any work undertaken during the proposed short term initiatives. The aim would be to tap into the goodwill that clearly exists towards the airport amongst the business community, so that this can be presented to airlines in the form of potentially beneficial corporate relationships to help attract services.

xxix. We would also recommend an ongoing commitment to social media based surveys of the views of the local population within the airport's core catchment area towards the kind of pricing they would respond positively to, on which routes, and their feedback on how well the airport is doing in optimising its own service offer. This can be done very efficiently and cost-effectively using the same online tools mentioned earlier, especially if local newspapers and other media outlets remain actively engaged in helping the airport to attract airlines.

xxx. HIAL, supported by Transport Scotland, Visit Scotland and the City Council as required, should consider committing to attending key networking conferences providing opportunities to pitch to airlines (e.g. Routes Europe and French Connect), in addition to seeking bilateral meetings with key carriers where appropriate. They should also seek to adopt a 'Team Dundee' approach in which all the key partners are not just said to be, but seen to be, involved in helping to deliver the success of their route.

xxxi. This kind of sustained campaign and the supporting financial package needed to attract carriers will not come cheap. Realistically, a minimum budget of £250,000 should be set-aside in each of the two years after the Short Term Initiative and that could double if new carriers are actually attracted to begin routes.

xxxii. Another priority should be to engage pro-actively with the offshore renewables industry to position Dundee Airport as a construction and servicing base for wind turbine arrays of the East Coast of Scotland. This may eventually require some modest capital investment to make the airside infrastructure suitable for helicopter operation, but the potential direct and indirect commercial returns from capturing a share of this sector could be very significant to the airport's long-term sustainability as well as the city's wider ambitions in this area.

xxxiii. In parallel, a plan for rationalising and optimising the development of the estate, including where appropriate acquiring developable land adjacent to, but outside, the current airport boundary ought to be drawn-up. That way its full revenue potential and the costs of delivering this, in a series of phases if necessary, is clearly understood. This means that key tenant relationships (e.g. with Tayside Aviation and Loganair Maintenance) should then be advanced constructively, car-parking facilities optimised and the scope for developing on-site renewables and other revenue generating activities explored.

Strategic Development Options

xxxiv. Finally, having examined a range of development options for Dundee Airport based on a number of core strategic scenarios, and then subjected them to appraisal in line with STAG Stage 1 requirements, our analysis points to the following generic conclusions:

- The airport is well located within its catchment area, has existing passenger facilities that can be expanded at more modest cost than is likely to be possible at Perth and is potentially capable of generating material economic benefits for its sub region.
- Retaining a passenger airport at Dundee, at least in the short-medium term, would be a better option than closing it altogether as

long as there are commercial services using it, it is affordable and represents value for money in terms of economic benefits retained or secured.

- Accordingly, further work should be done on exploring options D1 and D2 alongside the Do Minimum to allow the next stage of the STAG assessment to be undertaken.
- It may, therefore, be prudent to delay closing the airport to commercial services until the extent of the market for air services from Dundee is more definitively understood and all avenues to attract carriers have been exhausted.
- Similarly, the relative merits of operating a joint-operational facility at Leuchars may be something that Transport Scotland could explore privately with the MoD while these other short-medium term initiatives are being implemented, to see if this would result in material cost savings relative to the anticipated ongoing levels of subsidy required at Dundee.
- The costs of mothballing commercial operations should be examined carefully so that if the existing London City services are lost and not immediately replaced, the relative costs of temporary closure or maintaining a functioning facility are understood.
- In parallel we consider it would be pragmatic for alternative uses for the site to be evaluated, so that in the event that the airport does need to close, the value and benefits it might generate in non-airport use are also clearly understood.

xxxv. This is a big agenda, but as anyone in the aviation industry in the UK will recognise, closing down an airport and losing a runway is a significant issue affecting connectivity, infrastructure capability and potentially requiring significant cost. It is therefore far better to explore and test the alternative avenues before any such final decision is reached.

CONTENTS

1. INTRODUCTION

1.1. Dundee Airport (IATA: DND, ICAO: EGPN) is a publicly licensed airfield open for scheduled, private and charter operators. It consists of a single east - west runway, aligned 09-27 on land reclaimed from the Firth of Tay, and is positioned less than 2 miles from Dundee city centre and with views over the nearby Tay Rail Bridge.

1.2. The airport occupies a gateway position on the A85 Riverside Drive, which links the A90 Kingsway (the road artery linking the city with Aberdeen to the north and Perth, Edinburgh and Glasgow to the west and south), to the City centre and Dundee railway station (about 5 minutes drive from the airport). The station offers services on the East Coast line to Edinburgh but also to the cross-country line serving Glasgow, Aberdeen and further afield.

1.3. As it enters its 50th year of operations, the original grass strip airfield having opened back in 1963, the airport is facing some of the most difficult challenges in its history, with commercial services being lost, passenger numbers in decline and a growing operational subsidy.

Aims and Objectives of the Study

1.4. It was with this in mind, and following discussions with key local stakeholders, that Transport Scotland determined to commission a review of Dundee Airport's future prospects that would include an examination of potential opportunities for development in the short, medium and longer-term scenarios. Specifically, the brief from Transport Scotland set out the following scope of work for the study:

1.4.1. <u>Current operations infrastructure</u>

To provide a comprehensive account of the current role of the airport, its scheduled air services, the other activities that are linked to it and infrastructure that supports it.

1.4.2. <u>Stakeholder Consultation/Engagement</u>

To undertake structured interviews to consider the views and requirements of local stakeholders regarding the current and future role of Dundee City Airport with primary interest being focused on the views of the business community, in particular representatives of companies operating in some of key sectors that define the Dundee economy, and the tourism and University sectors.

1.4.3. Consideration of other Regional Airport Initiatives/Models

To consider the role of comparable regional airports, within and outside the UK, to identify initiatives and models that could provide potential ways forward for the future management, marketing and development of Dundee City Airport.

1.4.4. Development, Scoping and Sifting of Options

To identify development opportunities (including route development opportunities) that will contribute and inform a future vision for Dundee City Airport and then subject a range of short, medium and longer term options based on these to high level appraisal. This should be based on a methodology that fits within the Scottish Transport Appraisal Guidance Framework (i.e. it should not be limited to financial impacts but also consider other issues such as environmental aspects and the effects on local transport networks) and supported with robust evidence.

Final Report

1.5. This Final Report presents the findings of that review. It is comprised of the following sections following this Introduction, structured as closely as possible around the aforementioned Aims and Objectives:

1.5.1. Current operations/infrastructure

- Historical Development of the Airport
- Airport Infrastructure
- Airport Operations and Management
- Market Assessment

1.5.2. Stakeholder Consultation/Engagement

- Current Economic and Policy Context
- Stakeholder Interviews

1.5.3. Consideration of other Regional Airport Initiatives/Models

- Benchmarking Comparisons

1.5.4. Development, Scoping and Sifting of Options

- Challenges Facing the Airport in 2013 and Beyond
- Potential Scenarios and Options
- Next Steps

1.6. Following a review of the draft Final Report by Transport Scotland, it was agreed, that this Final Report should focus on identifying a range measures to improve the airport's short and medium term prospects, rather than also seek to set out options for long term growth. Although we did examine a number of such options during our work, we concur with Transport Scotland, that until a stable business outlook capable of making much more intensive use of the airport's existing infrastructure is achieved, examining a range of options for long term growth requiring substantial additional capital investment is at best speculative and at worst could distract from the immediate task in hand. That task is securing a financially sustainable airport operation delivering sustained improvements in air connectivity for the City of Dundee, Angus, North East Fife and Perth and a platform for both existing and new aviation related businesses supporting employment generation in Dundee and beyond. The analysis and recommendations reported here have that core objective in mind.

1.7. For completeness, it is worth noting that the consultants team has also prepared a confidential document setting out notes from the wide ranging structured stakeholder consultation with aviation/airport users undertaken to inform this review (and summarised in the main report). This has been supplied separately to Transport Scotland and records the views of major existing and potential users of Dundee Airport on the commercial offer from the airlines that currently (or have recently) flown from it, with particular reference to destinations served, frequency and ticket pricing and incorporating their thoughts how this might be improved moving forwards. This will be of considerable value to the agencies given the responsibility for taking forward the short and medium term initiatives spelt out in the conclusions to this report.

2. HISTORIC DEVELOPMENT OF THE AIRPORT

2.1. The story of Dundee Airport began some 50 years ago when an airfield was first opened in the Riverside area, but on a site to the east of where the airport is currently located. Back in 1963 the nascent airport had a grass runway with poor drainage and few supporting facilities. The grass runway was replaced by a 900m (2953 ft) long tarmac runway in 1977 and extended in stages to 1100m by 1984. This remained its length until 1994-95 when it was extended to the current length of 1,400 m (4,593 ft). Runway lighting and instrument approach facilities were progressively improved until full ILS for RWY 09 was provided in 2000.

Airport Ownership

2.2. Between 1963-1975 the grass airfield at Riverside was owned by Dundee Corporation; its successor authority, Tayside Regional Council, of which Perth and Kinross and Angus Council were also constituent parts, then took over the facility operation and development from 1975 until 1996. The decision to develop a fully-fledged airport at Dundee Airport was established in a policy document the Regional Council published 1977, which acknowledged the need for airport provision for Tayside to be subsidised. In 1996, following a further reform of local government, Dundee Airport was taken into the ownership of Dundee City Council at which point Perth and Kinross and Angus Councils involvement was discontinued.

2.3. In the face of reduced grant support from the Scottish Government and rising levels of operating losses, which increased pressure on the City Council's budget, the airport was offered to the Scottish Government for operation by Highlands and Islands Airport Ltd.

2.4. HIAL was incorporated in Edinburgh on 4th March 1986 as a private limited company under the Companies Act 1985. On 1st April 1995, ownership of the company passed from the Civil Aviation Authority to the Secretary of State for Scotland (now the Scottish Ministers). Classed as a Public Corporation within the Scottish Government HIAL operates a further 10 airports in the north of Scotland, substantially the largest of which is Inverness. In December 2007, Dundee Airport Limited ("DAL") was established as a wholly owned subsidiary of HIAL and is now responsible for the operation of Dundee airport.

2.5. Dundee City Council has retained ownership of the land on which the Airport is sited, but has granted a long lease at a peppercorn rent to HIAL/Scottish Government for airport use. We believe the Council would have all of the airport and its facilities returned to them at no cost if HIAL/Scottish Government were to give up the lease.

Scheduled Air Services

2.6. The history of scheduled air services that have operated from Dundee is a chequered one (see Table 2.1) commencing back in 1966 with links to other Scottish airports, encompassing repeated attempts (more or less successfully), to offer UK domestic services to the likes of Manchester, Birmingham, London and latterly Northern Ireland and two periods where there were no such services.

Table 2.1: Dundee Scheduled Services

Air Operator	Routes	Start and End Dates
British Eagle	Glasgow, Edinburgh, Prestwick	July 1966-October 1967
Autair	Leuchars – London Luton, later London LHR)	1968-69
Loganair	Leuchars/Riverside-Glasgow	1970-75
Air Ecosse	Aberdeen-Dundee-Manchester	1980-85
Air Ecosse	Dundee-Carlisle- London LHR	1983-85
Business Air Centre	Aberdeen-Dundee-Manchester	1985-90
Euroair	Dundee-Carlisle- London LHR	1985-87
Business Air	Aberdeen-Dundee-Manchester	1990-94
Business Air/Lufthansa	Inverness/Aberdeen-Dundee-Manchester	1994-95
Business Air/Lufthansa	Dundee-Edinburgh-Manchester	1995-97
British Midland	Dundee-Edinburgh-Manchester	1997-98
ScotAirways	London City (Dornier 328)	April 1999-July 2007
Eastern	Dundee-Manchester (J32)	Nov 2002-March 2003
FlyWhoosh	Birmingham (ATR 42)	May 2007-December 2007
FlyWhoosh	Belfast City (George Best) (ATR42)	May 2007-December 2007
ScotAirways/CityJet	London City (Dornier 328)	July 2007-January 2011
Loganair	Birmingham (Saab 340)	May 2008-December 2012
Loganair	Belfast City (George Best) (Saab 340)	May 2008-December 2012
Flybe	Dundee-Jersey (Q400) (Saturdays only)	Summer 2009 and 2010
CityJet	London City (Fokker 50)	January 2011-July 2011
CityJet/Suckling (Loganair)	London City (Dornier 328)	August 2011-present

2.7. The most significant periods in Dundee's scheduled service offering once access to London Heathrow was lost in 1987, were those dominated by Business Air of Aberdeen (later sold to British Midland Regional), which operated flights from Inverness and Aberdeen via Dundee to Manchester Airport in the 1990's, and later the era of Scot Airways which began services to London City in 1999 that have continued to this day.

2.8. Founded as Suckling Airways by Roy and Merlyn Suckling in 1984, ScotAirways did not come into existence until after the Sucklings had acquired Dornier 328 aircraft in 1995 and secured investment from Perth based Brian Souter and Ann Gloag of Stagecoach bus operator fame in 1999. Following the re-branding, ScotAirways began services from Dundee to London City, offering up to 4 flights a day to the capital.

2.9. In July 2007 Cityjet/Air France, which by then had developed a substantial presence at London City, took over the route from ScotAirways although they continued to provide the aircraft on wet-lease basis until January 2011. Between January and July 2011 CityJet operated the route on a reduced frequency, and with less suitable business travel times with their Fokker 50 aircraft, to the disquiet of the Dundee business community. But following the purchase of ScotAirways by Loganair on 8th July 2011, the Dornier 328 was reinstated on the route as part of a charter contract with CityJet Air France-KLM and is continuing to operate to date.

2.10. As a result of the withdrawal of Loganair's services to Birmingham and Belfast (which were initially commenced in May 2007 by Fly Whoosh with the help of the then Scottish Executive's Air Route Development Fund, but taken over by Loganair under a Flybe code-share in May 2008), in December last year, the London City route is the only scheduled service that remains at Dundee, although (as in previous years), there were also charter services to Jersey again in summer 2013.

<u>The London City Service</u>

2.11. CityJet currently offers 2 daily flights from Dundee DND to London City (LCY). The Dornier 328 used for the service is based at Dundee and currently operates as follows:

Figure 2.1: Dundee - London City Timetable Winter 2013

From Dundee

Flt No	Depart	Arrive	Mon	Tue	Wed	Thur	Fri	Sat	Sun
AF 5170	08:20	10:00	●	●	●	●	●	●	
AF 5176	18:25	20:00	●	●	●	●	●		●

To Dundee

Flt No	Depart	Arrive	Mon	Tue	Wed	Thur	Fri	Sat	Sun
AF 5173	10:30	11:55	●	●	●	●	●	●	
AF 5177	20:25	22:00	●	●	●	●	●		●

2.12. As a gateway to the capital, London City Airport does have its attractions; as Cityjet's marketing suggests, it is:

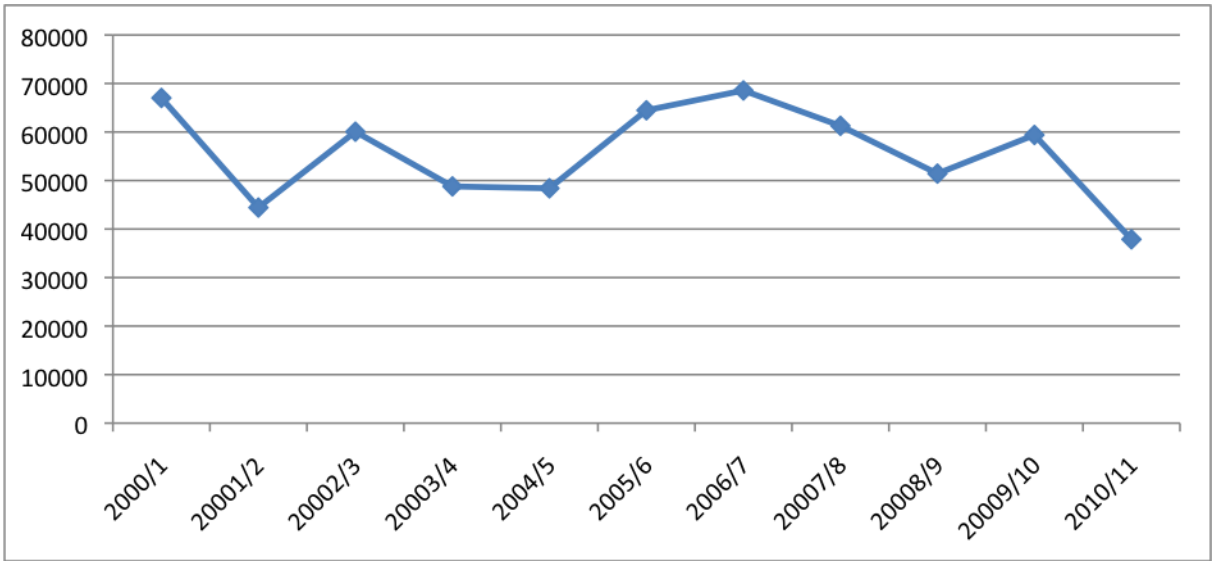
> *"incredibly close to the West End, the City and Canary Wharf, in fact Canary Wharf to the airport by DLR takes just 15 minutes. CityJet has just a 20 minute check-in time at London City Airport LCY, the shortest of any UK airport. Flying with CityJet means an end to uncivilised travel. No more hanging around in airports, no hassle in security queues or long walks to distant departure gates. With CityJet, all seats are assigned, all drinks and snacks are included and all fares are inclusive."*

2.13. On the downside, London City does have a relatively high occurrence of weather cancellations owing to its very special operating conditions such as high visual minima, steep approach and significant nearby obstacles. These cancellations are a significant issue to some travellers. But of even greater concern, however, has been the dramatic increase in London City airport charges over recent years, which have reached levels (understood to be over £2000 a turn round) that threaten the viability of the Dundee service and have already obliged Cityjet to operate at less attractive off peak times. Comparative charges at other London airports, such as Stansted, are now approximately a third of the charges at London City. This sort of cost burden on a 31 seat aircraft with load factor of between 50-60% is estimated at an approximate £60 per leg resulting in return fares of between £300-400, rising towards £500 if booked for peak times close to the day of departure.

2.14. Consultations with local stakeholders in 2011 and 2012, served to make CityJet fully aware of the disincentive to patronage caused by very high fare levels – the stakeholder consultations undertaken as part of this study (see Chapter 7) have confirmed the increasing sensitivity of the routes core market to these prices.

2.15. In October 2012, CityJet unveiled a new three-tiered fare structure offering a high degree of flexibility, but accompanying changes in pricing and timetabling have been perceived locally as reducing the utility of the service, and many Dundee businesses claim to have significantly reduced their use of the route. There is little doubt that large numbers of passengers are now leaking from the catchment to Edinburgh (and to a lesser extent Aberdeen) to use less expensive London flights. Figure 2.2 shows the drop off in total passenger numbers flying to and from London City from within the Dundee Airport catchment area. They include passengers using the London City services from Edinburgh where fares can be materially cheaper. In terms of the Dundee route alone, passenger numbers have varied between 45-70,000 between 2000-09 before dropping off.

Figure 2.2: Traffic to London City from Dundee Area between 2000/01 and 2010/11

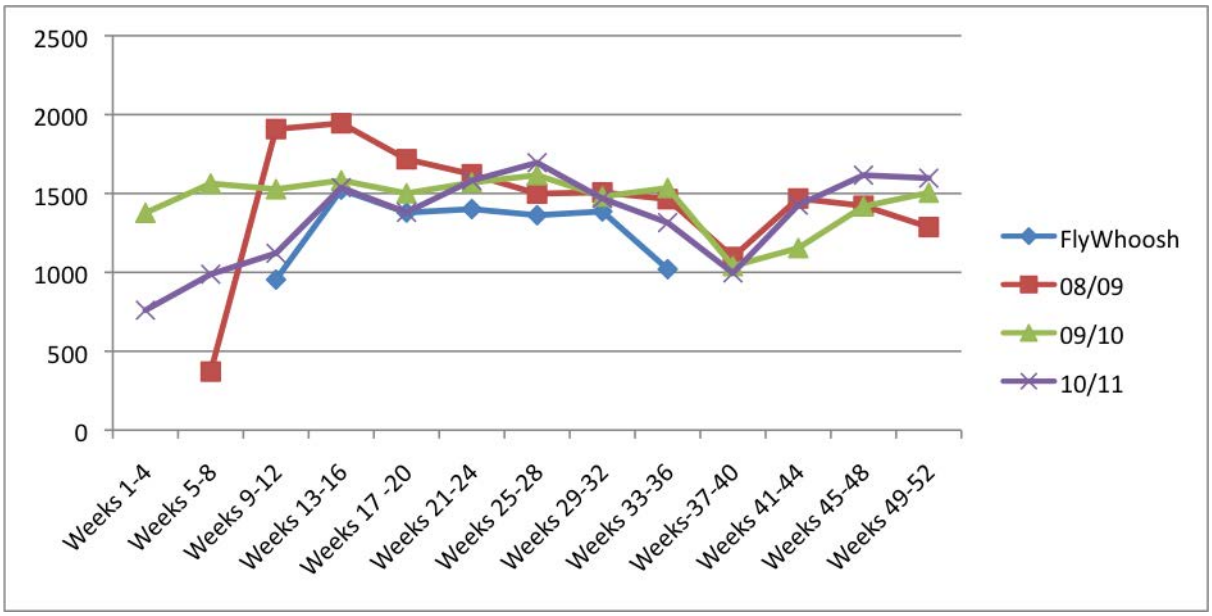


Birmingham and Belfast Services

2.16. On May 29, 2007, FlyWhoosh based in Birmingham, commenced services between Dundee and two previously un-served destinations - Birmingham and Belfast City (George Best) - using a 42 seat ATR42 based at Dundee. FlyWhoosh was essentially a virtual airline that sub-contracted White Eagle Aviation (WEA) of Poland to operation the route on its behalf, but ceased abruptly in December 2007.

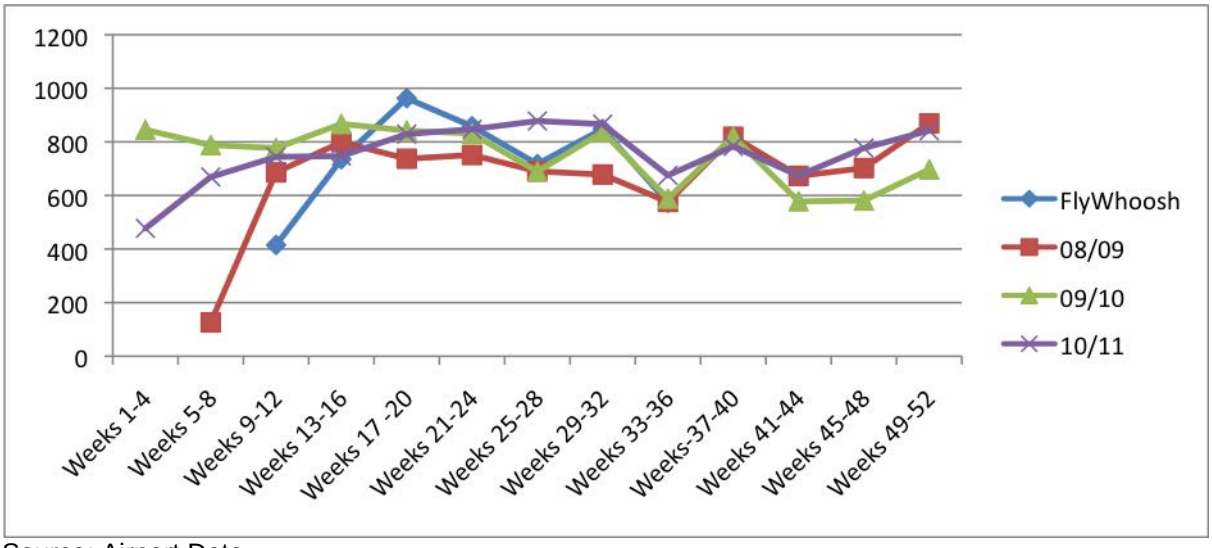
2.17. Loganair, under their franchise agreement with Flybe, recommenced the FlyWhoosh routes in May 2008 using 34 seat Saab 340 aircraft with support under the then extant Route Development Fund developed by the Scottish Government. Three weekday return flights were initially operated between Dundee and Birmingham, with one return flight on Sundays. Frequency was later reduced to two weekday return flights to Birmingham, with the Friday morning rotation also being dropped. A daily weekday and Sunday return flight between Dundee and Belfast City Airport was also offered, but the Wednesday service was discontinued. Traffic levels looked reasonably encouraging for some time, as indicated by Figures 2.3 and 2.4 below.

Figure 2.3: Four Weekly Data for Dundee Birmingham Service 2007-11



Source: Airport Data

Figure 2.4: Four Weekly Data for Dundee-Belfast Service 2007-11



Source: Airport Data

2.18. During 2012, however, there was a marked turndown in patronage caused by continued difficult economic conditions and some of the more regular users of the services changing their travel patterns to use cheaper services available from Edinburgh. This resulted in Loganair discontinuing the flights to Belfast City and Birmingham on 2 December 2012, citing disappointing load factors.

Charter Flights

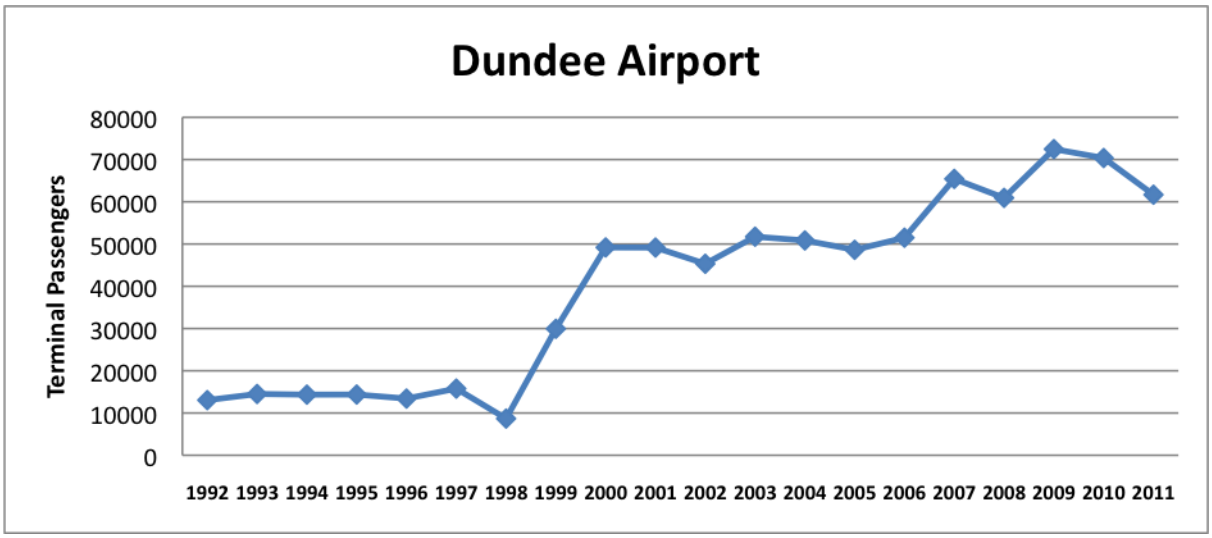
2.19. Ramsay World Travel from Dundee has and continues to sell holiday summer charters to Jersey for many years; in 1997 they also ran a summer season of weekly flights to Majorca using BAe 146 aircraft which had to land in Bournemouth/Southend to re-fuel. They do this on behalf of CI World Travel that run these weekend charters leasing an aircraft from main operators (nearly always without positioning costs). CI World Travel offer a 22-week season starting end May – September (every Saturday). In Dundee, they use Ramsay World Travel (almost exclusively), an arrangement which goes back 20 years and expect these charters to have 90% load factors or better. In the 2009 and 2010 seasons the Saturday service from Dundee to Jersey took the form of a Flybe scheduled flight using a Dash 8 Q400. It reverted to a charter in 2011 using an ATR42-500.

Commercial Aviation Activity at Dundee Airport

Passenger Volumes

2.20. As a result of Loganair's withdrawal of its two scheduled services in December 2012 passengers transiting the airport have slumped by more than 50% in December 2012 compared with the same month in 2011. The downturn since the highpoint of over 72,000 passengers in 2009, as shown in the graph below (Figure 2.5), is therefore set to accelerate as these new lower figures begin to be recorded in CAA returns, with the prospect passenger throughput could dip below 40,000 for the first time since the 1990s.

Figure 2.5: Annual Pax Throughput at Dundee 1992-2011

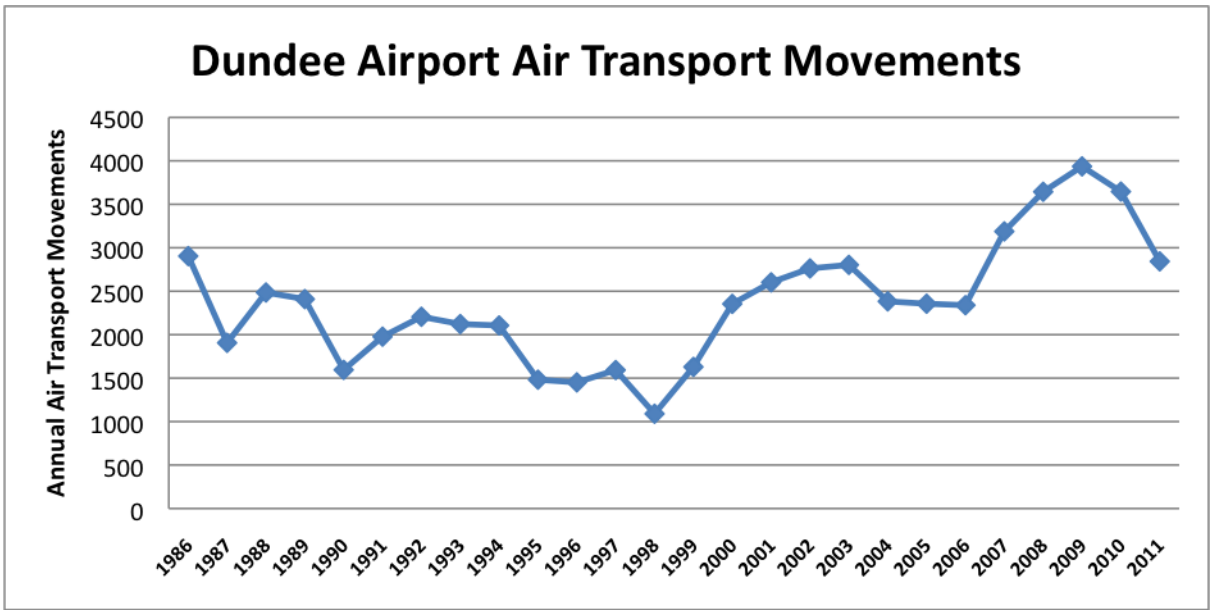


Source: CAA Statistics

Air Transport Movements

2.21. Total Air Transport Movements are shown in Figure 2.6. Much the largest component of overall traffic movements from the airport are, however, General Aviation rather than scheduled public transport movements.

Figure 2.6: Dundee Airport ATMs



Source: CAA Statistics

Loganair Aero-engineering

2.22. Loganair maintains an extensive infrastructure throughout Scotland to support the delivery of its services. It holds EASA 145 accreditation and undertakes major maintenance on its Saab 340 and Twin Otter aircraft at its Glasgow base. Loganair also acquired *Caledonian Airborne Engineering* of Aberdeen in 2008, and this operation now supports its own, and significant third party aero-engineering needs. BN2 Islander maintenance is undertaken at a further facility at Kirkwall in the Orkney Islands. Line maintenance capability is maintained at Glasgow, Edinburgh, Aberdeen, Dundee, Inverness, Kirkwall and Sumburgh and the airline provides contracted engineering support to a number of other airlines, mainly at Glasgow and Aberdeen, which has included Emirates, and BA CityFlyer.

2.23. Dundee is the home maintenance base for the Dornier 328 fleet. The Saab 340 is compatible with the Dundee maintenance hangar which is re-locatable Rubb hangar measuring 27m (90') x 30m (100') with associated modular maintenance offices and stores, built on a permanent foundation with full service provision for ScotAirways in 2000. It has a life expectancy of at least 25 years and a main door can accept aircraft of up to about 22 metres span, which means on occasion it has been used for Saab 340 maintenance, and is certainly suitable for that purpose.

Loganair Hangar at Dundee

General Aviation at Dundee Airport

Business Aviation

2.24. Dundee Airport is in an attractive location for private and chartered business aviation traffic due to its proximity to golf courses of world renown at St. Andrews, Carnoustie and Gleneagles. Another source of such traffic is the very high value market in game shooting and fishing - most notably salmon fishing - in Perthshire and Angus.

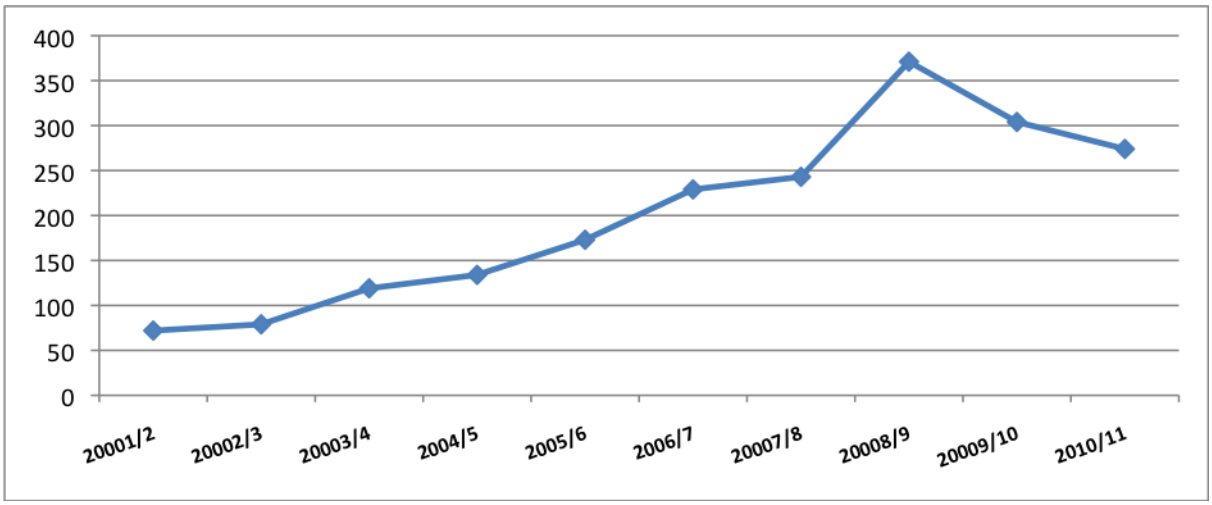
2.25. Dundee is capable of handling a restricted range of business jet with transatlantic capability, notably the Gulfstream V and Bombardier Global Express, but also the full range of Falcon business jets, which are regular visitors and allow European destinations to easily be reached from Dundee.

2.26. Business aviation traffic was limited until the overlaying and transverse grooving of the runway was completed in 2002, after which movements increased from 158 in 2001-02 to 608 in 2008-09. Since then there has been a slight reduction due to the economic recession. HIAL believe the numbers of business aviation movements into and out of Dundee would be higher if the Royal Air Force did not accept business jets at Leuchars on an ad hoc basis, although they recognise that during the years when the British Open Golf Championship is played at one of the local courses, there is a spike in business jet demand that exceeds the capacity of Dundee's current apron to provide long-term parking.

Business Jets Parked at Dundee Airport

2.27. Historic data from the airport on Business Aviation activity in the period up to 2010/11 is summarised in Figure 2.7. Although the data now gathered by HIAL uses the calendar year rather than the financial year as previously, the latest figures for 2012 indicate Dundee airport received 159 domestic business aviation charters, 106 international business aviation charters (265 in total), and 43 domestic/37 international air taxi departures, which suggests a levelling off or slight up-turn, of the post-recession dip in business aviation activity. The airport also catered for 22 military flights and 4 official/diplomatic flights during the year.

Figure 2.7: Business Aviation Departures 2001/02 to 2010/11



Source: Airport Data – Includes flights categorised as Business Aviation and Air Taxis.

Rotary Activity

2.28. Helicopter traffic is routinely accepted at Dundee, but there are no commercial helicopters currently based at the airport. When weather causes problems at Aberdeen Airport, North Sea servicing helicopters do sometimes use Dundee as a diversion aerodrome, and North Sea helicopters do occasionally carry out training at Dundee. The major Accident and Emergency facility at nearby Ninewells Hospital has its own helicopter pad, but rescue helicopters sometimes use Dundee Airport instead in unfavourable conditions – and especially when they are in need of fuel. There is occasional light rotary activity at the airport with some light training largely, originating from Perth and PDG also offering sightseeing flights.

2.29. Care is taken to ensure complaints from residents of Dundee's neighbouring West End are minimised with controlling and rationing any heavy rotary training activity. Airport management consider that any new rotary aircraft based at the airport, for example to service offshore wind farm arrays to built in the North Sea, would probably have to work within 'good neighbour' protocols, but these are deemed not to present insurmountable problems.

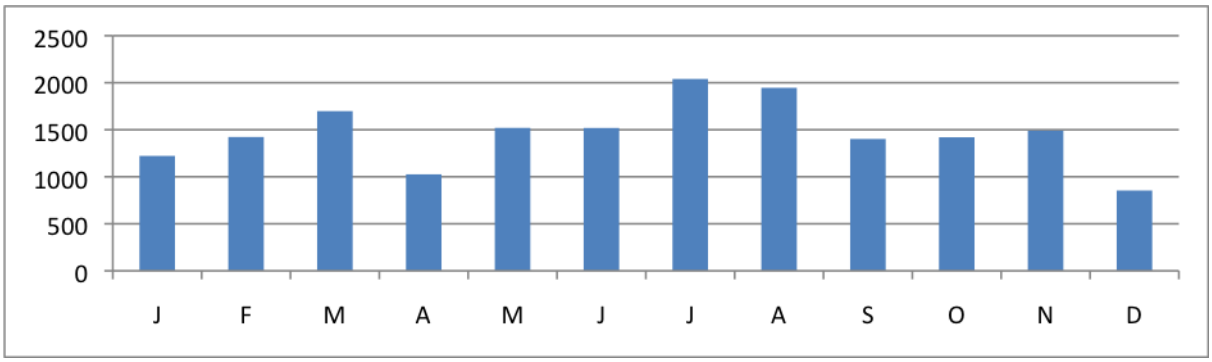
Ancillary Activities

2.30. Fixed wing medical flights use Dundee Airport when patients need to be flown to, or from, the nearby Ninewells Hospital. Other medical flights involve the transportation of transplant organs. Urgent medical flights are sometimes handled by Dundee Airport outwith its normal opening hours, if the necessary staff can be sourced at short notice.

2.31. Training flights by aircraft not based at Dundee, frequently carry out practice ILS approaches using Dundee's Instrument Approach because it is the only full ILS within easy reach of Central Scotland that is not subject to high demand by commercial movements. The Airport hosted 50 training and test flights and 38 flights by private operators in 2012.

2.32. In 2012 there were 17,500 'Aero Club' departures from the airport, many of these taking the form of commercial pilot training. This is apparently the highest GA volumes at any HIAL airport. As Figure 2.8 illustrates the activity does exhibit some seasonal variation.

Figure 2.8: Aero Club Departures at Dundee Airport in 2012



Source: Airport Data

Tayside Aviation

2.33. Tayside Aviation is a flight-training and aircraft service company based at Dundee Airport delivering high quality flight training which is recognised worldwide. Established in 1968, Tayside Aviation has trained hundreds of pilots who are now flying with many of the world's airlines. Tayside Aviation delivers flight training from Private Pilot License (PPL) level through to a full, airline ready commercial pilot's license. The company operates a fleet of 16 aircraft (listed as Cessna 152; Cessna 172; Grob 115; Piper Warrior; Piper Arrow; Piper Seneca), maintained by their own CAA approved aircraft maintenance and avionics facility at Dundee airport; it also own and operate Fife airport at Glenrothes, which is also home to the Tipsy Nipper restaurant and flying school.

2.34. Tayside Aviation holds the prestigious MoD contract to deliver flight training on behalf of the RAF Air Cadet pilot scheme. They are the only civilian organisation entrusted to deliver flight training to over 200 scholarships per year using the Grob 115 military trainer at Dundee airport. Tayside also deliver specialist scholarships for the Air League Educational Trust and the Ministry of Defence and the Hong Kong region of GAPAN contract their PPL scholarships to Tayside Aviation. In 2007, they invested in a state of the art flight simulator (*Alsim AL200* MCC Flight Simulator), which delivers training towards the issue of a pilot's full instrument rating and the airline multi-crew courses.

Tayside Flying Club

2.35. The club has around 100 members from all over the UK, although the majority are based in Angus, Fife, Stirling & Perthshire. Most are flying members but many are former fliers or are people who have an interest in general aviation. There is one privately owned aircraft (a helicopter) based at the airport, the remainder belong to Tayside Aviation, which also provides the club's flight training.

Other Hangars and Facilities

2.36. A high quality maintenance hangar was built for Tayside Aviation by the Scottish Development Agency in 1982; the Company later bought it and it remains in use to this day.

2.37. The City Council acquired the large blue clad building to the east of Tayside Aviations operation when it was put on the market by the Scottish Water 8 years ago; it is currently used for equipment and stores by HIAL, a commercial use for the building has yet to be found, although there is now known to be genuine interest from a number of parties.

Figure 2.9: Dundee Airport

3. CURRENT AIRSIDE AND TERMINAL INFRASTRUCTURE

Runway

Geometry

3.1. The UK Aeronautical Information Publication (AIP) published by the CAA indicates that in December 2012, Dundee's single runway was:

- orientated at 09-27,
- 30m wide by 1400m long,
- at a height of 5 metres above mean sea level, and
- horizontal with a straight longitudinal profile.

3.2. The AIP for Dundee also reports the following declared distances:

Table 3.1: Declared Distances

Runway	TORA	TODA	LDA	ASDA
09	1,319m	1,319m	1,400m	1,400m
27	1,319m	1,319m	1,400m	1,400m

3.3. The meaning of the declared distances above is:

TORA – Take-Off Run Available - This is the length of runway available and suitable for the ground run of an aeroplane taking off.
TODA – Take-Off Distance Available - This is the length of the TORA plus the length of any associated clearway.
LDA – Landing Distance Available - This is the length of runway available and suitable for the ground landing of an aeroplane.
ASDA – Accelerate Stop Distance Available - This is the length of TORA plus the length of any associated stop-way.

These distances are illustrated in Appendix A (Drawing NK017413_100).

3.4. The Aerodrome Manual indicates that the runway is declared as a Code 2C runway with Runway 09 being a Category 1 Precision Instrument Runway, and Runway 27 being a Visual Runway. A Code 2 runway is defined by a TODA or ASDA distance not greater than 1200m. The declared distances at Dundee exceed those stated in CAP 168 for a runway of this type having been approved by the Civil Aviation Authority in 1995 when the runway was extended to 1400 metres (see Appendix A). The CAA did not at that time allow the full 1400m to be declared for TORA and TODA, and it was understood, at that time, that this restriction was to prevent the employment of aircraft at Dundee which exceeded a size that the CAA felt appropriate for the circumstances of the aerodrome. Concurrently the CAA also decided that it would not allow the runway to be declared within the less demanding criteria for the lower third of Code 3 runway designation, because of obstacles in the side protection surface north of Riverside Drive (i.e. the transitional surface). There are no obstacles along the extended centre line of the runway that would preclude the full 1400m being declared if the other criteria could be met, or a further relaxation obtained, but such an extended TORA and TODA could bring obstacles outwith the aerodrome more strongly into play within the Type A Chart.

3.5. In the present circumstances, the safety strip surrounding the runway varies depends on the runway direction being used, with a 75m wide strip, measured from the runway centreline, being required for Runway 27, and a 40m wide strip being required for runway 09. These strips are illustrated in Appendix A, which demonstrates that they are clear of the taxiways and aprons serving the runway. An assessment of the space available between the runway strip at the end of the runway, and the airport boundary, suggests that the airport can provide the minimum Runway End Safety Areas (RESA) required by CAP 168. For a Code 2 instrument runway, i.e. runway 09, it is recommended that a 120m RESA is provided, whereas for a Code 2 visual runway a RESA is only to be provided if deemed appropriate by the airport. In this instance there is a full RESA for Runway 27. The RESA areas are again shown in Appendix A. In order to achieve the full recommended RESA for Runway 09 it would either be necessary to obtain a small amount of ground from the University and re-site the localiser aerial just east of the present line of the airport east fence, or extend the runway westwards by 15 metres and relocate both thresholds westwards by 15 metres.

Pavement Construction

3.6. The current PCN for the runway at Dundee Airport is 27/F/D/Y/T. The runway was overlaid strengthened and resurfaced between 2000 and 2002 and then again approximately two years ago. From some core information that was made available, the asphalt pavement thickness varies between 305-560mm overlaying 250mm layer of granular material.

Pavement Strength

3.7. The UK AIP for Dundee Airport, dated December 2012, reports a Pavement Classification Number (PCN) of 27/F/D/Y/T for runway 10/28. The meaning of the PCN code is as follows:

The PCN Number of 27 – the permitted ACN of the aircraft at the appropriate sub-grade category.
Type of Pavement, F – the runway is a flexible construction.
Sub-grade Category D – this indicates that the sub-grade is of an "ultra low" category, typically a CBR of 3%.
Tyre Pressure Y – this states the maximum tyre pressure authorised to use the pavement is low, limited to 1.0 MPa (145 psi).
Pavement evaluation method T – the PCN has been determined by technical design or evaluation methods.

3.8. Table 3.2 shows the Aircraft Classification Number (ACN) for a variety of aircraft that operate within the UK and are likely to be reasonably compatible with operations from Dundee. The ACN values depend on the aircraft weight and type of wheel/tyre, but also the pavement type (concrete "Rigid" or bituminous "Flexible") and the ground conditions. The Table provides the ACN for each aircraft based on a flexible pavement and ground conditions of "ultra-low" standard, i.e. a CBR of 3%. It should be noted that this list is not comprehensive, particularly with reference to business jets. There are a large number of potentially compatible types of small business jets that are not listed in the table; those that are included are intended to be illustrative.

3.9. Any decision to accept an aircraft above the PCN of the runway (in Dundee's case a PCN of 27), subject to a safety case, is a commercial decision for an airport to make in terms of the additional runway maintenance costs that it may incur if it regularly accepts aircraft that apply loads in excess of the PCN of the runway. Much will depend on whether the aircraft is operating at maximum weight or at a more limited weight of fuel and passengers, - and the extent to which the PCN will be exceeded. Operations up to 110% of the PCN are acknowledged in CAP 168. With a suitable safety case and low frequency use, higher loads might also be acceptable.

Table 3.2 – ACN's of Selected Aircraft for Flexible Pavements and 'Ultra Low' Sub-grade

Commercial Aircraft		**Business Jets**	
Model	**ACN**	**Model**	**ACN**
BAe Jetstream 32	6	Learjet 60	8
BAe Jetstream 41	7	Dornier 328 Jet (Fully Laden)	11
Saab 340B	9	Citation 750 / Citation X (Fully Laden)	12
Dornier 328	?	Bombardier Challenger 300	12
Aerospatiale ATR42	13	Cessna Citation X	12
Fokker F27	14	Dassult Falcon 2000	12
Aerospatiale ATR72	15	Dassault Falcon 900 (Fully Laden)	15
BAe ATP	16	Bombardier Challenger 605	16
Saab 2000	16	Bombardier Challenger 800	17
CRJ 100	17	Bombardier Global 5000	29
CRJ 200	17	Gulfstream V	31
Dash 8 – Q400	20	Bombardier Global Express	32
CRJ 700	24	Gulfstream G650	n/a
Embraer 170	26	Learjet 85	n/a
Embraer 175	26	Bombardier Global 6000	n/a
Embraer 190	?	Bombardier Global 7000	n/a
BAe 146-100 /Avro RJ70	26	Bombardier Global 8000	n/a
CRJ 900	27		
BAe 146-200/Avro RJ 85	29		
BAe 146-300/Avro RJ 100	31		
Embraer 195 (MTOW)	35		
Embraer 135	n/a		
Embraer 145	n/a		

Obstacles

3.10. Runway 09 is classified as a CAT 1 Precision Instrument runway, whereas runway 27 is visual only. As a result each runway has a different profile for obstacle clear zones. These are summarised in Table 3.3.

3.11. The AIP reports a number of obstacles in the approach and take off areas. The majority are trees, plus a pylon, chimney and windsock. Again similar types of obstacles are recorded in the circling area and at the aerodrome.

Table 3.3: Obstacle Clearance Requirements

Runway	Code	Take-Off Surface	Approach Surface	Transitional Surface
09	2C	1:25 (originates 60m before TORA). Length – 2,500m; Final Width – 580m.	1:40 (originates 60m before LDA). Length – 15,000m; Length of Inner Edge – 150m	1:7
27	2C	1:25 (originates 60m before TORA). Length – 2,500m; Final Width – 580m	1:25 (originates 60m before LDA). Length – 2,500m; Length of Inner Edge – 80m	1:5

Taxiways

Geometry

3.12. The taxiways at Dundee are also notified as Code 2 taxiways, in accordance with the requirements of CAP 168. Table 3.4 of CAP 168 states that the separation between the runway centreline and a parallel taxiway centreline should be 87m for this code of runway and taxiway. The current separation is 94 metres, and therefore materially in excess of the minimum.

Pavement construction

3.13. The taxiways are of a flexible construction. The asphalt material for the two main taxiways, Taxiway Alpha and Beta, comprise a thickness between 150mm to 380mm. The two other taxiways have an asphalt thickness between 55mm to 145mm

Pavement strength

3.14. There are five taxiways at Dundee Airport. The UK AIP for Dundee Airport (December 2012) reports a Pavement Classification Number (PCN) for each, as follows:

Taxiway Alpha	PCN 26
Taxiway Bravo	PCN 26
Taxiway Charlie	PCN 8
Taxiway Delta	PCN 8
Taxiway Echo	PCN N/A

3.15. Based on the data collected from a pavement investigation undertaken by URS (Scott Wilson) in July 2010 slightly different PCN's are suggested:

Taxiway Alpha	PCN 27
Taxiway Bravo	PCN 6 (lowest PCN advised)
Taxiway Charlie	< PCN 5
Taxiway Delta	PCN 22
Taxiway Echo	PCN N/A

3.16. However the URS (Scott Wilson) investigation was carried out using borehole techniques, - necessarily widely spaced, on land that had all been reclaimed from the estuary by inconsistent tipping of hard and soft materials such that the characteristics of the base material vary greatly over small distances. The URS (Scott Wilson) results showed PCN figures that were much higher than anticipated for parts of the runway and much lower than anticipated for some taxiways if viewed against the figures calculated by Dundee City Engineer prior to the takeover of the airport by HIAL.

3.17. The runway PCN of 27 appears to be consistent with earlier calculations but taxiways Bravo and Charlie have performed very much better in reality than the figures assessed by URS (Scott Wilson), with no evidence of tracking or deformation over many years of fairly unrestricted use. It might be worth considering a PCN re-assessment of the Dundee surfaces based on an alternative technique that would be more appropriate for highly variable base materials. The assumption made by Dundee City Engineer in the creation and upgrading of the runway and taxiway at various dates was that the construction had to be capable of coping with settlement and a weak and variable base material. Among other measures, fabric re-enforcement of the asphalt was widely employed in the initial the runway construction, and during several subsequent upgrading phases.

3.18. Taxiway Alpha is the widest taxiway and is of similar construction to runway 09-27. It is the main route that larger aircraft take between the runway and apron when operating at Dundee Airport, but Taxiway Bravo has also been used extensively for a wide variety of movements over many years, without any apparent adverse consequences. It would nevertheless be prudent, when resources can be found, to reconstruct Taxiway Bravo to improve its horizontal profile, slightly increase its width and ease the tightness of the turn midway along its length as well as upgrading its PCN.

Aprons

Geometry

3.19. The main apron serving the passenger terminal allows aircraft to operate on a self-manoeuvring basis with three aircraft stands. The main apron measures 145m x 31 metres, south of which it is served by a Code C parallel taxiway giving full 28.5m clearance from the stands. North of the apron a 7m wide hatched area gives clearance from apron floodlights and the apron service road.

Apron Construction

3.20. The main apron comprises an asphalt layer of approximately 300mm thick overlaying a 250mm granular layer, but thickening towards its northern edge as a result of overlays constructed to create southwards drainage from the terminal, away from which it slopes downwards at 1:100.

Apron Strength

3.21. Apron reconstruction in 2001, was intended to deliver a PCN of 27. However tests immediately following this work resulted in a flaw in the underlying asphalt layers being identified, reportedly due to the bitumen coating having been applied to inadequately cleaned stone. This caused the pavement structure to have a lower material stiffness than had been planned. A full remedy would have involved digging up the entire apron to considerable depth and was considered to be an excessive response. Compensation was therefore paid and it was expected that, as a result, the apron could show some tendency to incur small wheel indentations after the parking of higher PCN aircraft for long periods, but this was not considered to amount to a serious problem. It was anticipated that minor wheel indentations – often only visible at all after rainfall, would be resolved by a number of different repair techniques every few years, and that a permanent solution could await the life expiry of the surfacing. However, following the URS (Scott Wilson) report giving a PCN of 15 for the apron, it was overlaid by HIAL in 2010. This does not appear to have stopped the wheel indentation issue entirely as the fault lies at a lower level, but there is no evidence of a major problem. Continued overlaying may not now be the best solution, not least because it would not accord at all well with the drainage profile at the terminal wall.

Terminal

3.22. The current passenger terminal was opened in 1997; it is a single storey Yorkon modular building built in 1996, with a forecast life of at least 30 years. It comprises two check-in desks, landside retail, security, airside departures lounge, domestic and international arrivals, customs/immigration and an arrivals area. Baggage handling is a manual system using roller beds and lift conveyors.

Rescue and Fire Fighter Service

3.23. The UK AIP for Dundee Airport states that the level of Rescue and Fire Fighter Service (RFFS) available at the airport varies between RFF Category 3 and RFF Category 6. Categories 3 and 4 are provided at set times, whereas Categories 5 and 6 are provided only by prior arrangement. The range of aircraft with potential to operate from Dundee all appear to fall within a maximum of RFF Category 6, which is within the current capabilities of the Rescue and Fire Fighting service at Dundee Airport, albeit that permanent Category 6 working would involve an increase in staffing, and might require some improvement to RFFS facilities.

Fuel Facilities

3.24. Avgas and Jet A-1 aviation fuel are available. Jet A1 is provided directly by the airport from an underground store immediately north west of the main apron. A recent decision transferred Avgas provision to Tayside Aviation, which has built a bunded facility east of the main apron. The removal of Avgas from the airport fuel store has released underground tank capacity that could double Jet A1 storage capacity to circa 100,000 litres.

Aircraft Types Compatible with Dundee Airport

3.25. The question as to which aircraft types can use any airport is highly complex and involves a large number of variables. In the end, the final answer on a particular day and time will only emerge from the calculations conducted by a pilot immediately prior to take off. One approach to this issue is to size a runway for worst case scenarios related to the most demanding aircraft type and climatic conditions that can be anticipated. However this is anything but a cheap solution in terms of capital and operating costs and is not an option for Dundee Airport due to the restrictions of the site.

3.26. To give the non-technical reader a brief indication of the factors determining which aircraft can take off and land at Dundee Airport, with a full, or almost full, passenger load (which should be regarded as a fundamental yardstick as these considerations will be key to attracting scheduled services), they include the following:

- The basic runway performance of the aircraft at Maximum Structural Take Off Weight (MTOW).
- Whether the aircraft is configured for maximum density seating or not.
- The distance to destination – affecting to the weight of the fuel load.
- The baggage load (e.g. business schedules have much less baggage than holiday charters).

- The height of the runway above sea level.
- Whether the runway is flat and entirely horizontal.
- Whether the runway is wet and what are its measured braking characteristics.
- The temperature, barometric pressure and headwind-over-the-runway on the day.
- Upstanding obstacles along the extended centre-line of the runway for some distance outside the airport.
- Whether the aircraft is operating under Public Transport or Private Flight regulations.
- Whether the ACN of the aircraft is reasonably compatible with the PCN's of the airport surfaces.
- Whether the airport can provide the required category of Rescue and Fire Fighting Service.

Commercial Aircraft Types

3.27. Therefore, to provide a comprehensive list of aircraft and associated runway length requirements could provide a misleading picture of what is operationally and commercially realistic at Dundee, since the validity of any such numbers would be hugely modified by the application of some or all of the factors listed above. For the purpose of this review, the key requirement is to develop an understanding of those aircraft which can reasonably be expected to be able to use it reliably and consistently at more-or-less full passenger loads – and with the fuel loads needed to take them to useful destinations that are significant for the Dundee market. Almost all of the mainstream potential destinations that Dundee could expect to try to serve, with the exception of holiday charters, are less than 450 nautical miles from Dundee; that distance includes anywhere in the UK or Ireland plus Brussels, Amsterdam, Dusseldorf, Bergen and Stavangar.

3.28. A reasonable question might then be: What is the list of commercial aircraft types that could be expected to carry a full - or almost full passenger load from Dundee, to a destination 4-500 nautical miles away, with normal safety fuel reserves?

3.29. This is what is attempted in Table 3.4, but even this list requires some qualification because it wouldn't be appropriate or sensible to try to go that distance in some of the smaller or slower types listed, and notes to that affect have been attached.

Table 3.4: Airliners with a Reasonable Prospect of Operating Commercially at Dundee Airport

Aircraft Type	Propulsion	Seats	UK or Irish Operators?	Comments
BAe Jetstream 41	Turbo Prop	29	Yes	High costs per seat and speed, means that it is only likely to be suitable for shorter distance, high value business routes.
Dornier 328	Turbo Prop	31	Yes	Current London service aircraft. Fast, quiet capable of near continent destinations, but can only provide high fare services.
Saab 340b	Turbo Prop	34	Yes	Birmingham service aircraft until recently. Not suitable for long range destinations due and speed issues. Suit thin premium routes.
Embraer 135	Jet	37	Yes	Able to operate from London City, but would only achieve 400nm at full pax load with limited baggage. High costs per seat.
ATR 42	Turbo Prop	48-50	Yes	Current Dundee-Jersey service aircraft. Previously on the Birmingham route. Limited speed constrains it to UK routes, but is economical and only Cat 4 RFFS. Later 500 series is faster; new 600 series more fuel-efficient with more range.
Saab 2000	Turbo Prop	48-50	Yes	Has flown into Dundee on quite a number of occasions. Fast turbo prop, but availability is limited and cost per seat is relatively high.
Embraer 145	Jet	50	Yes	Could not carry a full passenger load to 450nm, and would be marginal on landing distance at Dundee. Relatively high cost per seat and RFFS Cat 6 due to aircraft length.
Bombardier Dash 8-300	Turbo-Prop	48	Yes	Operated Dundee-Jersey at full load for a number of seasons. A sound prospect for domestic services, but not fast enough for other than short continental destinations.
ATR 72	Turbo Prop	66 - 78	Yes	Has used Dundee on one occasion. Very economical and has the ability to allow lower fares, but limited speed would keep it to UK routes and short continental routes only.
Bombardier Dash 8 Q400	Turbo Prop	78	Yes	Very fast turbo prop. Reported to have the lowest operating cost per seat of any regional aircraft. Range of +600nm.
BAe 146-100/ Avro RJ 70	Jet	70+	No	Not likely to be available for service. Not considered economical.
BAe 146-200/ Avro RJ85	Jet	85-100	Yes	Extensively used at London City. Not now favoured elsewhere because of its high operating costs. Has been used to fly a Dundee-Toulouse charter with a full passenger load
BAe 146-300/ Avro RJ100	Jet	100-116	No	Still widely employed in Europe but being replaced more economical aircraft.
Embraer 170	Jet	70-78	Yes	Limited availability at the moment. A new design capable of long-range operations from Dundee at full payload.

Embraer 175	Jet	78-88	Yes	Greater availability. A stretched EMB 170, capable of carrying a full payload from Dundee for more than 500nm. Maximum payload range from Dundee shown in Appendix B.
Embraer 190	Jet	98-114	Yes	Limited availability in the UK at the moment. A new design capable of carrying a full payload from Dundee for more than 500nm. Maximum payload range from Dundee is suitable for domestic routes.
Embraer 195	Jet	108-124	Yes	Greater availability. A stretched EMB 190. Limited range from Dundee. Might manage London with a full passenger load – or with small restrictions. Has a high ACN at MTOW, but would be well below that from Dundee.
Airbus 318	Jet	107-132	Yes	Limited availability. Known to operate from London City at restricted passenger load. Might well be able to operate domestic sectors from Dundee but has a high ACN.

3.30. What this shows is that Dundee Airport is suitable for a range of aircraft (jet and turbo-prop) used by regional carriers. However, it is not suitable for narrow-bodied jets used by Low Cost Carriers (e.g. Airbus 319 and 320 and Boeing 737 variants) because of its runway length, load bearing and classification. There is little scope for changing this position without increasing the runway to Code 3, which requires wider aircraft and safety surface clearances than can be accommodated within the curtilage of the airport, implying extensive land reclamation from the adjacent River Tay at a cost of £40-50m according to work previously undertaken by the City Council. The passenger numbers required to justify such an expansion go well beyond the scope of this report, and consequently, as agreed with Transport Scotland, such an option is therefore not considered further in this document,

Private and Chartered Business Aircraft Types

3.31. Attempting to list the range of business jets, turboprops - and indeed piston-engine aircraft that can use Dundee Airport, is unnecessary because of the large number of aircraft types involved and the varied regulations under which they operate. Essentially, Dundee can handle the full range of small private and business aircraft including more or less all of the Learjets, Citations, and Falcons. It currently accepts Gulfstream 4's and 5's and Bombardier Global Expresses.

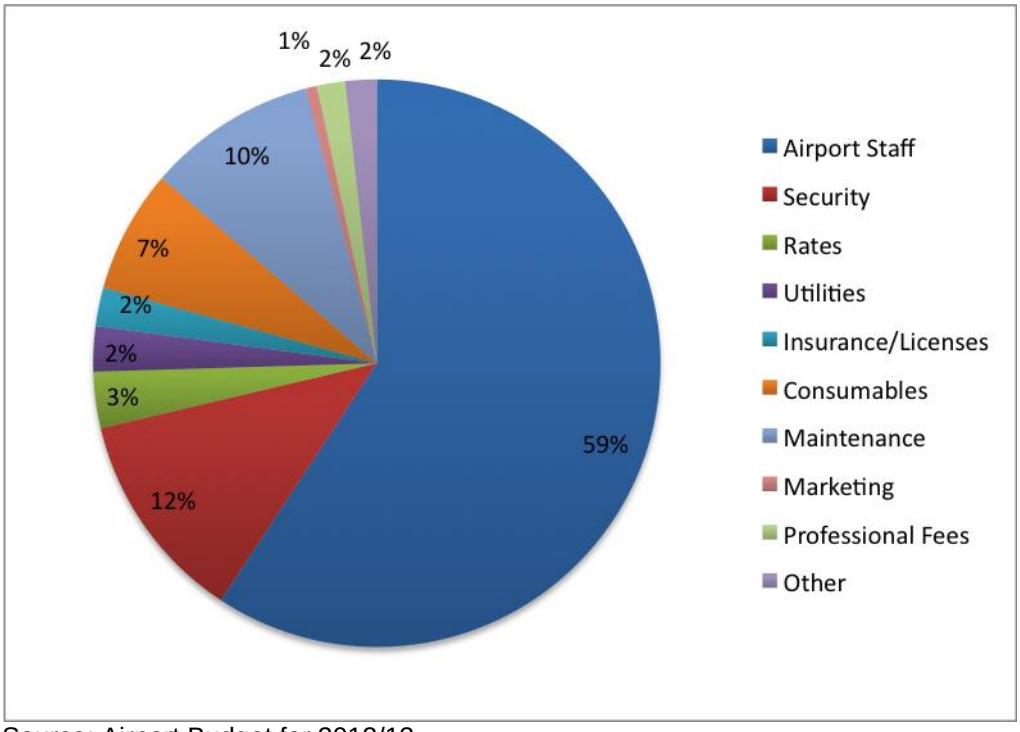
3.32. The largest visitors in business/private configuration have included the Embraer 190 Exec, and Queen's Flight BAe 146's. Gulfstream V's routinely go transatlantic from Dundee and a Global Express has come directly from Tokyo across the Pole. A Falcon 900 went one-stop to Tokyo, refuelling at Novosibirsk. Business aviation can therefore function fairly freely at Dundee with the exception of very large private aircraft. The main charter and fractional ownership operators are regular users of Dundee at the present time. The main restriction on its future development will be a shortage of enough apron space to permit long stopovers by business aircraft, but that can be remedied by investment.

4. AIRPORT OPERATIONS AND MANAGEMENT

4.1. As with all small airports that have limited passenger traffic and under-developed sources of alternative revenue generation, the fixed costs and overheads associated with meeting the core safety and security requirements of running an airport, impose a significant financial burden on Dundee Airport that it is simply not possible to pass on in full commercially at current traffic levels.

4.2. This can be seen in the proportion of the operating budget - nearly 80% - taken up by fixed costs such as staffing and security costs, rates, utilities and insurance in Figure 4.1, compared with what might be categorised as variable costs in the form of the remaining categories.

Figure 4.1: Distribution of Operating Costs by Category 2012/13



Source: Airport Budget for 2012/13

Table 4.1: Staff Structure Dundee Airport

Section	Staff No
Admin + Passenger Handling	10
ATC	7
ATE	1
Security	18
RFFS	26
Airside Ops	1
Cleaning	1 FTE
Other	1
Total	66

Source: Airport Data

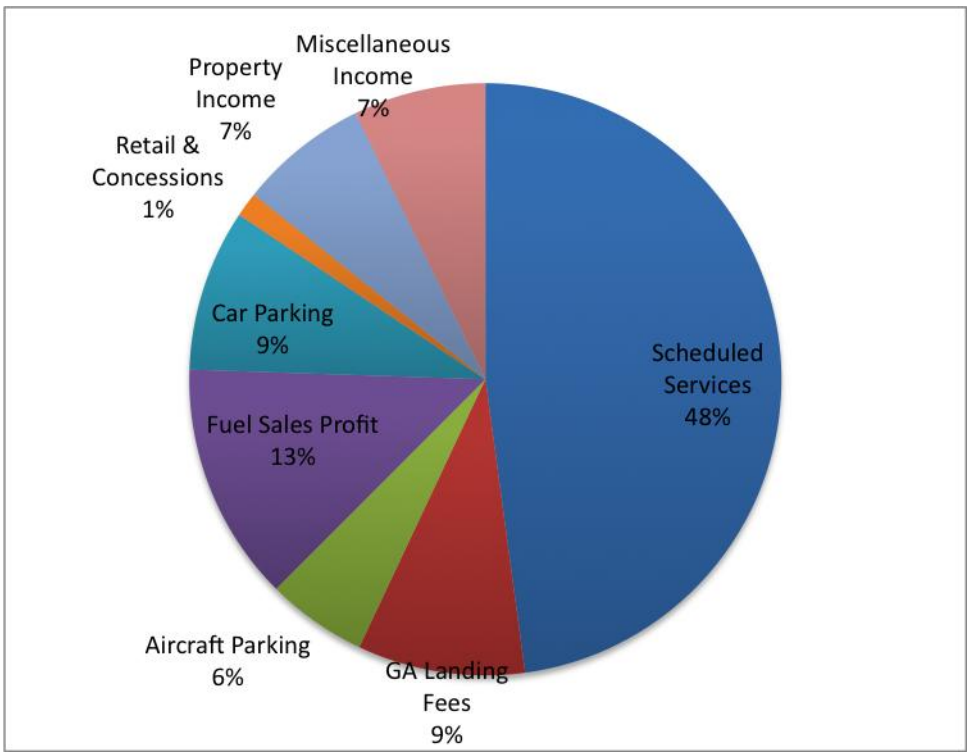
4.3. As might be expected, a multi-tasking environment has long been a feature of the Airport, including pre HIAL's takeover. This is particularly the case in terminal and ground handling, where the Administration staff combine providing check-in and passenger information alongside their other duties, and fire fighters carrying out baggage handling, grass-cutting, bird scaring and some maintenance. This is reflected in the staffing roster in Table 1; whereas at larger airports at least some of these tasks might typically have dedicated staff or be contracted out.

4.4. From a relatively brief look at the data provided by the Airport and a single afternoon's visit, it is not obvious that the Airport is significantly over-staffed, save for potentially in the RFFS, where 26 rostered personnel to provide standard Category 4 fire cover (upgradable to Cat 5 or Cat 6 with 24 hours notice) seems excessive. It is understood, however, that the roster is in the process of being reduced to 22, which seems more in line with the fire cover required given current traffic (i.e. D328 on the London City service and GA with limited numbers of business jets), and the current operating hours:

Monday - Friday	06.30 - 22.00 Local
Saturday	08.00 - 16.45 Local
Sunday	09.15 - 22.00 Local

4.5. In terms of revenues, Figure 4.2 indicates the primary sources.

Figure 4.2: Sources of Income 2012/13



Source: Airport Budget for 2012/13

4.6. Aeronautical charges make up 63% of total income, with nearly three-quarters of that (or nearly 50% of the total) coming from scheduled passengers. This reflects recent declines in passenger numbers and a return to average levels of scheduled passengers in the last decade would produce a materially different pie chart. Non-aeronautical income is 23% of the total if you include net profits on fuels sales; Jet A-1 is available from Dundee Airport, but Avgas has been outsourced to Tayside Aviation, which was its principal customer. This figures is low, even compared to other small airports. This is partly a function of the airport's limited passenger throughput and its business orientation, where speed and convenience rather than dwell-time and discretionary expenditure are the order of the day, but property income, which is an important source of alternative revenue for many small airports, is also low at 7%.

4.7. This analysis gives rise to four observations, which are particularly relevant to the Airport's future development and commercial viability:

- Firstly, it is highly dependent for its revenues on the most variable and highest risk source, notably passenger throughput. This means that every effort must be made to increase this traffic; with this in mind the extremely small marketing budget is particularly noticeable.

- Second, the introduction of car parking charges was raised a number of times in our stakeholder consultations. Although not on the same level of some of its competitors, in the context of the modest sums it generates, there must at least be a question mark about the cost benefit of this policy given the overriding need to make Dundee Airport as attractive as possible to passengers.

- Third, like most small airports, it must of necessity place diversifying income streams at the heart of the airport's business strategy if the dependence on passenger flows is to be reduced.

- Fourth, the limited income received from GA related sources when compared with the extent to which it dominates activity at the airport. Tayside Aviation would argue that the Airport's operating budget would be substantially lower if the scheduled traffic were removed. But even with fire cover reduced to Cat 3, lower security and admin/check in costs and less expenditure on maintenance and consumables, it is unlikely that the Airport could be run for the c£200,000 a year it receives from Tayside Aviation – or close to it.

4.8. Dundee Airport had been operating at a loss of over £2 million per year from 2004 to 2007 under the management of Dundee City Council. In the first full financial year of operation under HIAL, 2008/9, the airport's loss was reported as £2.6 million. The operating budget for 2012/13 forecasts an operating loss of £2.435m, based on income of £815,000 set against costs of £3.25m; a charge for HIAL overheads, will prospectively raise the overall subsidy requirement to c£2.75m.

4.9. The increased losses since HIAL took over operation of the airport are in part a function of the requirement to make a contribution to Group overheads, but also reflect the requirement to standardise terms and conditions with the rest of HIAL under TUPE Regulations. This was done as part of the 2011 pay offer following the settlement of a dispute which saw the terms and conditions of fire fighters, air traffic controllers and others in the Prospect Union harmonised in return for an agreement on flexibility from the staff.

4.10. Since taking over the management of the airport HIAL have implemented a number of initiatives to seek efficiencies, harmonise procedures and bring operating standards in line with those of the group as a whole. These include:

- Key management and 'accountable manager' positions (route development and marketing, financial, senior Executive and Board responsibilities) are shared across the group.
- Airport security has been brought in-house in common with the rest of the HIAL group. The roster of fire fighters is due to reduce from 26 to 22.
- There have been synergies across the group in terms of training and recruitment for key staff such as ATC and fire fighters, and in the acquisition and maintenance of equipment and supplies.
- Airport advertising is being offered on a group-wide basis by Airport Partners of Harrogate.
- Dundee Airport has been incorporated fully into the HIAL website and marketing effort with initiatives such as the Aurora HIAL group glossy consumer magazine featuring Dundee alongside its other Scottish airports.

4.11. So there is clear evidence that HIAL have been endeavouring to keep a tight rein on costs while integrating Dundee fully within the wider Group. While there is always more that can be done, it does suggest cost cutting is likely to be an area of diminishing returns unless the intention is to shut the Airport to scheduled traffic. Instead the focus needs to be on revenue generation across a number of markets, but done in such a way that there is little upward pressure on costs, at least until the existing fixed cost resource base is being used much more productively as a result of enhanced activity.

5. MARKET ASSESSMENT

5.1. In our response to the study brief, Northpoint Aviation set out its intention to undertake a high-level quantitative assessment of the potential market for air services from Dundee, to sit alongside the qualitative evaluation provided by the stakeholder interview process (see Chapter 7). This has encompassed:

- An analysis of route-based demand to support commercial passenger services, with a particular eye on understanding catchment leakage.
- A consideration of whether there might be a cargo market from Dundee, although given previous attempts to attract it to the airport, not with any real expectation that this would be material.
- An overview of the scope for further development of the existing Business Aviation and GA (e.g. pilot training, aero club, private flying) activity.
- An assessment of the potential for attracting offshore servicing (particularly wind farm arrays in the North Sea).
- A strategic look at Dundee's competitive position for attracting commercial flight training/testing, fixed wing and rotary emergency service operations and use of the airfield by the military.
- MRO and aerospace related activities including aircraft recycling, customization, servicing and training.
- Other airport 'related' or 'associated' (e.g. hotels, business centres, renewable energy) activities, or non-aviation commercial property development.

Passenger Demand Assessment

5.2. The first of these market assessments required access to CAA survey data, the latest of which for Scottish airports dates back to 2009, although route based data for services from Dundee has been acquired from various sources and is summarised in Chapter 2. The survey data is the key to understanding catchment demand and the competition for traffic within that catchment from other, larger, Scottish airports. It also helps to identify destinations – direct and indirect – of Dundee focused air travellers and journey purpose (i.e. business and leisure split). In addition we also looked at some MIDT[1] data provided via Transport Scotland, to confirm the feedback we were getting from various stakeholders about pricing on existing (or recently terminated) Dundee services and inform the crucial issue of likely yields and the price sensitivity of demand.

[1] MIDT stands for Market Information Data Tapes (or Transfer), which is a source of sales information on airline flight transactions booked through GDS systems and unlike CAA data allows analysis of fares and yields.

5.3. As discussed further in Chapter 7, we have not spoken at length to potential airlines about operating services from Dundee. Those discussions are likely to be commercially sensitive, and having consulted both HIAL and Transport Scotland it was agreed that it would not be prudent to do so before the findings of this report have been carefully considered and a strategy for route development has been determined. Based on our analysis of the Airport's operational capabilities and examination of the underlying travel market within Dundee's core catchment, what we are able to do at this stage, however, is identify those airlines we believe that there is merit in speaking to and those which it is not.

5.4. The over-arching aim is to identify potentially sustainable markets from Dundee and what kind of commercial offer and marketing support might be required to attract suitable airlines.

The Catchment Area of Dundee Airport

5.5. Table 5.1 records the distance and travel times by car to the other principal airports in Scotland where there is evidence of material flows of passengers from the Dundee catchment area. The closest, and by far the most important because of its size and traffic mix is Edinburgh, some 1hr 15 minutes away, although a number of stakeholders have mentioned that congestion on approach roads from the north can add to journey times at peak times, during which 1hr 30 minutes is probably a more realistic time to allow. It is also worth noting that to catch an early morning (i.e. up to 7.30am) flight at Edinburgh, with the aim of getting to a meeting starting at 9.30am or 10.00am in central London, probably requires a 5am departure from Dundee, whereas using a direct flight from Dundee, taking into account the shorter distances between terminal and car park than at Edinburgh and the greater scope for fast-track processing through the Airport, could push a wake up call to a more respectable 6.30-6.45am.

Table 5.1: Location Relative to Major Competitors

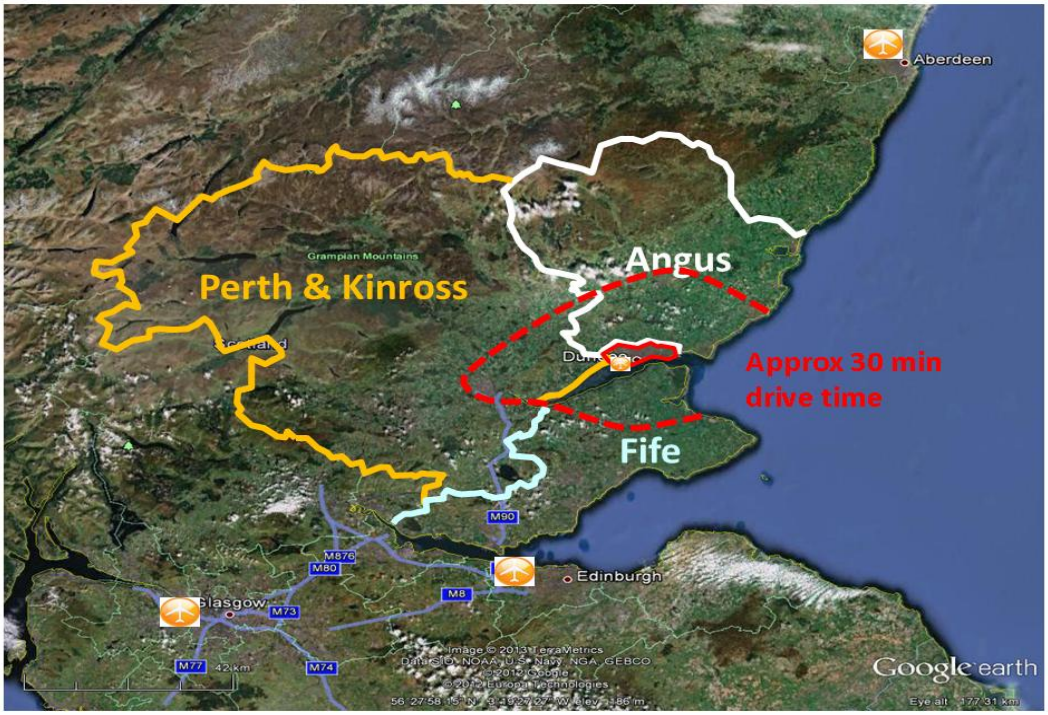
Alternative Airport	Distance	Time
Edinburgh Airport	53 miles	1 hr : 12 mins
Aberdeen Airport	71 miles	1 hr : 37 mins
Glasgow Airport	90 miles	1hr : 46 mins

5.6. Based on these drive times, which exclude the time require to access the remote car parks (at Edinburgh this is typically 10-15 minutes), we believe the core catchment area for services from Dundee Airport would be between 30-40 minutes as in Figure 5.1, whilst one hour provides an appropriate proxy for the extended catchment boundary, However, due to the terrain and the location of key population centres, not all the population within those Counties can be considered to be within the 'core' catchment area.

5.7. So for example, in the case of Angus and Dundee City, the vast majority of their population lies within the Airport's core catchment area:

- Angus has a population 110,000 and virtually all of the populous parts of Angus are closer to Dundee than to Aberdeen Airport.
- Dundee City has a population of 152,000, and all of them lie within close proximity to the City's airport.

Figure 5.1: Dundee Airport Core Catchment Area



5.8. However, in the case of Perth and Kinross and Fife the situation is somewhat different:

- Perth & Kinross has a population of 148,000; much of it is concentrated towards the South and East of the County due to the terrain elsewhere including upland areas such as Ben Cleuch and the the range of hills further South. The result is the vast majority of the County of Perth and Kinross is located closer to Dundee airport, in drive time, than to either Edinburgh or Glasgow. As such we have assumed that 75% of the County's population is within the Dundee True catchment area.
- Fife has a population of 360,000; approximately 20% of this is located within the core catchment as demonstrated by Table 5.2.

Table 5.2: Population Distribution Within Fife

Major Towns in Fife		Closest Airport			
Town	Population	Dundee Airport		Edinburgh Airport	
		Miles	Minutes	Miles	Minutes
Kirkcaldy	49,000	32	55	26	40
Dunfermline	48,000	45	52	15	28
Glenrothes	39,000	26	43	30	39
St Andrews	17,000	15	30	47	73
Rosyth	12,000	47	52	12	20
Dalgety Bay	10,000	48	53	13	22
Methil	11,000	31	51	32	45
Cowdenbeath	12,000	41	50	18	27

5.9. In Fife, St Andrews is the only significant town that is closer to Dundee than Edinburgh Airport, and therefore, even though the County borders Dundee City, only 20% has been allocated within the core catchment of Dundee in line with the boundaries of the old district of North East Fife (see Table 5.3), because the majority of the catchment is located significantly closer to Edinburgh Airport.

Table 5.3: Population of Old Districts within Fife

Old District	Admin Centre	Population 1996	Percentage of Total
Dunfermline	Dunfermline	129,830	37.3%
Kirkcaldy	Kirkcaldy	148,450	42.6%
North East Fife	Cupar	69,930	20.1%
Total		348,210	100.0%

5.10. Taken together, this analysis suggests the Airport's potential core catchment area has a population of 450,000. Given Dundee's relative geographic peripherality within the UK and EU, the long journey times associated with the use of alternative surface modes and comparison against other small regional airports serving similarly populated and located catchment, a propensity to fly of 2 to 1 would be a reasonable benchmarked expectation. This would also be consistent with that of the air market in Scotland as a whole, suggesting the potential for a passenger throughput of over 1 million passengers for Dundee Airport, However, if the relative strength of the competition offered by Edinburgh Airport and its well-developed low cost carrier presence is taken into account, it would certainly be prudent to reduce this figure by 50%, possibly more.

5.11. The high-level catchment analysis, suggests that in principle there could be a potential medium to long-term passenger market for Dundee Airport in a range between 250-500,000. However, achieving these kind of figures is very much dependent on the right fare levels, frequency and route structure being developed. It is worth noting that these kind of projections are

consistent with the forecasts in the Scottish Consultation Document in the lead up to the 2003 Air Transport White Paper and route network comprising:

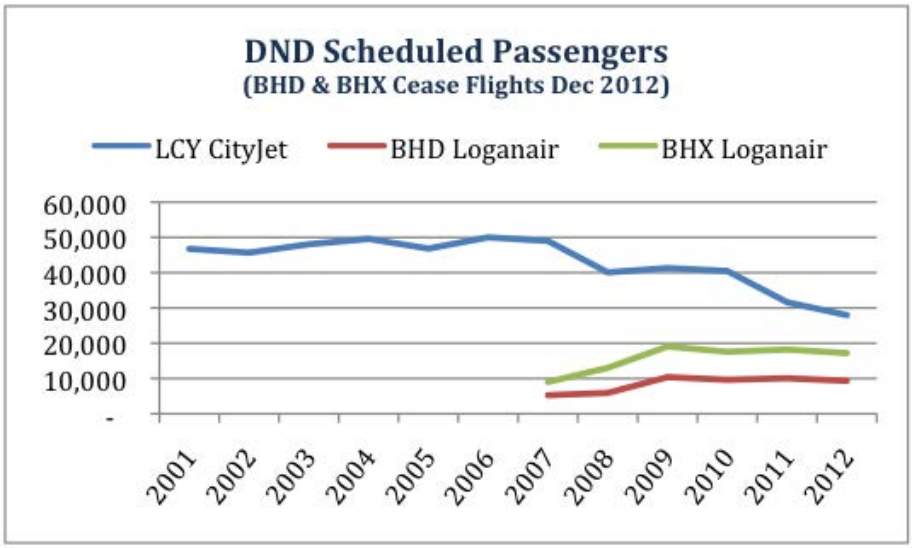
- A link to London and small network of regional domestic services;
- one or two international links (e.g. to a hub like Amsterdam or Paris – which we are aware has been looked at in the past); and
- some bespoke charter flights to Jersey and a number of sun destinations;

This hypothesis is examined more closely in Tables 5.4 and 5.5 below.

Traffic Leakage to Other Airports

5.12. At the moment, however, Dundee Airport's passenger throughput is less than 50,000 and falling (see Figure 5.2). This points to the fact it is currently not providing local passengers with the right commercial offer and that as a consequence, large numbers of them (more than 95%) are using other airports. This is commonly referred to as 'leaking traffic'.

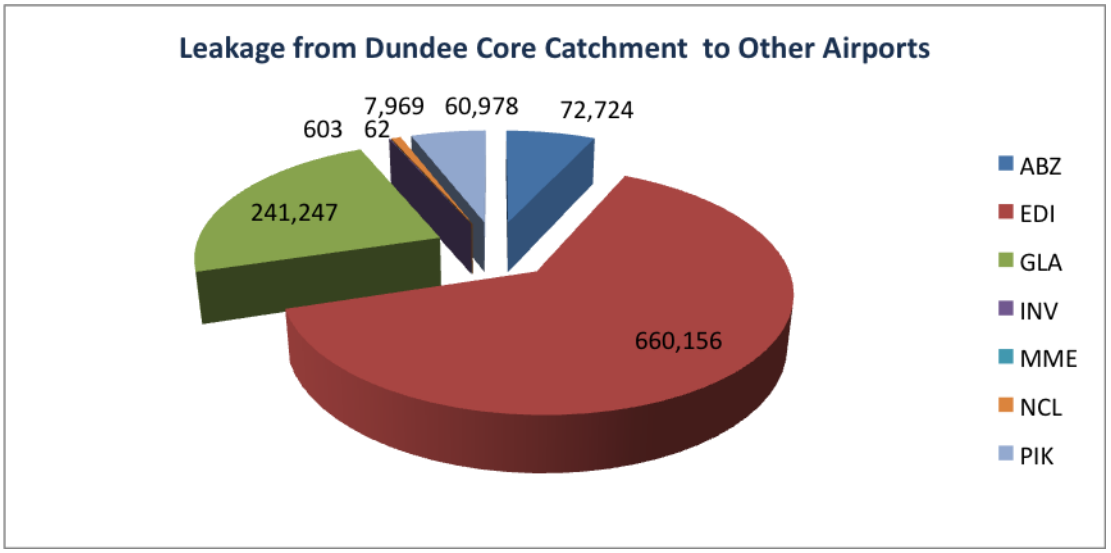
Figure 5.2: Passenger Throughput by Route at Dundee Airport



Source: CAA Data

5.13. Figure 5.3, which is based on data from the last detailed CAA survey in Scotland in 2009, illustrates exactly this point, with Edinburgh Airport shown as capturing two-thirds of Dundee's core catchment traffic, which totals over 1 million passengers and Glasgow nearly a quarter; and of this leakage, around 25% is business orientated, 75% leisure.

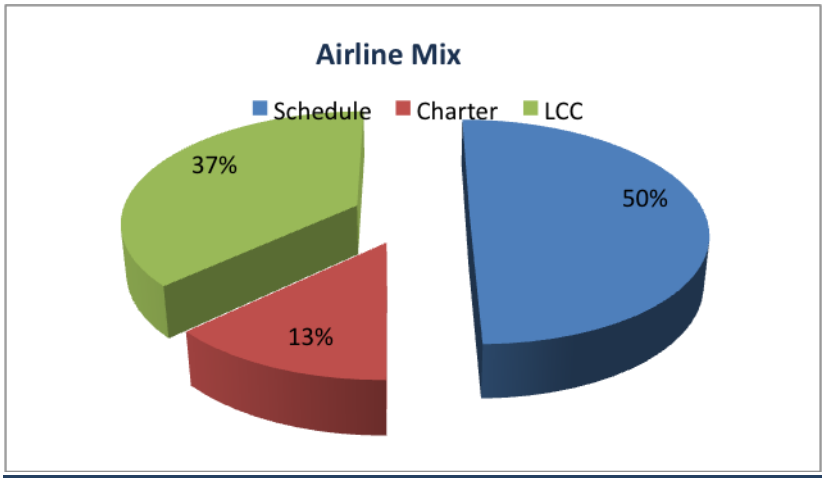
Figure 5.3: Leakage of Passengers from Dundee Core Catchment to Alternative Airports



Source: CAA Survey Data 2009

5.14. Figure 5.4 identifies the kind of carriers that traffic is using.

Figure 5.4: Airline Mix of Passengers Leaking from Dundee's Core Catchment



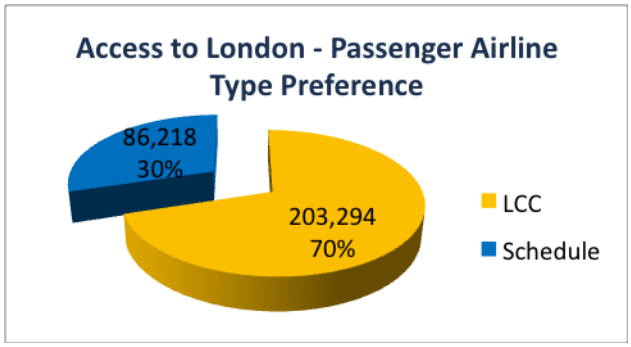
Source: CAA Survey Data 2009
Note: Scheduled includes UK and overseas network and regional carriers

London Market Overview

5.15. In view of the fact that it is the only commercial service which Dundee Airport currently has left, the decline in passenger numbers on the London City route since 2006 (50,015) to 2012 (27,961) is particularly noteworthy. Presently, Cityjet have wet leased a D328 Turboprop from Suckling Airways and operate a twice daily service, and this smaller aircraft is still operating at a load factor of 64% despite the small numbers of passengers overall, but at prices that as we report in Chapter 7, most stakeholders are finding difficult to sustain. They have probably taken the view that if you top slice the higher end of the Dundee catchment, the yield in the remainder quickly falls away and that given the very high charges for this kind of aircraft at London City and operationally for the Avro RJ85, which is Cityjet's mainstay aircraft, it might not be able to operate a twice-daily service from Dundee and remain viable.

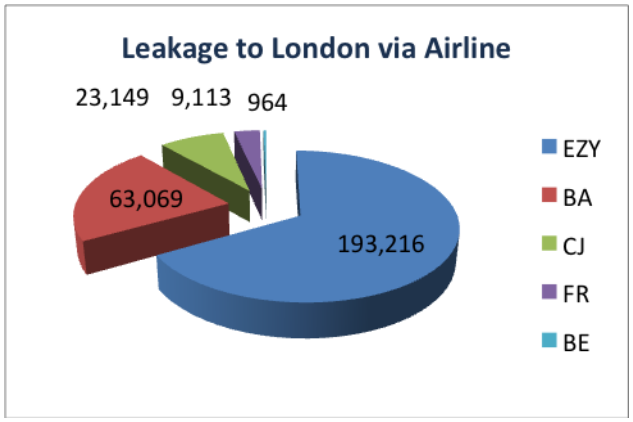
5.16. As Figures 5.5 and 5.6 illustrate, even though there is ten times as much traffic flying to London using other departure airports as is currently using Dundee, the great majority of it is low cost or attracted to use the national carrier en route to Heathrow. Given its physical constraints, this is a difficult, though by no means impossible market for Dundee to compete in.

Figure 5.5: Leakage to London by Type of Airline Type



Source: CAA Survey Data 2009

Figure 5.6: Leakage in London Market by Airline



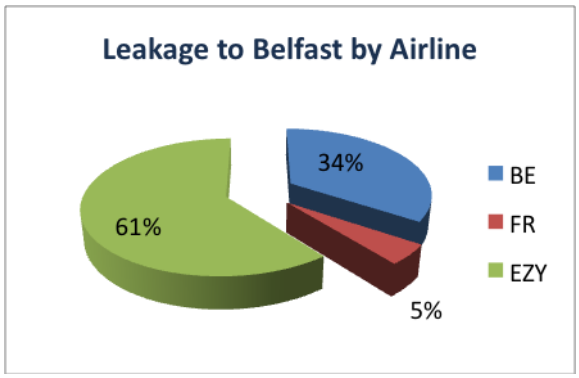
Source: CAA Survey Data 2009

Regional Services

5.17. As detailed in Chapter 2, having had scheduled links to Birmingham and Belfast for a number of years, in December Loganair withdrew those services in December 2012 citing low yields and declining passenger numbers as the principal cause. Our analysis suggests there is sufficient demand for travel to both cities within Dundee's core catchment to operate twice-daily services using a 30 to 50 seat aircraft. However, our 'leakage' analysis reveals that the majority of the passengers (c70%) are travelling for leisure purposes. For this journey type price is a major determinant behind airline choice and hence in the case of Belfast they tend to gravitate towards Easyjet for Belfast International and Flybe to Belfast City.

5.18. In contrast, traffic to Birmingham from the Dundee Catchment area has, at 62%, a surprisingly high business content (see Figure 5.8), and as cost is normally less price sensitive for these passengers the dropping of the BHX route by Loganair is less readily understood. We suspect that its franchise partner Flybe may have been offering the same destination at a substantially discounted price from Edinburgh, or possibly they may have just identified a more profitable use for the aircraft.

Figure 5.7: Airlines Used by Passengers From Dundee Catchment to Belfast



Source: CAA Survey Data 2009

5.19. Again, Dundee Airport faces the challenge of finding a way of offering services, for which there clearly is a market within its catchment area, at a price the market is willing to pay given the competition offered from Edinburgh some 90 minutes away. Given that this core issue was confirmed by many of the stakeholders we spoke to when preparing Chapter 7, finding a solution is the key to finding a sustainable long-term commercial future for the airport.

Potential Route Opportunities

5.20. Based on our earlier assessment of the Dundee core catchment area, we have used CAA 2009 survey data to examine empirically (rather than through the use of benchmark estimates as earlier), the principal markets for air travel. These are set out in Table 5.4 by country.

Table 5.4: Catchment Demand by Country

Top Ten Countries by Purpose					
Business		**Leisure**		**Total**	
UK	192,759	UK	300,896	UK	493,655
Netherlands	19,534	Spain	137,166	Spain	138,919
Germany	8,821	Netherlands	33,966	Netherlands	53,500
Ireland	7,519	Ireland	33,892	Ireland	41,411
France	7,239	US	31,360	Germany	38,078
Norway	6,059	France	29,457	France	36,696
Denmark	2,385	Germany	29,257	US	33,272
UAE	2,185	Turkey	24,872	Turkey	24,872
US	1,912	Poland	20,015	Poland	21,925
Poland	1,911	Italy	17,602	Italy	19,074

Source: CAA Survey Data 2009

5.21. The same data is then broken down by city pair in Table 5.5 and the potentially realisable market traffic estimated based on an assumed 60% penetration rate. This figure is typical of airports with small, geographically discrete, under-served and relatively high-density catchments similar to Dundee, but requires strong marketing support and a pragmatic approach to airport tariffs until routes have become fully established if it is to be achieved.

Table 5.5: Catchment Demand by Destination Airport

Potential Route Opportunities as Implied by DND Catchment Leakage									
Domestic	**O&D**	**Connecting**	**Total Leakage**	**Market Size @ 60% Penetration**	**International**	**O&D**	**Connecting**	**Total Leakage**	**Market Size @ 60% Penetration**
Heathrow	39,881	74,808	114,690	**68,814**	Amsterdam	20,721	32,630	53,351	**32,010**
Gatwick	41,172	20,140	61,313	**36,788**	Dublin	30,045	-	30,045	**18,027**
Stansted	36,562	4,281	40,843	**24,506**	Malaga	25,403	-	25,403	**15,242**
Luton	40,186	-	40,186	**24,111**	Palma	20,737	-	20,737	**12,442**
Birmingham	37,990	1,791	39,782	**23,869**	Tenerife	20,362	-	20,362	**12,217**
Bristol	26,054	-	26,054	**15,632**	Paris	11,560	7,076	18,636	**11,182**
Belfast International	24,373	-	24,373	**14,624**	Dubai	3,666	14,228	17,894	10,737
Southampton	17,971	1,416	19,387	11,632	Dalaman	17,753	-	17,753	10,652
Cardiff Wales	17,218	-	17,218	10,331	Frankfurt	5,369	6,975	12,344	7,406
Scatsta	16,888	-	16,888	10,133		**150,248**	**53,934**	**204,182**	**129,915**
London City Airport	15,277	-	15,277	9,166					
Manchester	6,286	8,412	14,698	8,819		**Implied Route Opp**			
Southend (new alternative to STN LTD for O&D pax)						**Runway Ext Required**			
Total	**319,859**	**110,850**	**430,709**	**258,425**		**Slot Constraint**			

Source: CAA Survey Data 2009
Notes: O&D stands for Origin and/or Destination

5.22. The country-based analysis indicates the UK (most notably London) and the Netherlands as the biggest business travel markets from within the core catchment area, with smaller requirements associated with Germany, Ireland, France, Norway and Denmark. All of which points to the potential significance of a northern European hub connection (in addition to London), as being important for transfers to a range of destinations, if what otherwise are individually relatively small markets are to be made accessible by air from Dundee Airport. The leisure market is dominated by VFR (Visiting Friends & Relatives) traffic within the UK and traditional sun destinations in Spain. However, there is material demand to France, Italy and Turkey, but at levels that suggest they would be best served by limited summer charter frequencies. There are markets of over 30,000 to Ireland, Germany (which may include a significant component of inbound traffic) and the USA that would also require access to a hub if served from a local departure point.

5.23. Table 5.5's focus on route specific markets highlights that the two largest individually are both to London, but to airports (i.e. *Heathrow and Gatwick*), where there are slot constraints and small aircraft are increasingly being denied access because of flat rate landing charging structures that substantially favour larger aircraft in terms of overall costs per passenger. It is unlikely, therefore, that these routes will be developable in the near future. But were approval to be given to build a new runway at Heathrow (or a new hub elsewhere in the South East), then re-establishing Dundee's former link to a UK hub served double daily, year round, by an E170 or E190 aircraft operating at load factors close to 70%, has the potential to attract 70-100,000 passengers and provide a much better under-pinning for a more commercially self-sustaining airport, than the current London City service. In the interim, however, a number of alternative options that need to be explored, especially with the speculation surrounding Cityjet's future as outlined in Chapter 2. These could include:

- Looking for a carrier that would be willing to use a 50-70 seat aircraft on the London City route and so bring down fares from Dundee to a more competitive level. A Fokker 50, ATR/600 or E170, all of which are compatible with operating into London City, could do the job.
- Examining Stansted, Luton and Southend as lower cost alternatives to the more expensive London City Airport; all face the key restriction of aircraft capability from Dundee, but an E145, a Q-400 or even an E175 might be ideal if they are capable of being operated at close to maximum payload, as seems likely on such a short sector.

5.24. The most promising new route destination is *Amsterdam*, which subject to a code share agreement being reached with KLM, theoretically based on the size of the market within Dundee's catchment, could sustain a double daily, year round service with a 50-seat aircraft offering both point-to-point and connecting onward travel. Variations to this might include 'testing' the route by deploying D328 or Saab 340 based at Dundee, to fly to Amsterdam 3x daily on peak days, but with one of the rotations including a stop at Inverness en route in each direction. As in the case of the London market, the crucial issue will be yields that could potentially be achievable from Dundee

compared with fares and accessibility costs at from Edinburgh. A third, and potentially the most pragmatic start-up configuration, would be to extend the existing Inverness-Amsterdam service to Dundee, preserving the core INV-AMS sector, but adding an additional discrete market, which could then maybe justify at double-daily service to the benefit of both cities, for the cost of a 20 minute sector between DND-INV. Given surface travel times (road and rail) of up to 2.5-3.0 hrs between the two cities, and the relative proximity of both airports to their core urban areas, it is not beyond the realms of possibility given good shuttle bus links, that what might at first appear a 'dead leg', could itself attract a small market.

5.25. *Birmingham* still looks a strong route because of its ability to attract business traffic, but it would either need to be marketed more strongly or perhaps could make use of either a 19-seat turboprop (e.g. a Jetstream 31/D228), or more realistically the larger, quicker and better specified 31 seat Dornier 328, flown as a middle of the day rotation between London City (or other) flights, with the higher yielding business market being the principal target. A larger aircraft (e.g. an ATR 42) would probably be more suitable if fares capable of attracting leisure passengers are to form part of the route strategy.

5.26. *Manchester* may also merit more detailed attention, even though at first glance the level of un-served traffic may seem too small. The rational is:

- The source CAA survey data in this case may be a bit misleading as the surface travel time from Edinburgh and Glasgow to Manchester at just between 3.25-4.0 hrs (the classic cusp for rail vs air travel), means that it offers competition to the aviation market between those cities and which as a consequence is not as strong as it might otherwise be But with a further 1.5-2.0 hrs travel time by road or rail, Dundee is well beyond the normal 3.0-4.0 hr rail vs air cut-off giving air a potentially stronger market share.

- Manchester is arguably now the UK's second city with strong business and professional services and the largest concentration of tertiary education capacity in Europe. As such it must offer potential to 'stimulate' currently under-developed business links and an alternative to reliance purely on London and Edinburgh.

- Finally, Manchester Airport (MAN) has been developed as a mini-hub by Flybe to aggregate thin route domestic traffic and hence support a wider network of regional connections at enhanced frequency. A route to MAN, in addition to stimulating both a business and leisure/VFR market, could provide an option for Dundee passengers seeking onward connections to places such as Exeter, Norwich, Southampton, Newquay, the Isle of Man, the Channel Islands and even Belfast if not flown directly as well as greater range of short and long haul destinations than available from Edinburgh or Glasgow.

5.27. So in addition to the potential baseline point-to-point traffic on the route shown in Table 5.5, it may also be possible to serve indirectly existing traffic to

other thin domestic markets from Dundee that are currently using Edinburgh or Glasgow, alongside those international business and leisure destinations where Manchester offers services at competitive frequencies. It is this combination of potential direct and indirect transfer traffic that leads us to conclude that there could be an overall passenger market for flights between Dundee and Manchester two or three times greater (see Table 5.7), than that which recent CAA data suggests.

5.28. From Table 5.5, other domestic route options that also may merit exploration include:

- *Bristol*, especially as a new hourly bus service from Bristol Airport to Cardiff may help to combine these markets more effectively.
- *Southampton* direct in a D328 with an onward leg to Paris or Jersey, or with a drop-in en route to East Midlands/Leeds Bradford or possibly Durham Tees Valley/Humberside (in all of which Eastern have a presence).
- *Norwich* direct, given the right fares to underpin core business demand from Aviva and offshore renewables traffic, and perhaps as part of a schedule in which the aircraft flies onward from Norwich to Paris or Germany (Frankfurt or Dusseldorf), or initially indirectly via the Flybe Manchester mini-hub.
- *Belfast* limited to 3x week around weekends and flown with a Q-400 to help reduce costs and make fares more competitive out of Dundee.

5.29. Internationally, *Dublin* is the strongest scheduled candidate after Amsterdam, and might be made stronger by a drop-in to Carlisle and/or the marketing of pre-clearance for the USA as part of the interline process at Dublin. Otherwise, the demand for *Malaga and Palma* is certainly large enough to justify a once or twice a week charter during the summer. The aircraft typically used to operate this length of sector (c3-3.5 hrs), are incompatible with the performance restrictions imposed by Dundee's runway. But with an intermediate stop at Exeter or Newquay, both of which are directly en route, within range from Dundee's short runway whilst having long enough runways of their own to facilitate the onward leg. A Flybe E175 or E195 could readily make this routing and thereby combine Dundee holiday traffic to Devon and Cornwall with those heading further south to Spain and Majorca from Scotland and Cornwall.

5.30. Finally, it may also be worth looking further into:

- Small 'outbound' charter seasons to *Devon & Cornwall, Brittany, Guernsey* (as well as Jersey) and the *south or west of Ireland*.
- A short 'inbound' charter season from *Germany, Switzerland and/or Scandinavia* to offer access to the nearby championship golf courses, the city's of St Andrews and Perth as well Dundee, the Fife Coast and the Highlands. Tourism infrastructure within Scotland would need to be galvanised to support this.
- Possible x 2-3 weekly service to *Norway* (Stavanger, Bergen or Oslo) and a similar frequency to *Denmark* (Billund or Copenhagen), perhaps

as part of an onward service to Belfast or Dublin, to combine renewables and oil traffic, with students, those on business and ourism visitors travelling both ways.

- Combining a service to *Luton or Stansted*, with onward travel of the aircraft beyond Dundee x3-4 weekly to also serve *Shetland* (i.e. Sumburgh), the *Western Isles* or even the *Faroes*.

5.31. Whilst the Stakeholder interviews summarised in Chapter 6 appear to support certainly the core services outlined above, we have not undertaken the detailed analytics or route economic assessments that would be required before approaching airlines for reasons set out in Chapter 11. But based on the aircraft performance characteristics set out in Chapter 3, we believe there are a significant number of airlines that would merit approaches for one or more routes. Ultimately this is the only way of understanding whether there is an airline partner willing to share the risks (and rewards) of developing services with Dundee Airport, at what cost and how the traffic might be built up over time. Included in the airlines we suggest approaching are those in Table 5.6 below:

Table 5.6: Potential Airlines to Approach re Route Development from Dundee

UK Based	**International**
Cityjet	Aer Lingus Regional
BA CitiFlyer	Wideroe
Loganair	Lufthansa Cityline
Flybe	KLM
Bmi Regional	SAS
Eastern Airways	DAT
Manx 2	Helvetic
Blue Islands	Join Airlines

Source; Consultants evaluation

Estimated Market Potential

5.32. In the absence of those discussions with airlines, we have not attempted a detailed or formal 'bottom-up' forecast for Dundee. Instead, as a way of bringing together the many potential opportunities discussed above in a structured form, Table 5.7 attempts to provide a consolidated overview of the airport's 'market potential' under a range of scenarios (i.e. Low, Mid Point and High). This methodology uses the preceding analysis of the 2009 CAA survey data to determine which markets are already large enough, or could be stimulated to a size capable of attracting airlines with the right equipment, to operate from Dundee. It then dovetails this with assumptions about how much of the 95% or so of existing traffic that is currently leaking from its core catchment area might be capable of being 'clawed-back' to services operating from Dundee and the size of aircraft and load factors needed to support those markets at realistic operational frequencies.

5.33. Table 5.7, in which the figures have been subject to rounding to emphasise the strategic nature of the market assessment, summarizes the foregoing results in the context of three different demand scenarios associated with different assumptions about levels of leakage capture and background growth. These range from a low growth figure of 75,000 passengers using Dundee Airport, to a high growth outturn of 400,000, against a figure of 54,600 in 2012, which is likely to fall to 35,000 or less in 2013. In our view these bear realistic comparison with the overall potential market that we initially benchmarked at over 1 mppa based on catchment population - a figure that was supported by our subsequent analysis of CAA data in Figure 5.3. The difference between the estimated total market and the predicted outturns are a function of two major factors:

- First limiting the routes included in Table 5.7 to those that are of a scale to potentially be viable from Dundee, on the basis that the smaller markets will either be served indirectly via one of these routes or by passengers continuing to drive to other airports.
- Second, the reality that thus far airlines have only been able or willing to operate three routes from Dundee, and that their current commitment is limited solely to London City.

5.34. Table 5.7 also illustrates what may happen over time in each demand scenarios if background growth is applied at an average of 2% pa initially then 1% pa out to 2030 based on a range of 'existing' market outturns anchored in 2015, depending on how effectively the short term measures outlined later in the report are resourced and implemented.

Table 5.7: Dundee Airport – Potential Passenger Market

Route	Current	Low	Mid-Point	High	Assumptions
London City	33,000				Existing x2/day D328 Service
London Route 1*		43,000	57,500	67,500	50 seat x2-3/day; 70 seat x12-14/week
London Route 2*				30,000	50 seat x10/week or 78 seat x6/week
London Hub Increment**				40,000	Route 1 moves to hub 2x/day E190/195
Manchester		28,000	32,250	35,000	31-34 seat x2/day to Flybe hub
Birmingham			20,000	20,000	29-34 seat x1/day or 50 seat x6/week
Belfast				15,000	78 seat x3/week or 34 seat x6/ week
Bristol				15,000	29-34 seat x1/day
Norwich			5,000	15,000	Charter initially, then 29-34 seat x1/day
Southampton				12,500	29-31 seat x6/week; may drop-in LBA
Domestic Charters	2,000	2,500	2,500	7,500	To JER, GUE, NQY, EXE, ORK
Shetland and West Isles				7,500	Extension of London service x3-4 week
Offshore		1,000	2,500	7,500	Principally renewables related
Domestic Sub Total	**35,000**	**74,500**	**149,750**	**275,000**	
Amsterdam			42,500	45,000	50 seat x2/day or x3/day 31-34 seat
Dublin			26,500	32,500	50 seat x1/day
Paris/Germany				10,000	Extension of SOU/BHX services
Norway/Denmark				10,000	DND as drop-in en route to Ireland
Palma			2,500	7,500	Charters E170-190s, stopping EXE/NQY
Malaga			2,500	7,500	Charters E170-190s, stopping EXE/NQY
Alicante				5,000	Charters E170-190s, stopping EXE/NQY
Faro				2,500	Charters E170-190s, stopping EXE/NQY
Other Charters		500	1,250	5,000	In from Ger, Scand, Swiss; out to Fra
International Sub Total	**0**	**500**	**75,250**	**125,000**	
Existing Potential 2015	**35,000**	**75,000**	**225,000**	**400,000**	
With growth to 2030	**42,500**	**90,000**	**270,000**	**485,000**	**Assumes 2%pa x 5yrs & 1%pa x 10 yrs**

Source: Consultant's estimates
Notes: * Not London City ** If access is secured to a well connected London Hub

Maintenance Repair and Overhaul

5.35. As reported in Chapter 2, Loganair maintains the D328 aircraft acquired from its purchase of Suckling Airways in a purpose built hangar at Dundee – this encompasses line maintenance of the aircraft used on the London City route, but also C and D checks on the other aircraft as required. This facility is also large enough to accommodate Saab 340's that are the mainstay of its fleet. Having this based 'type' capability will be an important factor in maintaining Loganair's commitment to the airport and will provide an important part of any package which might encourage them to consider flying additional routes. It also potentially offers line maintenance facilities to other airlines that may wish to operate into or base an aircraft at Dundee as well as providing a source of rental income and skilled jobs.

5.36. Tayside Aviation also has a maintenance operation on site, principally looking after their aircraft, but also undertaking some third party work. They believe there is a market that they can tap into for the latter and have expressed an ambition to expand this side of their operation, but require larger premises and additional engineers with certification to maintain light aircraft to do so.

5.37. There is certainly the physical scope within the existing site boundaries to double the size both of Loganair and Tayside Aviation's maintenance facilities, although this may require some rationalisation of the existing site layout as described in Chapter 9. If this were to be achieved, this would not only help revenue diversification by increasing rental income, but also help to enhance the value of the airport to the local economy through the creation of additional employment as well as giving airlines confidence about their ability to maintain the integrity of any new services they might consider developing from Dundee.

5.38. It is worth noting, that in conjunction with Perth College (now part of UHI) Air Service Training and ACS are involved in the maintenance space for small commercial turbo-props and light aircraft, much of it at Perth Airport some 40 minutes drive away from Dundee. As such there now exists a specialist cluster in this part of Scotland that is already a market leader in the UK. Scottish Enterprise recognise this potential, and given the possibility that some RAF personnel at Leuchars may not wish to move with their squadrons when they relocate to Lossiemouth, as well as an prospective demand for additional trained aviation engineers and mechanics locally, the scope for developing an 'outreach' Academy at the airport, in partnership with UHI and AST, and with Loganair and Tayside Aviation as future employers looks like an opportunity that should be explored further if it is decided that the airport has a long term future.

Business Aviation Market

5.39. The latest CAA annual statistical data indicates that during 2012 Dundee received some 527 Business Aviation and 166 air taxi movements, out of a total of over 40,000 by all types of aircraft. There were also 764 movements categorised as 'private' and these may also likely to have included some movements where an aircraft owner was primarily flying their airplane for business purposes. This compares with 528 and 190 respectively in 2011 and a high point of 608 for Business Aviation movements in 2008/09. Longer-term trends are illustrated in Figure 2.7 in Chapter 2.

5.40. The Business Aviation sector in the UK is known to have been in something of a slump since the beginning of the economic downturn in 2008. Wider UK analysis suggests that as the economy improves so will the demand for this kind of aviation and so in time Dundee can be expected to benefit from this recovery as well. HIAL believe, however, the level of Business Aviation traffic at Dundee could be increased if the RAF were no longer to accommodate non-scheduled civilian commercial movements at RAF Leuchars as they have done in the past. There are no published movement records for this traffic, but HIAL believe it to be material, especially during major golf championships at Carnoustie, St Andrews or Gleneagles, and are keen to capture it for the benefit of the Airport.

5.41. Optimism that this would happen from October this year as a by-product of military flying at RAF Leuchars being moved to Lossiemouth as an outcome of the Defence Base Review has been dampened:

- Firstly by the retention of Leuchars as an operational airfield for the RAF, principally as a diversion airport for front-line aircraft to be based at Lossiemouth, but also to allow continued operation of the East of Scotland University Air Squadron which has 5 Grob aircraft located there (although the latter could just as easily be based at Dundee), making it possible for it to continue to take this type of traffic; and

- secondly, by the little heralded 'Civil Engagement Financial Directive', published in December 2012, which not only encourages operational bases to do this but also to compete for other civilian traffic that might otherwise use Dundee.

5.42. The above notwithstanding, it needs to be born in mind that based on the airport's current runway length and categorisation it is only suited to certain types of small and medium sized business aircraft, and this is the market which has suffered most in the UK. Of course some larger business jets have, and are capable of using the airport as noted in paragraph's 3.13-3.32, but these tend to be used for shorter sectors and therefore are less exposed to the growth markets in Business Aviation (e.g. Russia, Turkey and Asia) but under any circumstances, it would be necessary to build additional dedicated stands if this type of activity is to be accommodated, especially during peak seasons and major events.

GA/Flight Training

5.43. GA movements associated principally with Tayside Aviation's flight school operation and Tayside Flying Club dominate aircraft movements at Dundee, with between 85-90% of the total of 40,000. The CAA's 2012 statistics report a 13.5% jump in aero club activity from 30,900 in 2011 to 35,100 in 2012 indicated this is the primary source of last year's growth in movements. This new 'high', compares to figures oscillating in a range between 28,000-32,000 since 2005, which marked a notable rise in activity over preceding years, with 24,000 being the recorded figure for 2003.

5.44. Tayside Aviation have continued to be the supplier of choice for a range of RAF training contracts and have also been successful in attracting commercial contracts, most recently from Cathay Pacific. With over 20 qualified instructors, Tayside Aviation is one of only five major flying schools in the UK and thus an asset to the region.

5.45. Discussions with the company indicates they have ambitions to expand their operations further and Dundee remains their location of choice for this new activity, but they have expressed concerns about relationships at a local level with the airport and the need to increase the size of the facilities available to them, including for parking aircraft. Some suggestions as to how this might be achieved are outlined in Chapter 9. Equally, analysis of the Airport's accounts indicates that it receives only around £150-200,000 from GA activity, less than quarter of its commercial income, suggesting that any investment in its expansion needs to be associated with revised terms in which the airport benefits from this increased activity.

Offshore Activity

5.46. As Chapter 2 reported although the airport accepts a mix of rescue helicopters, some light training flights from PDG in Perth and offshore helicopters that are occasionally diverted in bad weather, there are currently no helicopters based at Dundee. However, with offshore activity again booming, Aberdeen is known to be approaching capacity for rotary operations and as a result operators looking for bases to service offshore renewables activities in the North Sea are known to be looking for alternative bases. Wick has already secured some offshore traffic, but Dundee's position close to two prospective large offshore wind turbine arrays suggests that it could provide a very attractive base for this kind of helicopter activity provided appropriate facilities at affordable cost are made available to the operator. There is understood to have been discussions between HIAL and potential operators but thus far without any commitments.

5.47. They key to unlocking this opportunity is likely to be to identify potential operators and work closely with them as they decide how they intend to service the arrays both during construction and thereafter for ongoing maintenance and the role that helicopters will have in this. Then to provide suitable facilities for based rotary operations (e.g. apron, taxiing and hangar facilities) cost effectively, ensuring they are integrated with other activity on the airfield. And finally, to manage those operations in such a way as not to cause excessive nuisance to neighbours.

5.48. What is clear, however, is that with each turbine estimated to require 3-4 movements per annum, servicing an array of 300 turbines could require 900 to 1,200 movements per annum. This offers the prospect of considerable additional income for the airport and the creation of additional capability and jobs in one of Dundee's target economic sectors.

Property Development

5.49. If the Airport is to be retained and developed as a going concern, most of the land within its existing boundaries will need to be reserved for aviation related activity (that is requiring airside access or immediate proximity to the airfield). The prime commercial sites (i.e. the Riverside Business Park, the site occupied by the Riverside Inn and the business complex immediately to the west of the Loganair hangar, were sold off before HIAL took over the running of the airport. The former Water Board building on the eastern end of the Airport site fronting the A85 offers the only real opportunity of any significance unless additional land is acquired from the University playing fields complex, or from the reclaimed area at the western end of the runway - and that is also not in the Airport's ownership.

5.50. Another possibility is buy-back of some of the poorly used industrial land north of the western half of the airport. Some of the current development on that site may be empty at the moment, but overall the site would be ideal for an airport business park of the kind considered but not taken forward by the City Council in the mid-1980's.

5.51. So while there is some scope for rationalisation of existing Airport property to allow some intensification of the way in which it is used, restrictions on building heights and the extent of encroachment into existing operational areas relating to safety surfaces means that this is modest. There also seems little appetite amongst key stakeholders for significant commercial development on or close to the Airport, not least because of the resource that is being put into major developments elsewhere in the City's waterfront Area.

5.52. It appears, therefore, there is no property related 'silver bullet' to dramatically improve the Airport's finances at Dundee in the way that has been possible at small regional airports such as Blackpool, Robin Hood Doncaster Sheffield and Gloucester Staverton, or is being planned at other peer airports like (Durham tees Valley, Newquay and Exeter). Rather the focus is likely to be on improving the site density, enhancing the commercial offer within the Airport building as passenger numbers grow, ensuring all available space is let and that rental levels are optimised within the confines of what is practicably possible.

6. CURRENT ECONOMIC AND POLICY CONTEXT

Introduction

6.1. The principal economic function of an airport is to provide connectivity that enables other businesses in its catchment area to access domestic, European and wider global markets, suppliers and external expertise quickly and efficiently whilst also enabling and encouraging endogenous and inward investment. Its value locally, is typically much greater in this '*facilitation'* role, than as a *direct or indirect supplier of jobs and income* in its own right. This is particularly the case for small airports serving second tier regional cities such as Dundee; it is only at the larger regional airports such as Birmingham and Manchester, which are of a scale that they have become large employers in their own right and attractant of a lot of airport related or associated activity, where the balance is different.

6.2. For all, however, they serve the common role of being international gateways for the economies of the 'city regions' they serve and as in the case of other UK regional cities in the case of the other sectors, the Airport has an important role in helping to optimise the competitiveness, outputs and wider benefits derived from the established markets and new planned investment elsewhere in its catchment area.

6.3. As a city, Dundee is seeking to establish itself in a number of new business sectors (e.g. life sciences, creative industries and digital media and renewable energy servicing) all of which have above average propensities to fly. These new opportunity areas sit alongside the more mature markets associated with traditional economic sectors such as manufacturing, financial services (e.g. Alliance Trust, RBS, Aviva), public sector back office activity, Universities and tourism. The investment that is taking place in the development of the Waterfront Area and new "Victoria and Albert Museum at Dundee", for example, holds out the prospect of generating significant new visitor markets to sit alongside existing tourism offerings such as golf, the North East Fife Coast and St Andrews. With a billion pounds of investment planned over a 10-year period, the city is making major efforts to regenerate itself as a 21st century city.

6.4. It is in this context that the future of the airport is potentially so significant. Without an airport, Dundee would be the largest city in the UK without such an international gateway. With it, Dundee is connected quickly and independently to the rest of the UK and the wider world, rather than relying on three larger competitors an inconvenient 1.5-3.0 hours drive away.

6.5. The key to finding a sustainable future for the airport is therefore to identify a core offering of air services tailored to the needs of businesses and the wider travelling public in its catchment in a form which makes it convenient and cost-effective to use. Crucial to optimising this commercial alignment is to understand in detail the structure and prospective growth areas within the local economy, as well as the outbound leisure and VFR markets sought by its catchment population and how best to take advantage of as much of this inherent local demand as it realistically can.

6.6. This chapter explores this agenda, alongside some of the key policy issues that are likely to impinge on Dundee Airport's ability to respond, including fiscal impediments such as APD and ETS, regulatory burdens, state aid rules for regional airports, future decisions surrounding the use of the MoD estate in Scotland and access to London Airports.

6.7. It provides an analysis of the economy of the catchment of Dundee Airport as defined elsewhere in the report: that is, the local authority areas of City of Dundee, Angus, Perth and Kinross, plus the parliamentary constituency of North East Fife. The analysis is based largely on published data, along with bespoke data acquired from Scottish Government and information from our consultations.

Population Growth

6.8. Table 6.1 shows the population of the catchment area numbered around 486,000 in 2011. Within this, most residents live in either Dundee City or Perth & Kinross. The catchment is home to 9% of the total Scottish population.

Table 6.1: Resident Population 2011

Area	**Population**
Perth & Kinross	147,000
Dundee City	147,000
Angus	116,000
North East Fife	75,649
Total	**485,649**

Sources: 2011 Census; GRO (Scotland)

6.9. The population of the catchment is forecast to grow (see Table 6.2) in the period to 2021. The growth in the first five years is projected to be slightly over 3%, with that between 2016 and 2021 marginally less (just under 3%) adding around 30,000 people in the ten-year period.

Table 6.2: Forecast Population Change: 2011-2021

Area	2011	2016	2021
Perth & Kinross	147,000	156,492	165,841
Dundee City	147,000	149,647	151,884
Angus	116,000	117,724	118,926
North East Fife	75,649	77,620	79,287
Total	**485,649**	**501,484**	**515,939**

Source: Based on 2011 Census and GRO (Scotland)

6.10. The highest rate and volume of growth is forecast for Perth & Kinross, which at over 12%, is much higher than the projected growth in each of the other three areas (all below 5%). The catchment area's total population growth by 2021 (around 6%) is forecast to be higher than for Scotland as a whole (around 5%). However, this is dependent on Perth & Kinross achieving its forecast growth.

Business and Employment Structure

6.11. Table 6.3 sets out the broad sectoral business and employment structure of Dundee airport's catchment area.

6.12. The largest sectors in terms of number of business sites are:

- Wholesale and retail;
- Agriculture, Forestry and Fishing;
- Professional, scientific and technical; and
- Construction.

These account for around half of the active sites in the area.

6.13. The position is different for employment levels. Wholesale and retail is the largest sector. However, this is followed closely by Human Health & Social work, with then a large gap to Education, followed by Accommodation & Food service.

6.14. The relatively large employers per business site are in the utilities and public sectors (i.e. Education; Public Administration & Defence; Compulsory Social Security; and Human Health & Social Work). The smallest ones are Agriculture, Forestry & Fishing; Professional, Scientific & Technical; other services; Real Estate.

Table 6.3: Airport Catchment Area – Business and Employment Structure 2012

Sector/Activity	Business Sites		Employment	
	Number	**Share**	**Number**	**Share**
Agriculture, Forestry and Fishing	2,090	11%	8,470	4%
Mining and Quarrying	35	<1%	200	<1%
Manufacturing	850	5%	14,040	7%
Electricity, gas, steam, etc. supply	25	<1%	3,750*	2%
Water supply; Sewerage, etc.	85	<1%		
Construction	1,870	10%	11,080	6%
Wholesale and retail	3,625	19%	33,030	17%
Transportation and storage	485	3%	5,860	3%
Accommodation and food service	1,585	8%	17,730	9%
Information and communication	565	3%	3,990	2%
Financial and insurance	290	2%	3,650	2%
Real estate	515	3%	2,560	1%
Professional, scientific and technical	2,085	11%	9,190	5%
Administrative and support services	1,140	6%	8,970	5%
Public Administration and Defence; Compulsory Social Security	315	2%	11,560	6%
Education	475	3%	19,030	10%
Human health and social work	1,200	6%	32,970	17%
Arts, entertainment and recreation	610	3%	6,050	3%
Other services	935	5%	4,640	2%
Total	**18,790**	**100%**	**196,770**	**100%**

Note: Data cover enterprises that are registered for VAT and/or PAYE.
* Estimated as full data not available due to confidentiality constraints

6.15. Table 6.4 compares the sectoral business and employment structure of the catchment with that for Scotland as a whole.

Table 6.4: Airport Area Catchment – Business and Employment Structure 2012

Sector/Activity	Business Sites		Employment	
	Airport Catchment	Scotland	Airport Catchment	Scotland
Agriculture, Forestry and Fishing	11%	9%	4%	2%
Mining and Quarrying	<1%	<1%	<1%	1%
Manufacturing	5%	5%	7%	8%
Electricity, gas, steam, etc. supply	<1%	<1%	2%	1%
Water supply; Sewerage, etc.	<1%	<1%		
Construction	10%	10%	6%	6%
Wholesale and retail	19%	18%	17%	15%
Transportation and storage	3%	3%	3%	4%
Accommodation and food service	8%	8%	9%	7%
Information and communication	3%	4%	2%	3%
Financial and insurance	2%	2%	2%	4%
Real estate	3%	3%	1%	1%
Professional, scientific and technical	11%	14%	5%	6%
Administrative and support services	6%	7%	5%	7%
Public Administration and Defence; Compulsory Social Security	2%	1%	6%	6%
Education	3%	3%	10%	8%
Human health and social work	6%	6%	17%	16%
Arts, entertainment and recreation	3%	3%	3%	3%
Other services	5%	5%	2%	2%
Total	**100%**	**100%**	**100%**	**100%**

Note: Data cover enterprises that are registered for VAT and/or PAYE.
* Estimated as full data not available due to confidentiality constraints

6.16. The area is relatively well-represented in the following sectors:

- Agriculture, Forestry and Fishing.
- Electricity, Gas, Steam and Air Conditioning supply & Water supply; Sewerage, Waste Management and Remediation activities.
- Accommodation and Food Service activities.
- Education.

6.17. In contrast, the area's economy is relatively under-represented in terms of:

- Financial and Insurance activities.
- Mining and Quarrying.
- Administrative and Support Service activities.

6.18. We have undertaken detailed analysis of some of the growth sectors identified in Scottish Government's Economic Strategy. The definitions of the sectors (in terms of SIC codes), are those used by Scottish Government.

- The Tourism sector accounts for 9.6% of airport catchment employment. This is higher than the sector's share of total Scottish employment (7.4%).
- In contrast the share of the area's employment is taken up by Financial and Business Services is lower than within Scotland as a whole: that is, 5.8% compared to 9.3%.
- Some 0.9% of the airport catchment employment is in Life Sciences. This is higher than the sector's share of all Scottish employment (0.6%). The official data show 1,673 Life Sciences jobs in the catchment. However, the actual number will be considerably higher. This is because the data does not take into account those employed as life scientists in the health or HE sectors.

6.19. Data constraints mean that it is not possible to produce the same analysis for either the Energy or Creative Industries in the catchment. This is because the official data cannot yet be used to isolate renewables-related activity, whilst data confidentiality issues mean that the jobs in the Creative Industries sector cannot be estimated. However, it is generally recognised that Dundee is home to a relatively large amount of activity in computer games and other electronic media.

6.20. Table 6.5 shows a number of economic activities which previous research has identified as aviation-intensive.

Table 6.5: Airport Catchment Area - Presence of Relatively High Aviation Usage Activities

Activity	**Catchment Area's Share of Total Scottish Employment In Activity**
Banking, finance and insurance	4%
Computer activities	4%
Architectural activities, etc.	5%
Accountancy services	6%
Legal activities	7%
Market research, etc.	7%
Public administration, etc.	8%
Tertiary education	16%
All Sectors	**8%**

6.21. In most of these sectors the catchment area's share of the activity's total Scottish employment is below its share of all Scottish employment (i.e. 8%). The two exceptions are public administration (which has an 8% share of all Scottish employment in that activity) and most notably the area's employment in Tertiary Education. It accounts for 16% of all Scottish employment in Tertiary Education-twice the area's share of all employment in Scotland.

6.22. This is reflected in the staff and student numbers within the HE sector in Dundee and North East Fife. University of Dundee has 12,000-13,000 FTE students on campus and around 3,300 staff. Some 15% of all students are from outside Scotland - both Rest of UK and international.

6.23. The University told us that it is one of most research intensive universities in the UK, in terms of the share of its funding that comes from research income. This reflects, in particular, Life Sciences and Medical Research activity. This is spread across two schools:

- Life Sciences. This is one of the top centres in the UK with around 50 nationalities among its researchers.
- Dentistry, Medicine and Nursing.

6.24. University of St Andrews has around 8,000 students. Some 1,000 are from the United States with 2,500 from the rest of world. The University has around 1,000 senior level staff.

6.25. University of Abertay is less research intensive than the other institutions. It has around 5,000 students on campus-one third of who are from outside the local area. The University employs around 550 full time equivalent staff.

Wage Levels

6.26. Table 6.6 shows the average (median) gross weekly wage in the catchment.

Table 6.6: Median Gross Weekly Wage (All Jobs in 2011, by Place of Residence)

Area	**Median Gross Weekly Wage (£)**
Angus	382.50
Dundee City	357.80
Perth & Kinross	376.40
North East Fife	402.60
Catchment Area	**376.10**
Scotland	*392.50*

Source: Annual Survey of Hours and Earnings

6.27. The median gross weekly wage figure is around £376. The highest level is in North East Fife (around £403) and the lowest is Dundee City (about £358). The figure for the catchment area as a whole is slightly less (around 96%) than the Scottish average.

Inbound Tourism

6.28. Visitor statistics are presented below for Angus & Dundee and Perthshire. No comparable recent data are available for North-East Fife. However, Dundee City Region Economic Review (Scottish Enterprise 2009) indicated that North-East Fife accounted for 17% of visitor bed-nights in 2007. This suggests that the data shown below may account for around 80% of total visitor activity in the airport catchment.

6.29. All of the data reported below are for visitors that stay at least 1 night in the area. Thus, day trips from home are not included.

6.30. Table 6.7 shows total visitor numbers between 2009 and 2011, including both GB and overseas tourists.

Table 6.7: Total Visitor Numbers (2009-2011)

Area	**2009**	**2010**	**2011**
Angus & Dundee	482,800	574,900	734,000
Perthshire	862,600	892,100	953,000
Total	**1,345,400**	**1,467,000**	**1,687,000**

6.31. There were over 1.6 million visitors in 2011. Slightly more than half (56%) of them were to Perthshire. The data suggest that visitor numbers increased in both 2009 and 2010. Those in 2011 were 25% (around 340,000) above those two years before. This growth has come very largely from Angus & Dundee. It has seen a growth rate far beyond that for Scotland as a whole.

6.32. Table 6.8 shows total visitor numbers between 2009 and 2011- excluding Scottish residents. This is because they are very unlikely to form part of the potential inbound tourism market for Dundee airport.

Table 6.8: Total Visitor Numbers (2009-2011) – Excluding Scottish Residents

Area	**2009**	**2010**	**2011**
Angus & Dundee	265,761	284,200	272,000
Perthshire	374,200	354,900	446,700
Total	**639,961**	**639,100**	**718,700**

6.33. There were over 700,000 of these visitors in 2011. More than half (62%) went to Perthshire. The data suggest that visitor numbers were unchanged between 2009 and 2010 but increased by 12% in 2011. This was solely due to growth in numbers to Perthshire.

Table 6.9: England/Wales and Overseas Visitors

Area/Source	2009		2010		2011	
	England/ Wales	Overseas	England/ Wales	Overseas	England/ Wales	Overseas
Angus & Dundee	195,761	70,000	214,200	70,000	198,000	74,000
Perthshire	244,200	130,000	244,900	110,000	323,700	123,000
Total	**439,961**	**200,000**	**459,100**	**180,000**	**521,700**	**197,000**

6.34. Most (over 70%) visitors in 2011 were from England/Wales rather than overseas. The split between these two groups was very similar in each of the three years. Almost all (well over 90%) are from England.

6.35. Perthshire accounts for most English/Welsh visitors and most overseas visitors. The number of English/Welsh visitors grew by approaching 20% between 2009 and 2011-very largely in Perthshire. In contrast, overseas numbers changed little.

6.36. Table 6.10 shows the most common countries of origin of overseas visitors in 2011.

Table 6.10: Overseas Visitors 2011 – Most Common Countries of Origin

Country	Angus & Dundee	Perthshire	Total
Germany	6,660	17,571	24,231
United States	8,140	13,806	21,946
Ireland	9,620	6,276	15,896
Italy	4,440	11,296	15,736
Sweden	4,440	10,041	14,481
Belgium	5,180	8,786	13,966
Australia	2,960	10,041	13,001
Poland	2,960	10,041	13,001

6.37. Germany and the United States are the most common sources. Each had more than 20,000 visitors to the area in 2011. The other countries shown -almost all of which are in the EU - produced similar numbers of between 13,000 and 16.000 visitors.

6.38. The two main markets in Angus & Dundee were the United States and Ireland. Only in one case (Ireland) were the numbers higher in that area than in Perthshire.

6.39. Across 2009-2011, the United States and Germany were the two largest markets in each year. The differences across the period are that:

- In 2011 visitor numbers from Belgium, Sweden and Poland were much higher than in the two previous years.
- 2011 numbers from France in particular and also Canada and Netherlands were much lower than in 2009.

6.40. Table 6.11 describes the seasonality of visitors from England and Wales. Please note that no comparable data are available for overseas visitors.

Table 6.11: Seasonality of England/Wales Visitors (%)

Month/Year	2009			2010			2011		
	A&D	P	Total	A&D	P	Total	A&D	P	Total
January-March	19	19	19	15	16	16	26	15	19
April-June	31	28	29	23	30	27	26	23	24
July-September	33	32	33	34	35	35	23	41	34
October-December	17	20	19	28	19	23	25	21	23
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Note: Assumes England/Wales visitors seasonal profile is the same as that of all GB visitors

6.41. A third of all the annual visitors come in July-September. Slightly lower numbers arrive in April-June. Thus, around 60% in total visit during the six months of April-September. In the last two years activity in Perthshire has been more seasonal than in Angus & Dundee.

6.42. Table 6.12 shows the trip purpose of England/Wales visitors.

Table 6.12: Seasonality of England/Wales Visitors

Purpose /Year	2009			2010			2011		
	A&D	P	Total	A&D	P	Total	A&D	P	Total
Holiday	116,294	178,266	294,560	128,520	205,716	334,236	120,780	251,767	372,547
VFR	40,703	26,862	67,565	44,982	14,694	59,676	39,600	32,697	72,297
Business	32,950	29,304	62,254	29,988	22,041	52,029	25,740	29,427	55,167
Other	5,815	9,768	15,583	10,710	2,449	13,159	11,880	9,809	21,689
Total	**195,761**	**244,200**	**439,961**	**214,200**	**244,900**	**459,100**	**198,000**	**323,700**	**521,700**

6.43. Holiday trips predominate; 2011 saw around 372,000 of them, over 70% of the total. VFR and Business had broadly similar shares of the visitor market, with 72,000 and 55,000 trips, respectively.

6.44. A clear majority (around two thirds) of the 2011 Holiday trips (c 250,000) are focused on Perthshire. In contrast, Angus & Dundee and Perthshire have quite similar numbers of VFR and Business trips. The overall splits between the four trip types do not differ significantly across the three years.

6.45. Table 6.13 shows the trip purpose of overseas visitors.

Table 6.13: Trip Purpose of Overseas Visitors

Purpose/ Year	2009			2010			2011		
	A&D	P	Total	A&D	P	Total	A&D	P	Total
Holiday	18,200	91,000	109,200	27,300	80,594	107,894	38,121	77,030	115,152
VFR	32,200	32,500	64,700	30,100	26,139	56,239	23,919	43,485	67,404
Business	13,300	3,900	17,200	8,400	2,178	10,578	10,465	1,242	11,707
Other	6,300	2,600	8,900	4,200	1,089	5,289	1,495	1,242	2,737
Total	**70,000**	**130,000**	**200,000**	**70,000**	**110,000**	**180,000**	**74,000**	**123,000**	**197,000**

6.46. As with the domestic market, a holiday accounts for the travel of more than half the overseas visitors to the catchment area; however, VFR also accounts for a significant share (around one in three). The absolute number of VFR trips by overseas residents is quite similar to that in the domestic market. In contrast, business accounts for a relatively small share and thus a low absolute number of overseas visitors - around 12,000 in 2011.

6.47. Perthshire accounts for a very large proportion of the holiday trips shown at Table 6.13. In contrast, it is Angus & Dundee largely accounts for the overseas business visitor trips.

V&A Project

6.48. The current plan is for the V&A to open in 2016. The project as currently envisaged will have three elements:

- Exhibitions-both touring and permanent.
- Education-school and student activities on site, plus outreach.
- Interaction with businesses to encourage design-led business innovation.

6.49. The project sponsors have discussed plans with third parties. The feedback they have had on transport is a concern about the potential impact on visitor numbers of the lack of air airlines serving Dundee, and also the quality and speed of rail services to the city.

6.50. A project business plan was developed in 2010. It projected annual visitor numbers of 500,000 in Year 1 falling to 300,000 from Year 3 onwards. These forecasts were checked and approved by a third party.

6.51. However, it is recognised that given the elapsed time there is a need for the numbers to be revalidated as part of a new business plan. However, at this time the project sponsors expectation is that any revisions will still leave the totals in the 300,000-500,000 per annum range. They also expect that:

- Most of the education-related visitors will be from Scotland rather than further afield.
- After Year 1 there will be few repeat visits to the exhibitions by local residents. Rather, they will visit the facility to use the bar, public area or restaurant.
- The majority of all visitors will be from outside Dundee.

6.52. It is expected that the V&A facility/presence, which will form an important part of the Dundee's 2017 City of Culture bid, will draw international recognition and interest to the City. Some will visit it as the main purpose of their trip. Others will visit as part of a wider holiday in Scotland.

Dundee Waterfront Project

6.53. This project aims to transform Dundee's waterfront area and thus transform the city's economy. The elements of the project are shown at Table 6.14.

Table 6.14: The Waterfront Project

Development Zone	Focus	Forecast Direct Job Creation
Riverside	Gateway transport access - including Dundee Airport, recreation and sporting	-
Seabraes	Digital media and creative industries	1,300
Central Waterfront	City centre businesses, financial sector and leisure (including V&A)	4,800
City Quay	Offices, leisure, residential, retail, marina	1,110
Dundee Port	Renewable technology industries	300
Total Forecast Direct Job Creation		**7,510**

Source: Discover Dundee Waterfront – An Investment Opportunity

6.54. The development will be based on public and private investment. It is forecast to create around 7,500 direct jobs. The initial infrastructure investment is expected to lever in other investment. This will generate activity in areas such as digital media and creative industries, financial, retail, leisure and renewables.

6.55. In terms of the latest progress, Dundee City Council told us the following:

- *City Quay*. This zone has already seen two new office blocks built. One is fully let, and the other one partly let. They have attracted energy-related companies (particularly with a renewables focus) to relocate from Aberdeen area.
- *Seabraes*. Small units for start-ups in the creative sector will be available by summer 2013. These companies will also be provided with financial assistance and business advice.
- *Central Waterfront*. Efforts are being made to attract a 5 star hotel to this zone in addition to the Malmaison that will open late 2013.

- Regarding *Dundee Port*, Dundee has been identified by Scottish Government as one of the top two potential locations in Scotland for the manufacture of offshore renewables devices, as well as a possible base for subsequent operations and maintenance support. The port has Enterprise Zone status. There has been interest from several potential manufacturing inward investors. A Memorandum of Understanding between Forth Ports, Dundee City Council and SSE has strengthened the marketing of the port.

6.56. The Council recognise that taking the project forward will require the attraction of further public as well as private investment. However, they expect the job impacts shown at Table 6.14 to begin to come on stream within the next three years. And crucially from the airport's point of view, they will all be within easy reach of the Airport.

Implications

6.57. The economic analysis has the following implications for actual and potential air travel to/from the catchment:

- The area contains a significant proportion of the Scottish population, whose wage levels are close to the Scottish average.
- The population is forecast to grow in the next decade, and at a rate above that for Scotland as a whole. However, this is dependent on relatively high growth being achieved in Perth & Kinross.
- The catchment's economy has a degree of specialism in a number of sectors of above average growth potential. These include life sciences, which is generally recognised as quite air intensive and tourism (see below). In contrast, there is an under-representation in financial and business services, which is an especially air intensive sector, although there are several substantive financial companies with operations in the UK.
- There is also evidence of the potential to further develop other identified growth sectors. These are creative industries (notably digital media) and energy (renewables), based around Dundee port).
- A notable feature of the area's economy is the degree of specialisation in tertiary education. This is generally recognised as an air intensive sector. Both St Andrews and Dundee universities have strong links with student markets and institutions outside Scotland. This will increase the sector's air intensity.
- The tourism market within Angus, Dundee and Perthshire is predominantly UK in rather than overseas origin. Holiday trips are a big part of the overall tourism market, but visitor numbers, and non-Scottish tourism activity as a whole in the area, is quite dependent on the Perthshire market.
- The main overseas markets are the United States and Germany (with the US being the largest with around 24,000 visitors per annum), then a range of EU countries. There is also a degree of seasonality to the visitor market; 60% of annual demand is between April and September. So even though this analysis excludes international

visitors to North-East Fife (i.e. particularly St Andrews) and the potential for market stimulation direct air access might provide, the absolute size of most of these markets is sufficiently small that in themselves they will be unlikely to sustain a scheduled route to Dundee. Inbound bespoke charter services, particularly from Germany, might be worth looking at, however, and the data serves to emphasise the importance of a route to London because of the gateway it offers to access Dundee from a range of markets of domestic and international visitor markets.

- The business tourism market-and the overseas one in particular - is small in absolute terms. In contrast, VFR forms a relatively large share of all overseas residents' trips.
- The V&A project could be highly significant project for the profile and visitor activity of the area. However its impact on air travel cannot be properly assessed until the revised market forecasts-including visitor origins-are completed.

Established Policy Directives

6.58. The most recent version of the **Scottish Government Economic Strategy** was published in 2011. It sets out the Government's Purpose which is that "all our efforts and actions.. (are to)..be directed (to) make Scotland a more successful country, with opportunities for all to flourish, through increasing sustainable economic growth." As such, the Strategy is an overarching one that covers all activities of the public sector in Scotland-including transport.

6.59. The Strategy contains six Strategic Priorities that structure the activities through which the Government's Purpose will be achieved. These are:

- Supportive Business Environment.
- Transition to a Low Carbon Economy.
- Learning, Skills and Well-being.
- Infrastructure Development and Place.
- Effective Government.
- Equity.

6.60. Of these, three are particularly relevant to this study. First, a 'Supportive Business Environment', which encompasses Policy Areas such as:

- International Trade and Investment;
- Supporting Business Growth, which includes attracting inward investment; and
- Assisting seven key growth sectors – The Creative Industries; Energy; Financial and Business Services; Food and Drink; Life Sciences; Sustainable Tourism; and Universities.

6.61. Second, ‘Transition to a Low Carbon Economy’. This is underpinned by the Scottish Government’s Low Carbon Economic Strategy, which is based on the targets contained in the Climate Change (Scotland) Act of 2009, namely to reduce emissions by 42% by 2020, and by 80% by 2050.

6.62. The Low Carbon Economic Strategy notes the importance of technology advances, and their widespread uptake, in reducing transport emissions. The extent to which this successful will depend on the rate of growth in carbon-intensive parts of the sector such as aviation. If the rate of growth seems likely to negate lower carbon emissions elsewhere, then this will require effective local policy aimed at influencing planning and transport behaviour in order to reduce overall transport emissions by the requisite amounts.

6.63. ‘High Speed Rail’ (HSR) is also seen as making a longer-term contribution to achieving Scotland’s climate change targets, by offering a low carbon alternative to domestic aviation, reducing mid and long distance car travel and providing opportunities for increased displacement of long distance road freight to rail.

6.64. Third, is ‘Infrastructure Development and Place’. This Strategic Priority includes transport-related actions. The relevant ones here are:

- Focusing investment on making connections across, within and to/from Scotland better, improving reliability and journey times, seeking to maximize the opportunities for employment, business, leisure and tourism.
- Ensure Scotland is well connected with the rest of the world by working closely with the air, rail and sea transport industries. This is to actively promote new international routes, services and sustainable infrastructure.
- While written as long ago as 2006, the Scottish National Transport Strategy (NTS) remains the one that the Scottish Government works to. NTS has three Key Strategic Outcomes, which are to:

    - *Improve journey times and connections*, to tackle congestion and the lack of integration and connections in transport which impact on economic growth, social inclusion, integration and safety.
    - *Reduce emissions*, which impact on protecting the environment and improving health.
    - Improve quality, accessibility and affordability, to give people a choice of public transport.

6.65. In terms of aviation NTS states that:

- To remain competitive in international markets (including inward investment and tourism) it is important to ensure that Scotland has direct air access.
- The aim is also to reduce and minimise the impact of airports on the environment.
- There is a requirement to make the best use of existing capacity where possible.
- There is a need to respects the rights and interests of those affected by airport development.
- Transport interchanges must be of the highest quality, including those at airports.

6.66. The TACTRAN Regional Transport Strategy (RTS) was completed in 2008. It refers to Dundee and Perth airports, while also noting the need to travel to Aberdeen, Edinburgh and Glasgow airports to access a wider range of destinations.

6.67. The RTS contains a number of objectives, grouped under six themes. The relevant ones here are:

- *Economy* - this contains three sub-objectives:
  - Ensuring that transport infrastructure and services in the region help deliver economic growth, particularly in key business and employment sectors.
  - Improving the efficiency, reliability and integration of the movement of goods and people.
  - Addressing issues of peripherality associated with the TACTRAN area.

  The Strategy notes that the region suffers relative peripherality as a result of the quality of transport links with the Central Belt and the remainder of the UK. It also states that further improvements are needed to external transport connections in order to maintain and improve economic, social and environmental wellbeing.

  The RTS also refers to TACTRAN working with the relevant airport authorities to promote flights from Dundee and improved facilities at Dundee Airport.

- *The Environment*, which contains three sub-objectives:
  - Contributing to the achievement of the Scottish national targets and obligations on greenhouse gas emissions.
  - Promoting a transport system that respects both the natural and the built environment.
  - Promoting a shift towards more sustainable modes.

- And finally, *Integration*, which has as one of its sub-objectives:
    - ‘Improving integration of all transport modes’; that includes a reference to ensuring that the role of airports in supporting the economy is supported by appropriate transport infrastructure including improved road and rail connections.

7. STAKEHOLDER CONSULTATIONS

Introduction

7.1. The study brief notes that the primary interest in the airport amongst local stakeholders can be found amongst the business community in the key sectors of the Dundee economy. As described in the preceding chapter these include a number of businesses with UK-wide and international markets, tourism interests, the Universities and other public sector organisations that have some propensity to fly. In order to capture focused, up to date qualitative information on the travel needs of these organisations and the local business community to set alongside the analysis of historic CAA data in Chapter 5, the consultancy team undertook a series of one-to-one interviews by phone and in person, during February 2013, based on a structured set of questions and recommendations on who to approach from:

- the local Chambers of Commerce
- economic development personnel within Dundee City, Angus and Perth and Kinross Councils
- S.C.D.I.
- Bank of England - Agency for Scotland, and
- Scottish Enterprise regional account managers

7.2. As indicated in Chapter 5, based on discussions with HIAL's Commercial Manager and contact with officials in Transport Scotland, we have not yet spoken in detail either to Cityjet or to other potential airlines, as we feel that to approach them formally without clear propositions might prove counter-productive. So although we have had some indirect feedback from Aer Lingus Regional, Loganair, Local Travel Agents and HIAL, how we take forward this important component of the work is something we will wish to discuss with the Client Group once they have considered this report.

7.3. As part of these discussions it may also be useful to explore the value of a wider market assessment using a Survey Monkey questionnaire; we are aware that this technique has been very useful in raising local interest (especially if promoted by local media) and giving airlines additional confidence about market demand. For example, Manston Airport had over 10,000 responses to their survey regarding a potential new service to Amsterdam, with the result that KLM are committed to start double daily operations on 2 April, even though Manston's core catchment population is arguably slightly smaller that Dundee's, with just as much competition – from Gatwick, Heathrow and Stansted.

Wider Stakeholder Consultations

7.4. In addition to the '*travel behaviour*' focused stakeholder consultation reported below, there has also been a programme of information gathering discussions with other stakeholders having a direct interest in future development options for the airport and the recommendations emerging from this study. These included Dundee City Council, TACTRANS, HIAL, Scottish Enterprise in Glasgow and the Defence Infrastructure Organisation (DIO), but also organisations who make use of the facility, directly or indirectly, including CI Travel, Tayside Aviation, Perth Airport and some private aircraft owners. We also received significant help from the current Airport Manager Derrick Lang and the former lead officer for the Council Gordon Fleming. The feedback of all these consultees is reflected as appropriate in different sections of this report

Air Travel User Consultations

7.5. In terms of businesses that currently, or prospectively could, provide passenger demand for Dundee Airport, consultations focused on enhancing our understanding of:

- Current and historic use of air routes from Dundee.
- Use of other Scottish airports.
- Factors determining choice between different Scottish airports including price elasticity.
- Potential changes to underlying demand for air travel.
- New air services out of Dundee that might be beneficial to their organisation.

7.6. In total 28 organisations were consulted: some face-to-face, others by telephone. They are listed in Table 7.1 below. Most of them employ large numbers of people i.e. more than 100 staff, while some have more than 1,000 employees. A number of the organisations, while headquartered in Dundee, have a Tayside-wide remit (e.g. NHS) and a few have quite substantial travel budgets, with staff making over 500 outbound return flights per year.

Table 3.1: User Consultees

Organisation	Sector/Type	Location
Don & Low	Manufacturing	Forfar
GlaxoSmithKline	Manufacturing	Montrose
Michelin	Manufacturing	Dundee
NCR	Manufacturing-Support Services	Dundee
Angus Council	Public Sector	Forfar
NHS Tayside	Public Sector	Dundee
Perth & Kinross Council	Public Sector	Perth
Tayside Police	Public Sector	Dundee
Alliance Trust	Financial & Business Services	Dundee
Bank of Scotland	Financial & Business Services	Dundee
Henderson Loggie	Financial & Business Services	Dundee
University of Abertay	Higher Education	Dundee
University of Dundee	Higher Education	Dundee
University of St Andrews	Higher Education	St Andrews
HMRC	Customer Contact Centre	Dundee
TESCO	Customer Contact Centre	Dundee
C I Travel	Tour Operator	Jersey
Platinum Golf	Tour Operator	Broughty Ferry
Forth Ports	Transport	Dundee
Stagecoach	Transport	Dundee
DP&L	Travel Agent	Dundee
Ramsay World Travel	Travel Agent	Dundee
Apex Hotel	Tourism	Dundee
V&A Project	Visitor Attraction	Dundee
C&J Lang	Wholesale	Dundee
DC Thomson	Publishing	Dundee
SSE	Energy	Perth
Insight Training	Corporate Training	Dundee

7.7. Perhaps reflecting their size, the vast majority of those we interviewed book flights via a local third party travel agency. Those that are part of a wider organisation use a national level agency. Companies whose main or sole site is in the area tend to use a local travel agent; others use a combination of travel agency and staff booking individually.

7.8. Where travel agents are used the specification given to them is reasonably broad. It tends to include the required destination and timings of travel, rather than stating specific flights. The agent then provides a number of options for the customer to choose from.

7.9. Few consultees have specific environmental policies that constrain their amount of air travel. The main constraint on travel is the need to remain 'on budget', which is reflected in the core issues we identified. Some have introduced video-conferencing facilities. However, this has had - at least to date - no significant impact on the number of flights.

Destinations Required

7.10. A majority of consultees make international flights as well as domestic ones. In general, the numbers of international ones are small in number emphasising the importance of hub access to meet these needs. However, in two cases they exceed the number of domestic flights made. The most commonly cited international destinations were:

- United States-to a range of airports, mostly in the north/north east.
- France-Paris CDG, Clermont Ferrand.
- Ireland-Dublin, Cork.
- India.

Heathrow appears to be the most common hub airport used, although Gatwick and Amsterdam were also mentioned.

7.11. London is clearly the main destination for point-to-point flights. Many consultees make at least some use of Dundee-London City, however, increasingly it forms a minority of the total number of flights they make to London. Where consultees use an airport other than Dundee this is overwhelmingly Edinburgh; the exception are those who are based in the north of Angus who are more likely to fly out of Aberdeen.

7.12. There are a small number (around five) of high volume users of the Dundee-London City service. These organisations are headquartered in the area and, therefore, tend to have more senior management with a very high value of time. However, these companies also make significant use of Edinburgh-London services, including those to London City - for some this is to fly to Heathrow to catch a connecting flight.

7.13. Birmingham is the main regional UK airport that local stakeholders interviewed were using. A number of them had used the flybe Dundee-Birmingham service. However, the number of annual return trips per company was generally low (less than 50 in almost all cases). The return fares paid ranged between £150 and £240, but we understand that the top fare could be around £500 (although none of our sample appear to have been paying this).

7.14. The following domestic destinations were also mentioned during the interviews:

- Cardiff/Bristol.
- Manchester.
- Belfast.

However, the demand for flights to these regional airports appeared lower than to Birmingham.

Leakage of Catchment Demand

7.15. Our sample as a whole make clear that local businesses and public sector organisations are making a much a higher number of flights to London from Edinburgh rather than Dundee. The interviews suggest the main reason for this is *cost*. Some consultees cited Dundee return airfares as being around £200 higher than those from Edinburgh.

7.16. It appears that Dundee-London City fares are £300-£500 if booked one week in advance. Fares booked three months in advance are £190 (recognising that there are very few such tickets available). This compares to £100 on Edinburgh-London City and one-week advance return ticket prices to other London Airports of £120-160 with easyJet and £200-400 with BA.

7.17. Some of the larger volume users of the Dundee service receive a corporate rate via a local travel agent. However, this does not significantly reduce the fares that are paid and overall, fares appear to be considerably cheaper on Edinburgh-London services (by up to 50%). This is particularly the case for the no frills services to Gatwick, Luton and Stansted; less so for flights to London City and Heathrow.

7.18. It would appear that for many consultees, the airfare almost always outweighs the financial and time cost of surface travel to/from Edinburgh airport, even though on occasion their staff may use a Dundee flight even though it is cheaper to fly out of Edinburgh. This is to avoid an overly long working day for the staff member.

7.19. The one-way journey from Dundee to Edinburgh takes around 1-1½ hours by road, but is not perceived to be an arduous drive, even in peak periods when the approaches to the Forth Road Bridge can become busy. The cost of a taxi is around £70-80 one way. One stakeholder we interviewed claimed a hire car cost as little as £10 one-way for large organisations that have discounted rates; we are a little sceptical about this but figures of £30-40 are probably realistic. Rail is generally not used, as this requires onward transport from central Edinburgh out to the airport.

7.20. Thus, when the lower airfares out of Edinburgh are included, the total travel cost to fly from Edinburgh is often materially lower than from Dundee. So the main issue with surface travel to Edinburgh is the journey time, rather than the financial costs or it being a difficult journey to make. It can mean an early start from home for the first flights out of Edinburgh. It can also mean a long day trip with travel back from Edinburgh Airport at its last leg. This is in a context where most organisations' staff live locally (i.e. in Dundee, Angus or north east Fife).

7.21. The second major reason for flying out of Edinburgh the stakeholder consultation identified, is what is now seen as the *poor timings* of the Dundee-London City services. On only one day of the week does the first flight arrive into London City before 10.00 ; and the flights back North are at either 16.20 or 20.25 which means either quite a short or long day in London. But between Tuesday-Friday there is no opportunity to make a day trip from London to Dundee. This is because the first flight north arrives around 1800. Wider stakeholders, as well as users, believe this is reducing inbound travel by passengers who would otherwise be willing to pay high fares for the convenience of flying into Dundee; these people are now flying into Edinburgh and taking a taxi to Dundee in order to make a day trip.

7.22. In the case of the air link to Birmingham, terminated by Loganair in December last year, the service was seen as cost-effective. Its timings allowed a day trip to be made with a full working day at the Birmingham end. These companies now use the Edinburgh-Birmingham service, and it is notable that Flybe have recently announced they will be increasing frequency on this route, which may help address the general requirement for at least one night to be spent away from home. On occasion companies have used the Edinburgh-Manchester to access parts of the Midlands because of this, as historically the timings on the latter route are better than those on the Birmingham service.

7.23. Finally, a number of organisations are at least considering more use of *rail for longer journeys*. One travel agent reported that their corporate customers' spend on rail has increased 20% in the last year, probably reflecting disgruntled former air passengers opting not to use the air service to London City because of the high fares. They expect it to increase again in the next 12 months. This includes use of both daytime trains and sleepers. However, use of the sleeper rather than air appears to be at the discretion of the individual traveller rather than set by company policy.

<u>London Airport Preferences</u>

7.24. A number of businesses-but not a majority-see an advantage in the Dundee service flying into London City rather than another London airport. This reflects where they are travelling to in the capital rather than the onward connections available at City Airport. It is seen as convenient for access to: the City of London's financial sector; central London for meetings with funders, partners and advisers; and companies that are part of their group.

7.25. Others do not see a particular advantage in linking with London City. This is because they are travelling to a final destination that could be reached more easily from another London airport.

7.26. Consultees were asked to consider if the Dundee-London City service no longer operated, what other London airports serving the capital might provide an acceptable alternative. The most popular one was Gatwick. In order of frequency the other responses were:

- Stansted.
- Luton.
- Heathrow.
- Southend.

7.27. These choices mainly reflect the respondents' final destination when making point-to-point flights to London. Opportunities for connecting flights at each of the airports appear to have been less of a factor. This could reflect the number of consultees who make few or no international flights via London at present.

Other Potential Destinations

7.28. Consultees were then asked to state what, if any, new scheduled services from Dundee would be of most use to their organisation. For point-to-point travel, the most common one was Birmingham. This was followed by Manchester, and then a small number of responses for each of Belfast, Cardiff, Gatwick and Southampton.

7.29. Responses in relation to a service to a hub airport were dominated by Amsterdam, which was mentioned by a large proportion of the sample. The most common other ones, albeit few in number, were Paris CDG, Dublin and Heathrow.

7.30. It is worth keeping in mind, however, that the forgoing reflects a qualitative overview of demand for *business travel*. In terms of personal travel it is likely that London again (and especially Heathrow), Belfast (because of the scale of the student population from Northern Ireland), Dublin and Amsterdam would be much more prominent as desired destinations. In terms of leisure destinations, the Channel Islands clearly have a following as demonstrated by the commitment of the local travel agent, but so would sun destinations like Palma de Majorca or southern Spain, a view again confirmed by the local travel industry representatives.

Price Elasticity

7.31. Consultees were then asked what premium they/the market in general would be willing to pay on their return air fare to fly from Dundee rather another Scottish airport (in this context Edinburgh). The premium would reflect: reduced journey time; reduction in surface transport costs; and shorter time at Dundee airport prior to boarding.

7.32. The most common response was a premium of £50-£99; this was stated by nine respondents. The other responses were:

- £100-£149 (4 respondents).
- Less than £50 (3).
- £150-£249 (1).

7.33. Whilst the forgoing would normally be too small a data to draw any statistically robust conclusions from, the stakeholders responding between them represent a material share of the current users. Since the replies received are in line with the hypothesis set out in paragraph 7.18, even though the absolute number of responses are small, they nevertheless seem to us to provide good grounds to draw the conclusion that a premium of £60-80 would seem like a sensible working assumption, for route planning purposes depending on the carrier involved and service timings and quality.

Demand *vs* Supply

7.34. That said, there was no consensus amongst business consultees on the likely trend in the number of flights likely to be required in the medium term from Dundee. Some saw no change. In contrast, a number expected their flight numbers to decrease, albeit modestly, due to budgetary pressures. Others expect an increase in line with their general business growth. The universities expect to see a requirement for more international flights as they increasingly internationalise their operations.

7.35. The most significant users of the Dundee-London City service would see the greatest impact if it was to be discontinued, although it appears they are small in number.

7.36. There is stated demand for flights to other destinations-notably Amsterdam. However, there was a general realisation that only a limited range of destinations could be financially viable, especially given the services available from Edinburgh.

Other Comments

7.37. A number of respondents also mentioned that the airport was important in the overall “offer” to visitors, students and potential investors.

7.38. Very few respondents saw a need for non-aviation uses at parts of the airport site. This reflects its proximity to the city itself where, it was felt, there is an adequate existing/prospective supply of hotels and other commercial property.

8. BENCHMARKING

8.1. The purpose of this chapter is to benchmark Dundee Airport against other small regional airports to identify areas where its is under-performing, but also with a view to yielding useful insights into potential opportunities and business models, that could be of significant value when drawing up future development options for Dundee.

8.2. With this in mind, we have considered the following areas, drawing on our knowledge of small regional airports up to a passenger throughput of less than 1mppa, both within the UK and in Europe:

- Development and marketing of air services, including how to engage the business sector and local communities in this activity to give confidence to airlines, who themselves face difficult economic circumstances, to start new, or maintain existing, routes;
- expanding non-passenger based revenue streams;
- operating models and to maintain a tight control of costs;
- governance and funding models.

8.3. The scope of the study means the exercise is of necessity discursive rather than comprehensive, but it has nevertheless revealed some useful perspectives, not only in terms of commercial opportunities which may be able to secure some traction at Dundee, but also in providing evidence of some of the hard realities that need to be faced when considering Dundee's future.

8.4. First and foremost amongst these is that within the UK many small regional airports are grappling with the same challenges of scaling activity to a level where the minimum fixed costs of operating an airport safely and securely can be covered at a price which the market is willing to bear, or of finding other ways of cross-subsidising those core requirements. Whilst in Europe, these core costs are subsidised either directly or indirectly by the municipal or regional Government, for those airports in the UK that moved from under the umbrella of public ownership in the 1990's and 2000's, the problem is particularly acute, as there is no longer the fall back of public subsidy which most small airports in Europe rely on.

8.5. A good example of this is Plymouth, where the City Council, despite a petition of 38,000 residents, has either been unable or unwilling to step in to save the Airport once its former private sector operator, Sutton Harbour, gave notice of its impending closure. Similarly Galway in Ireland, which like Plymouth was dependent on a single carrier, whose prospects were significantly impacted by external third party decisions (in Galway's case loss of PSO routes), leading to a loss of frequency and passenger numbers and ultimately the closure or withdrawal of the carrier. Other examples include Sheffield and Swansea Airports, both of which served substantial cities but closed after the failure to retain key airlines or other commercial services.

8.6. In this respect Dundee has been fortunate in terms of the Scottish Government's willingness to step in and the availability of a vehicle (i.e. HIAL) through which to do so. The Welsh Government made a similar intervention at Cardiff in June this year, as historically the Irish Government and Northern Ireland Assembly did at Londonderry and Cornwall Council have at Newquay. The Isle of Man Government and the States of Jersey and Alderney and the Bailiwick of Guernsey, have always recognised the need to play a supportive role in terms of the provision of airport infrastructure (see Table 8.1). This appears to reflect recognition amongst public authorities in peripheral regions about the importance or maintaining or providing air services to connect them to national and European markets.

Table 8.1: Benchmarking Ownership and Operation of Small Airports in the UK

Airport	Geography within the UK	Ownership	Name of owner	Managed By
Prestwick	Peripheral	Private	Infratil†	Infratil
Doncaster Sheffield	Regional	Private	Peel Holdings	Peel Airports
Isle of Man	Island	Regional Govt	IOM Govt	Dept for Infrastructure
City of Derry	Peripheral	Local Govt	City of Derry	Regional City Airports
Exeter	Regional	Private	Patriot Aviation Group	Regional City Airports
Bournemouth	Regional	Private	MAG	MAG
Norwich	Regional	Private	Omniport	Norwich Airport
Humberside	Regional	Private	Eastern Group	Humberside Int Airport
Blackpool	Regional	Private	Bbcap	Regional City Airports
Newquay	Peripheral	Local Govt	Cornwall Council	Cornwall Airports Ltd
Durham Tees Valley	Regional	Private	Peel holdings	Peel Airports
Plymouth *	Peripheral	Public/Private	Plymouth City Council	Sutton Harbour
Dundee	Peripheral	National Govt	Scottish Govt	HIAL
Manston	South East	Private	Infratil†	Infratil
Gloucester Staverton	Regional	Local Govt	Cheltenham & Gloucester Councils	Gloucestershire Airport
Coventry **	Regional	Private	Patriot Aviation Group	Regional City Airports
St Mary's, IoS	Island	Local Govt	IoS Council	IoS Council
Guernsey	Island	Local Govt	Bailiwick of Guerney	States of Jersey
Alderney	Island	Local Govt	States of Alderney	States of Jersey
Cambridge	South East	Private	Marshalls	Cambridge Airport

Source: Northpoint Aviation research
Notes: * Mothballed in 2010 ** Passenger services ended 2009
† Sale pending

8.7. For airports that are still operating but are in private ownership, but serve less geographically remote regional communities, with access to reasonable surface alternatives or larger airports within an acceptable drive time, the prospects appear bleak at the moment. These include:

- *Prestwick and Manston*, both of which are heavily loss-making and in the process of being sold;
- *Coventry,* which is under threat of never re-opening to scheduled traffic having failed to find a scheduled airline to replace Thomson Fly*;*
- *Blackpool* that might have closed to scheduled traffic but for a contractual obligation with Jet 2 which the owners were unable to extract themselves from despite going to court; and
- *Durham Tees Valley and Doncaster-Sheffield*, where Peel Holdings were willing to step-in and have the resources and expertise to try to develop non-passenger based models to create a long-term sustainable future for the airports concerned*.*

Table 8.2: Benchmarking Catchment and Competition - Small Airports in UK

Airport	Area Served	Population City/Region Served*	Commercial Passengers in 2001	Commercial Passengers in 2006	Commercial Passengers in 2011	Larger Airport Within 1hr
Prestwick	Ayrshire	370,000	1,231,841	2,394,928	1,295,512	Yes - GLA
Doncaster Sheffield	South Yorkshire	1,340,000	33,000	900,000	812,000	Yes - EMA
Isle of Man	Isle of Man	83,000	694,691	785,000	701,847	No
City of Derry	West NI + Donegal	237,000	187,000	341,750	405,000	No
Exeter	Mid, East & West Devon	785,000	332,715	970,614	709,314	No
Bournemouth	Bournemouth & Poole	400,000	264,653	960,773	612,547	Yes - SOU
Norwich	Norfolk and Suffolk	375,000	389,877	745,192	413,837	No
Humberside	S Humberside & N Lincolnshire	400,000	435,264	515,889	273,096	No
Blackpool	Fylde Coast	320,000	80,501	552,641	235,682	Yes - MAN
Newquay	Cornwall	550,000	75,000	343,143	209,574	No
Durham Tees Valley	Tees Valley	575,000	730,402	911,925	190,284	Yes - NCL
Plymouth **	South Devon	350,000	124,562	76,568	N/A	Yes - EXE
Dundee	Angus, Perthshire & N Fife	450,000	49,200	51,496	61,648	No
Manston	East Kent	400,000	5,761	9,845	37,169	No
Gloucester Staverton	Cheltenham & Gloucester	320,000	64	166	14,737	Yes - BRS
Coventry***	Warwickshire & Coventry	760,000	1,485	609,859	N/A	Yes - BHX
St Mary's, IoS	Isles of Scilly	2,200	131,949	128,093	112,218	No
Guernsey	Channel Isles	63,000	911,000	899,000	933,000	No
Alderney	Channel Isles	1,600	73,000	76,800	69,500	No
Cambridge	Cambridge-shire	500,000	18,250	1,400	550	Yes - STN

Source: Northpoint Aviation research

Notes: * Estimates derived from a variety of sources ** Mothballed in 2010 *** Passenger services ended 2009

8.8. Table 8.2 serves to make the point that while most small airports in the UK have seen their traffic decline substantially since their heyday in 2006-07, those worst affected have typically been in competition with larger airports on their doorstep. The industry trend since the onset of the recession, has seen large and medium sized airports perform less badly as they have increased their regional market share in line with consolidation in the airline industry, while small airports have suffered from regional airline closures and route volatility associated with the low cost carriers which in the early 2000's were the principal source of traffic growth (see Table 8.3). Hence in Table 8.2 the exceptions to the general rule have been:

- "island airports", where passenger declines have been modest, because there is no competitor competing for traffic, there is a base carrier and because in most cases there are direct links to the London market which has been relatively stable;
- airports such as Gloucester Staverton and Doncaster-Sheffield, which have strong catchment areas and are relatively new to scheduled traffic and are thus operating from a low starting base; and
- to a lesser extent airports such as Exeter and Humberside which are bases for key regional airlines (notably flybe and Eastern respectively). Inverness is also a good example of this, benefiting as it does from a strong flybe/Loganair presence (even with the former's pending withdrawal from the Gatwick route.

8.9. With strong competition from growing low cost and network carrier operations at Edinburgh, Aberdeen and to a lesser extent in the leisure market from Glasgow, Dundee has none of these inherent 'stability' factors. It has a London link, but one where passenger volumes are being priced-off by rising fares and there is reliance on a London City based carrier which is the subject of much speculation as to its long-term future as its parent (i.e. Air France/KLM) undergoes a series of consolidations.

8.10. The stable factors that Dundee does have, however, are firstly its much greater remoteness from London than almost all of the regional airports mentioned, and secondly the un-competitiveness of rail for day return business journeys from Dundee to London - whereas rail is a significant competitor for many domestic services from English regional airports. Nor is rail ever going to be competitive for day return business from Dundee.

8.11. But then Table 8.3 also highlights another important, but for Dundee, difficult truth, notably that those airports that have a diversity of income streams, are managing to transition the current economic environment better than those who do not. So for example, Gloucester Staverton, Norwich, Bournemouth and Exeter have not only a substantial property portfolio generating rent, but also other sources of aeronautical income (i.e. Business Aviation/GA and offshore activity) to fall back on. This is also a model that is being promoted at Newquay through its Aerohub Enterprise Zone, at Shannon through its new Development Corporation, and by Peel Airports through its core property expertise and its re-conceptualisation of Airports as focal points

of associated local business and residential communities – 'airport villages' if you like.

Table 8.3: Benchmarking the Traffic Mix and Ancillary Revenue Sources of Small Airports

Airport	Commercial Passengers in 2011	Dependence on Low Cost Carriers*	Traffic Mix*	Other Income Sources
Prestwick	1,295,512	Yes	Low Cost, Freight	GA, MRO, Property
Doncaster Sheffield	812,000	Yes	Low Cost, Regional, Charter	GA, MRO, Property
Isle of Man	701,847	No	Regional	Bus Av, GA
City of Derry	405,000	Yes	Low Cost	GA, Property
Exeter	709,314	No	Regional, Charter, Freight	Bus Av, GA, MRO, Property
Bournemouth	612,547	Yes	Low Cost, Charter, Freight	Bus Av, GA, MRO, Property
Norwich	413,837	No	Regional, Charter	GA, Offshore, MRO, Property
Humberside	273,096	No	Regional, Charter	GA, Offshore, MRO
Blackpool	235,682	Yes	Low Cost	Bus AV, GA, Property
Newquay	209,574	No	Low Cost, Regional	Military, Property
Durham Tees Valley	190,284	No	Regional, Charter	Military, Property
Plymouth**	N/A	(No)	(Regional)	GA, Military
Dundee	61,648	No	Regional	Bus Av, GA
Manston	37,169	No	Regional, Charter, Freight	Bus Av, GA, Military
Gloucester Staverton	14,737	No	Regional	Bus AV, GA, Property
Coventry ***	-	(Yes)	(Low Cost) Freight	Bus Av, GA, property
St Mary's, IoS	112,218	No	Regional	GA
Guernsey	933,000	No	Regional	Bus Av, GA
Alderney	69,500	No	Regional	GA
Cambridge	550	No	Regional, Charter	Military, Bus Av, Property

Source: Northpoint Aviation research
Notes: * (-) When the airport had pax services; ** Mothballed in 2010; *** Pax services ended 2009

8.12. Where this is not possible as a result of land ownership and planning constraints, or a legacy of liabilities that prevent it - as at Plymouth, Blackpool and Coventry, the future looks bleak. Dundee could very easily fall into this category due to its restricted land ownership, which prevents large-scale property development, if positive action is not taken quickly to address it. And it is worth recognising, that the fallback of continuing to rely on on-going public subsidies, as Dundee currently does, is potentially also under threat from proposed changes to the EU state Aid Rules, which have as an under-current, the closure of loss-making airports whose catchment can be served from larger airports nearby, and general strictures on public finances. Several such small airports are under threat in in Finland and Sweden. And the experience of Galway and Plymouth show that threat is real.

8.13. With this in mind, it is notable that even by comparison with some of its worst performing Peers, the level of subsidy per passenger required at Dundee (i.e. £52) is substantially higher than at other airports where we have been able to obtain detailed financial accounting information; and it is set to worsen if passenger numbers continue to decline (see Table 8.4). It should be noted, however, that this number is capable of sudden and material change as soon as services are added or removed and that because Dundee's capacity is so under exploited that you could get to at least another 100,000 pax p.a. at Dundee with virtually no change to operating costs, in which case the subsidy per passenger would fall considerably.

Table 8.4: Peer Airport Operating Cost Comparison

Peer Airport*	Passengers 2011	Operational Loss (£)	Operational Costs (£) 2011	Operational Costs (£) Passenger
Prestwick	1,295,512	-1,911,000	15,024,000	11.6
Humberside	273,096	-700,000	7,300,000	26.7
Blackpool	235,682	-2,109,787	5,419,245	23.0
Newquay	209,574	-4,846,881	7,430,481	35.5
Durham Tees Valley	190,284	-1,695,000	6,636,000	34.9
Plymouth (2010)	146,272	-889,067	2,957,080	20.2
Dundee	61,648	-2,437,000	3,252,000	52.8

Source: Company Accounts
Notes: * Other HIAL Group Airports excluded from Peer Airport comparison

8.14. Moreover, revenue generation per passenger is also comparatively low despite the strongly business orientated traffic which uses the airport, which in theory should be willing to pay more for the accessibility it offers (see Table 8.5).

Table 8.5: Peer Airport Revenue Generation Comparison

Peer Airport*	Passengers 2011	Commercial Revenues (£) 2011	Revenues (£) Passenger
Prestwick	1,295,512	13,113,000	10.1
Humberside	273,096	6,600,000	24.2
Blackpool	235,682	3,309,458	14.0
Newquay	209,574	2,583,600	12.3
Durham Tees Valley	190,284	4,941,000	26.0
Plymouth (2010)	146,272	2,068,013	14.1
Dundee	61,648	815,000	13.2

Source: Company Accounts
Notes: * Other HIAL Group Airports excluded from Peer Airport comparison

8.15. On the face of it, based on these comparisons, the prospects for turning round Dundee Airport's fortunes and reducing operational subsidies to levels that satisfy the Commission as well as Scottish Ministers look will be a challenge requiring positive collaboration from a range of key stakeholders. But there are business models, involving both public and private ownership, that appear to work. Amongst these Gloucestershire and Norwich Airports are perhaps the most interesting example for Dundee.

8.16. Owned by Gloucester City and Cheltenham Borough Councils, Gloucestershire Airport currently has around 15,000 scheduled passengers flying principally to the Isle of Man and Jersey. However, these flights made up only a small proportion (2-3%) of a total of 73,500 aircraft movements in 2012, the dominant category of traffic being General Aviation (training/testing, private and aero-club) flights. And yet despite this traffic mix, Gloucestershire Airport has made a small operating profit in each of the last 5 years, the principal contribution being rental income from a strong property portfolio and very tight cost control. Similarly Norwich, which was given borrowing powers by DfT in 2002 on the back of a strong financial balance sheet and has managed to maintain operational profitability other than in the worst depths of the economic downturn, has also benefited from a strong property portfolio and offshore related activity to reduce its exposure to fluctuations in passenger related revenues.

8.17. Meanwhile others peer airports such as Newquay, Shannon, Durham Tees Valley and Doncaster-Sheffield are all taking pro-active measures to reduce their exposure to declining passenger numbers and create new sources of revenue by combining:

- Strong cost controls.
- Provision of a competitive passenger offering (local, convenient, simple, efficient, cost effective) that allows airlines to attract traffic volumes that can sustain the cost and operation of core infrastructure.
- Marketing that offer strongly to the local catchment area so that there are high levels of awareness.
- Capital investment, usually with public sector support, to diversify income streams (aeronautical or property related).
- Securing buy-in to a clear business plan and pro-active support from a wide range of strategic stakeholders, both public and private.

9. ADDRESSING THE CHALLENGES FACING THE AIRPORT IN 2013 AND BEYOND

9.1. The core objective of this study is to identify whether there are any development opportunities that are realisable at acceptable cost, that can help improve the Airport's financial position, in the short-medium term, either by reducing or sharing costs, securing additional revenue or some combination of the two. Complementary objectives are to increase (or at the very least maintain) the Airport's contribution to the local economy and improve existing connectivity to other parts of the UK and the wider world.

9.2. Taken together, this represents a challenging agenda, especially in light of the numerous material constraints identified in the opening chapters of this report, notably:

- the infrastructure and operational constraints identified in Chapter 3;
- the difficulty of reducing the Airport's cost base significantly, without substantially reducing its fire cover, opening hours or ability to handle commercial passengers, because of the underlying fixed costs associated with providing fire-cover, air traffic control and security (Chapter 4);
- the competition from other airports, but particularly Edinburgh, and the dearth of opportunities for generating non-aviation property related income in Chapter 5;
- the ticket price and scheduling issues highlighted during interviews with key stakeholders in Chapter 7; and
- the high operating costs per passenger at Dundee, its inability to attract the passenger volumes associated with low cost carriers or the limited scope attract non-passenger related aviation activity because of a lack of physical space as other peer small regional airports have done (Chapter 8).

9.3. However, previous chapters have also identified a number of opportunities which could help to make a contribution to both core objectives, including:

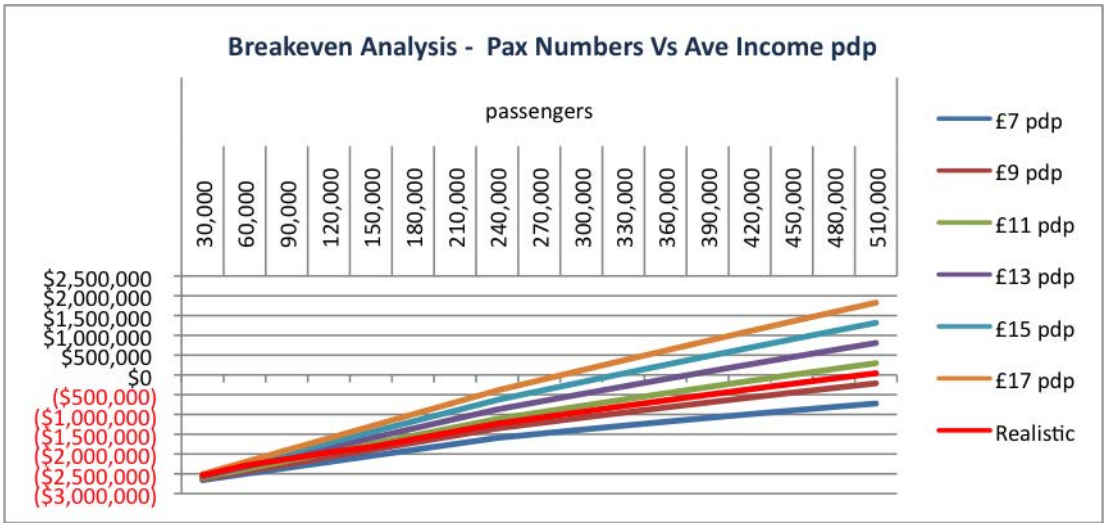
- The fact that increasing the airports throughput substantially should not require much by way of increased operating costs, probably until around 250,000 passengers, and beyond that point economies of scale would continue to kick-in as additional revenues outpace additional costs (Chapter 4).
- There is the underlying market to develop new domestic and add international services, and this could give rise, depending on the success with which the Airport can attract airlines who can then attract passengers from within Dundee's core catchment areas to passenger throughputs of between 75,000 and 400,000 passengers (Chapter 5).

- A steadily increasing catchment population, a number of sectors and major businesses/organisations with quite a high propensity to fly and the prospect of additional inbound visitors being attracted to the V&A and wider Waterfront area, should all expand the potential aviation market over time (Chapter 6).
- Scope exists to generate additional revenues from Business Aviation, Helicopter and GA traffic and also from aviation related property development to service their needs as they grow (Chapter 5).

9.4. In our view, the first challenge must be to maintain the existing London service to allow time to have a long-term replacement lined-up which can take advantage of the airport's potential eligibility for PSO funding from the UK Government[2]. Then to set about realising current known opportunities to capture additional activity, while developing a more detailed and coherent long-term strategy and 5 year business plan to make targeted investments to turn the Airport round.

9.5. In this context, it is worth referring to the seminal study led by Cranfield University for the European Commission back in 2002[3], which concluded that although there would be variances either side, 500,000 WLUs[4] should represent the break-even point for small regional airports (exempting depreciation). This is consistent with our own indicative analysis of what might be required to achieve break-even at Dundee, depending upon the assumptions that are made about what happens to operating costs, the revenue that is achievable per passenger (or WLU) and the scale of increased passenger volumes.

Figure 9.1: Breakeven Analysis for Dundee Airport



Source: Consultant's analysis

[2] See The Chief Secretary to the Treasury's Statement to the House of Commons on 27 June 2013.
[3] Cranfield University et al: Study on Competition between Airports and the Application of State Aid Rules – Volume 1; for European Commission – Directorate General of Energy and Transport (Sept 2002)
[4] WLU is a Work Load Unit – each unit represents one passenger or 100kg of freight.

Notes: Based on the assumption that 2013 operating costs remain constant until after a threshold of 240,000 pax pa is reached, where-after provision is made for increased in staff costs.

9.6. If revenues per passenger can be sustained at current levels (c£13/pax), whilst growth is achieved in passenger volumes and costs are held steady, then Figure 9.1 points to a breakeven at around 360,000 passengers, perhaps less if other income streams allow the intersect point to move to the right. But we consider it unlikely all these conditions will be in alignment and when additional operating costs are included and revenue per passengers are reduced to £11/pax to allow for discounts and route incentives, then under our "realistic" line breakeven is closer to 500,000. Again this figure could move to the right, but our costs assumptions have made no provisions either for servicing of any CAPEX related debt needed to cater for passenger numbers beyond the estimated 150,000pa capacity of the terminal and apron in their existing form, or for marketing associated with route development. As there is currently only £20,000 pa in the budget for marketing then unless substantial external resources are injected to support the marketing effort, the timeline for achieving this commercial sustainability threshold may need to be substantially extended.

9.7. What is clear, is that there is no imminent likelihood of a material dent being made in the current level of subsidy, and that although investing in non-passenger based commercial activities at the airport could substantially increase current levels of revenue in percentage terms for virtually no additional operating cost, at Dundee this element of the commercial strategy will only ever make a modest contribution because of the physical constraints of the site – it is certainly not the definitive answer to the airport's operating deficit. A commercially sustainable turn round will need, therefore, to be focused much more heavily on attracting new routes and additional passenger volumes. In the face of strong competition from other Scottish Airports (see Table 9.1 below), and this cannot be achieved with current levels of route development and marketing spend.

Table 9.2: Route Competition at Alternative Airports

Principal Competing Airports						
	ABZ			**EDI**		
Airport	**Pax pa 2011**	**Airlines**	**Rotations per week**	**Pax pa 2011**	**Airlines**	**Rotations per week**
Heathrow	652,520	BA, Virgin	74	1,271,299	BA	78
Gatwick	177,765	easyJet	19	669,068	A easyJet	54
Stansted				390,272	easyjet	26
Luton	147,688	easyJet	10	259,344	easyjet	22
London City		BA (new 2013)	51	344,868	BA CityJet	64
All London	**977,973**		**154**	**2,934,851**		**244**
Birmingham	83,011	BE	15	288,955	BE	35
Bristol	32,810	Eastern BMI	20	286,634	easyJet	22
Belfast International	-		0	236,628	easyJet	22
Belfast City	18,899	BE	5	115,330	BE	19
Southampton	22,621	Eastern	11	203,591	BE	31
Cardiff Wales	10,542	Eastern	7	83,573	BE	13
Manchester	144,547	BMI BE	43	119,615	BMI BE	39
Amsterdam	272,104	KLM	27	559,255	KLM easyJet	37
Dublin	55,997	EI	7	405,906	FR EI	39
Paris	117,193	AF	27	274,044	AF easyJet	26
	1,735,697		**470**	**5,508,382**		**771**

Source: Consultant's Analysis

9.8. These circumstances are going to put a premium on:

- Marketing the airport heavily to the right carriers so that services can be provided at a price and frequency which will prove attractive to the catchment area – we have good evidence that there is a willingness to pay a premium to use Dundee, but exactly what that premium is on each route and whether that will make the service viable requires further work.
- Offering an airport environment that is attractive both to airlines (in terms of charges and route development support), and to customers (as a result of speedy processing, good local accessibility, competitive car parking prices and an attractive terminal environment).
- Securing the support of key local businesses and other stakeholders.
- Raising the level of awareness within the catchment area.
- Addressing wherever possible any infrastructure constraints to optimise operational flexibility for as many carriers and aircraft types as possible.
- Maintaining a high quality service that attracts repeat users and local pride and commitment to look to Dundee Airport first for their air travel and only thereafter look elsewhere.

9.9. However, implicit in the study brief, was not just a focus on making Dundee Airport more commercially sustainable, but also the need to look at other options such as:

- Closing the airport and hoping a combination of moving the GA activity elsewhere and improving public transport connections to Edinburgh would mitigate some of the economic impact of such action.
- Relocating some or all of the airport's activity to Perth Airport.
- Examining and possibly market-testing alternative governance/ operational options for the Airport (e.g. a tendered management contract or JV with a private sector partner) to see if this can provide better value for money if on-going subsidy continues to be needed – as seems likely for several years at least.

9.10. With this in mind, the next chapter sets out a list of scenarios and associated options, which having consultation Transport Scotland, we have then subjected to a high level evaluation compatible with the STAG stage 1 appraisal.

10. DEVELOPMENT SCENARIOS AND OPTIONS

Development of Scenarios and Options

10.1. In order to draw up a definitive list of scenarios and associated options, for the short to medium term development of Dundee Airport, we first gave consideration to:

10.1.1. any incremental changes, within the existing terminal and airside operational envelope, that might be required to:

- optimise passenger throughput,
- increase non-passenger related aviation activity, and
- enhance commercial revenues

10.1.2. the possible role of Perth Airport in accommodating the same activities should it be determined there is not a long-term viable future for Dundee.

10.2. We agreed with Transport Scotland that given the priority accorded to the short-medium term time horizon for our work and the current lack of clarity about how exactly RAF Leuchars will be used for the new role allocated to it in the March Defence Base Review, it would not be appropriate to consider the potential joint use of RAF Leuchars for civilian aviation operations in this report.

Optimising the Capacity of Existing Facilities

10.3. Based on a high level assessment of existing facilities following a day-long site visit, detailed discussions with the Airport Management Team and close examination of the layout plans at Appendices C-D, and assuming that passenger flights wishing to use the airport are not concentrated into the same narrow time-periods (e.g. the morning and evening peaks), we estimate that the existing terminal building is capable of handling:

- One large regional aircraft (up to 90 seats) and one smaller one (up to 35 seats) or two small to medium sized regional aircraft (up to 50 seats) at one time based on current stand layout and without requiring tug deployment for all aircraft.
- This equates to a maximum of 90-110 departing passengers an hour and 150,000 passengers per annum without any material capital investment.

10.4. This figure is in line with the views of HIAL corporately, the current airport manager and the past Airport Development Officer at Dundee City Council, who had oversight of the airport within his portfolio. As such, we regard it as the best approximation available of the maximum capacity of the airport as currently configured, assuming a flight schedule for passenger services that does not require more than two aircraft on the ground and being serviced at the same time during the morning/evening peak periods.

10.5. Were there to prove to be a need for a more intensive concentration of passenger throughput at any point in the commercial schedule, either because of priority given to the use of the aircraft serving Dundee elsewhere or the slot limitations available at destination airports, then some small scale incremental investment in the terminal building could be necessary to increase hourly throughput beyond the levels specified above (e.g. to closer to 150,000 departing pax per annum) if current service levels are to be maintained. This would be important if the airport's convenience and amenity is to remain competitive relative to its competitors, with the most obvious potential pinch-points being check-in, the narrow security cone, the size of the departure lounges and the configuration and capacity of the arrivals hall.

10.6. On the balance of probabilities we think this outcome unlikely in the short-medium term, but we suggest nevertheless that plans are drawn-up in readiness for this eventuality so that if needed they can be implemented rapidly rather than have to turn away the opportunity to handle two large regional aircraft of 70-90 seats or three small to medium sized regional aircraft of 30-50 seats concurrently.

10.7. Essentially, therefore, it is neither runway nor apron capacity (although see below), which is the principal determinant of the airport's current capacity, but rather the size and layout of the terminal buildings. We acknowledge, that these have been configured as present to offer a cost efficient operation of current and recent schedules, but for between £500,000-750,000 these constraints could be eased if needed with the added advantage that, if undertaken, they could also facilitate an annual throughput of 250,000 passengers without the need for any further more substantive terminal enhancements.

Car Parking

10.8. If passenger numbers increase to levels where they exceed previous high points for passenger throughput (i.e. in excess of 70,000 pax per annum), additional car parking is likely to be required to accommodate increased passenger numbers within the scope of the existing terminal capacity. Airport car parking provides a positive revenue stream for the airport and so all parking now involves charges. Car Park 3, located to the east of the Ex Scottish Water building, provides more than adequate capacity for current levels of passenger throughput, but is neither ideally located nor capable of handling a major increase in passenger numbers.

10.9. Car parking at a small regional airport should ideally be located near to the terminal to avoid passengers struggling with luggage over a long distance and to maximise the convenience of use. Given the lack of depth at the Dundee Airport site there is limited scope for parking in front of the terminal, and for security reasons, such spaces should really be reserved for "known vehicles" such as taxi's or hire cars. This means there are few options that are more convenient than Car Park 3 that are capable of providing the long-term spaces that are potentially required. One possibility might be use to the existing GA aircraft parking area east of the Business Centre were Tayside

Aviation's operations to be relocated to the current Loganair hangar site as part of a possible comprehensive re-configuration of the airside areas of the airport described later in this chapter. However, that would then prevent the same site's possible use for a larger replacement Loganair hangar for which it is ideally suited. So for the time being the current facility to the east of the Ex Scottish Water building is probably the best option, especially as it is only 250 metres walk to the terminal entrance and is capable of being doubled in size to 255 long-term spaces if the more optimistic forecast outcomes in chapter 5 come to pass.

10.10. Prudence would suggest the airport should seek an option to acquire a small area of additional land from the University's adjacent sports facilities to cater for the possibility that a user is found for the Ex Scottish Water building that requires accompanying apron and its own car parking, requiring the existing parking to be displaced. The aim should be to have 200-250 spaces available for a 150,000-passenger throughput, although the exact number depends on the detailed traffic mix. More would be needed if a programme of summer charters were to be secured, if passenger numbers grew beyond 150,000 or if a substantive car hire business could be attracted to base itself at the airport, as that would typically need 30 dedicated spaces even if 10 pick-up spaces were allocated in front of the terminal building. By providing a good quality at least part-covered walkway between the car park and terminal building this general location probably offers the most pragmatic short and longer-term solution to the airport's car parking needs. This is because it can be reconfigured relatively easily, as required by other development projects, without having to relocate the spaces and associated payment facilities, at considerable expense, a number of times.

10.11. Discussions with TACTRAN highlighted a potential initiative associated with a large park and ride car park for the City, to be created just north of the 09 Threshold that could be served by a shuttle bus running past the airport terminal. Whilst this facility could offer a long-term safety valve for the airport, in reality it is some way away, would require a bus transfer and consequently would not form an ideal component of a commercial offer to passengers at Dundee that will focus on attracting a premium for speed and convenience.

<u>Public Transport Enhancements</u>

10.12. Investments to improve the airport's integration with regional public transport – such as the long distance coach routes on the abutting Riverside Drive and local bus services to and from the planned park and ride to the West of the airport (potentially also connecting the rail station to the airport) might also be worth considering. Such onward connectivity would be an important selling point to airlines and fairly cheap to implement. All that would be required is a couple of bus bays and passenger shelters for the long distance coaches and local/park and ride buses to be able to stop 30-50 metres from the terminal entrance, real time information systems linked to the terminal and perhaps an outsourced shared-taxi service available on-call to provide drop offs at the rail station or in the town centre.

10.13. It is easy to overlook that Dundee Airport could potentially have the best public transport accessibility of any airport in Scotland. Dundee itself lies at the centre of radial services by train and coach to Aberdeen, Edinburgh and Glasgow. En-route to these places a number of other sizeable towns are served by direct stops, including Kirkcaldy, Glenrothes, Dunfermline, Stirling, and Perth. Service frequencies are decent by both train and coach, and both the rail and bus stations are reachable in less than 5-10 minutes from the airport.

Apron

10.14. The existing main apron in front of the terminal comprises 2 self-manoeuvring stands of about 47m x 31m (suitable for 19-50 seat aircraft to be parked-up concurrently) separated by a 6m wide wingtip clearance zone. The airport can handle a larger aircraft (e.g. a Q400 or E170/190), so long as another aircraft is not occupying one of the two stands. To the west of that there is an access lane from the RFFS station and then a general aviation stand of about 37m x 32m whose pavement strength does not make it ideal for handling commercial aircraft. Further west still (see Appendix C), there is also a separate West Apron that was designed for long-term business aircraft parking and is marked for 2 x Falcon 900 aircraft installed by pushback. As the airport does not have pushback capability, this West Apron is consequently not currently being exploited to its full potential. If all three of the main stands (i.e. those in front of the terminal) needed to be kept available for commercial aircraft, then it is very unlikely the two smaller existing West Apron stands would be sufficient to handle the up to 12-15 business aircraft that sometimes use Dundee in a day. Indeed, it is notable that even in the present circumstances, where commercial traffic is limited to the four Cityjet movements a day to/from London City, there is a shortage of business aircraft parking during peak summer periods and during major golf championships traffic is often turned away if long stay parking is requested.

10.15. Arguably, therefore, the most important short-term investments in the airport's physical infrastructure would be to enhance the size and flexibility of the existing apron, either so as to allow larger or more commercial aircraft to be serviced simultaneously, or to facilitate the attraction of ancillary activity in the form of additional Business and General Aviation movements. The drawing at Appendix E shows how this might be achieved either by moving to a nose in and push back aircraft parking system or by extending the area of hard standing with suitable PCN strength.

10.16. The most cost effective option is likely to be remarking the existing apron for nose in parking and purchasing a suitable tug for push back (probably second hand at a cost of c£50,000 or leased). The exact configuration would depend on the scale and mix of traffic anticipated but it should be possible within the confines of the existing apron to provide at least two stands capable of taking a 70-90 seat aircraft alongside a third smaller

stand, or 4 stands for smaller 19-50 seat aircraft (including if needed a business jet) two of which could be used to handle a larger aircraft.

10.17. However, pushback is expensive in terms of annual staff certification and training, staff numbers, aircraft tugs and associated ground handling arrangements. Therefore, self-manoeuvring may remain the preferred solution until traffic demand justifies the costs associated with pushback; that said pushback is the key to long-term apron capacity. Moreover, for a few large aircraft types it may well be necessary to provide for tail-inward parking, as at London City Airport, in order to keep aircraft tail heights below the Instrument Transitional Surface.

10.18. In view of the foregoing, if self-manoeuvring were still to be favoured, for operational flexibility/cost reasons, then it may be more pragmatic to extend the existing terminal apron to the west (as shown in Appendix E), if a suitable business case can be made. It would certainly allow the airport to handle more aircraft in peak periods, enable business aircraft to park for longer than can currently be allowed and offer scope for displacement of other activities when development is taking place on other parts of the airport. It should be remembered that during construction the utility of existing space is often compromised. Consequently, having additional space that is less intensively used will provide a positive benefit during such works. Assuming a PCN of 27, the cost of these works is estimated to be £350,000-500,000 depending on a range of factors such as, for example, how and when it is procured, underlying ground conditions and the final design specification.

10.19. Appendix E also indicates a further potential aircraft parking area to accommodate general aviation aircraft might be provided between Taxiway C and the perimeter fence. The airport could explore with the CAA the idea that Taxiway C might be relocated southwards under visual separation criteria, subject to it being usable only when the airport was operating under visual flight rules. If this was acceptable its centre line could be at the edge of the 75m-instrument strip. Code B parking could then be provided north of the re-aligned taxiway, with aircraft remaining below the instrument transitional surface. There would, however, need to be a convincing safety case to ensure that the taxiway remained empty during ILS operations on Runway 09. The PCN strength of this new hard-standing area need not be as high as the core terminal apron.

10.20. This project could not be described as essential in the short-medium term unless it becomes clear demand is being turned away and a good business case can therefore be made for the work. We do, however, feel the area should be safeguarded for this purpose in the Airport Development Plan as it would have the added advantage of allowing a north-south depth of up to 39 metres (because these stands would not lie in front of the terminal), which would greatly facilitate the handling of larger aircraft.

Hangars

10.21. If there proves to be a market for increased aircraft maintenance activity at Dundee, then further hangar space may be required. Land south of the current Loganair hangar could not be developed for a similar facility because it would obstruct the view of the west end of the airport from the VCR and its height would breach the 1 in 7 transitional surface. However, a lower height facility (e.g. a GA hangar) could be provided in this location, which would benefit from being closer to the potential extended aircraft parking south of the perimeter fence as discussed in paragraphs 10.18-10.19 above.

10.22. The best opportunity for a larger hangar development is on land currently occupied by and to the east of Tayside Aviation where VCR visibility and the transitional surface would not be such a problem (see Appendix E). A relocation of Tayside Aviation and all associated general aviation to the current Loganair hangar site, releasing the eastern end of the airport for more substantive and efficiently laid out re-development, including bringing the Ex Scottish Water building into aviation related use, would provide the optimum solution in terms of building development, with the added advantage of separating general aviation from the airport security zones.

10.23. A new larger hangar could then be provided for Loganair on the current GA grassed parking area releasing the Scottish Water building for other uses including the possibility of helicopter operations for offshore or other purposes. Of course were this kind of demand not to arise, then the building would also lend itself to conversion to additional Business or light aircraft maintenance and a range of associated or independent office uses.

10.24. Although, in our view, the foregoing proposals would make the best possible use of the airport's available space whilst allowing the hangar and apron space available to its two principal existing tenants, Tayside Aviation and Loganair, whose retention at Dundee we consider should be a high priority, it does not come without a cost or indeed logistical difficulties during the transition to the new layout.

10.25. Moreover, there are a range of other sub-optimal, but also less expensive, development solutions that HIAL may also wish to explore. Bringing the Ex Scottish Water building into early and remunerative use is undoubtedly one. However, what we wanted to demonstrate in this report is that, despite the confined nature of the site, there is scope for material additional development within the airport's site boundaries and that this is independent of whether the existing terminal capacity of 150,000 passengers is brought into full use or, even in the longer term, increased to 250,000 passengers through some small-scale enhancements should it prove possible to attract this scale of commercial activity.

RFFS

10.26. To achieve this higher level of passenger throughput it is likely that aircraft size will increase which means that the required RFFS Category will also increase, possibly to Category 6 – based on Embraer and ATR/Dash 8 type aircraft. This could require some adjustment of the facilities at the fire station and ideally a permanent clear route from the fire station through the apron will be required to maintain the RFFS response time.

Estimated CAPEX for Optional Enhancement Proposals

10.27. Potential CAPEX requirements to facilitate the airport handling 150,000 passenger are likely to be de-minimis unless larger aircraft and significant peaks within future commercial service schedules are forthcoming. The case for extending the main apron is set out above, together with an order of costs.

10.28. Other projects discussed above are likely to be discretionary or depend on certain types of aircraft or business demand coming forward, at which point detailed business cases will need to be made for funding to each. However, to provide an indicative order of costs, Table 10.1 summarizes these optional enhancements. These figures exclude conversion works to the Ex Scottish Water building as these are likely to be substantive and user specific and consequently to estimate them here falls into the realms of speculation rather than informed broad-brush assessment.

10.29. In a high level strategic study such as this review, where we have worked without detailed surveys and design, such estimates are of necessity inevitably indicative, and consequently a 66% allowance has been made for optimism bias in Table 10.1 overleaf in addition to the allocation of a small contingency for unidentified items.

Table 10.1: Optional Enhancement Project Costs

Projects	CAPEX (£)
Car Parking	
Hard core/gravelled car park with tarmac/covered walkways	325,000
Equipment	100,000
Lighting/CCTV	75,000
Hangars/Apron/Taxiway	
Hangar	200,000
Additional Hangar	300,000
Apron/taxiway	210,000
GA Parking/Storage Area	190,000
Miscellaneous Items	
Tug (Second Hand)	50,000
RFFS Upgrades	150,000
Allowance for Other Unspecified Enhancements	200,000
Sub-Total	**1,900,000**
Contingency/Fees @15%	270,000
Optimism Bias @66%	1,430,000
Total	**3,600,000**

Source: Consultants estimates

Expansion of Perth and Fife Airports

Perth Airport

10.30. Although not originally part of the study brief, the consultancy team held discussions with representatives from the owners of Perth Airport (Morris Leslie) during the course of their stakeholder engagement process having come across several direct, indirect, existing and potential linkages with activities at Dundee Airport:

- Tayside Aviation use ATS to train engineers and have links with Perth College for pilot training;
- PDG occasionally use Dundee for training purposes;
- There is significant scope for a partnership between the two airports and UHI to develop a joint Academy initiative under-pinned not just by apprenticeships for local needs (eg Tayside Aviation and ACS) but also as a market entry level qualification for the rest of the Scottish aviation and aerospace sectors; and
- Funding for conversion training for Leuchars personnel (engineers and flying instructors) who want to stay locally. This could be funded by the Career Transition Partnership and Regular Forces Employment Foundation, with Perth College providing the training and Tayside Aviation and ACS career opportunities on completion.

10.31. The meeting noted that the two airports competed in a number of areas (e.g. pilot training, flying clubs) even though they were complementary in others and Perth Airport were keen to suggest that if a decision were eventually taken to close Dundee, they would be an obvious alternative location for the Flying school, GA and MRO activity. They also claimed that they had looked at how the runway at Perth could be extended to around 1600m so that they could accept Business Aviation and even scheduled commercial traffic and that this was possible, although embarking on such a project without a clear strategy position for Dundee and Leuchars having been established would represent too much of a financial risk for them.

10.32. Whilst it could possibly be worth further exploration if sustainable solutions cannot be found for Dundee, Perth has a number of material issues that would need to considered:

- Its location within the western part of the core catchment area identified for Dundee, which makes it less optimal for serving Dundee and North East Fife and closer to Edinburgh's orbit of influence;
- Its more scattered population (certainly when compared with Dundee);
- The lower quality surface access links are a problem, particularly the bottleneck at Bridgend; and
- Scone Aerodrome is on a hilltop 385 feet above sea level and therefore much more vulnerable to cloud. An extension of the runway to the north east would see the east threshold being 20 metres below

the mid-point of the extended runway, unless there was substantial filling over the full 300 metre strip width – because it would be Code 3 at 1600 metres.

10.33. These issues raise significant question marks about Perth's ability to develop facilities that are suitable for commercial traffic at a viable cost; this is much less of an issue for Business Aviation and GA traffic.

10.34. In view of the above, we have included Perth in our consideration of scenarios and options below, but only where a decision is taken to close Dundee Airport completely.

Fife Airport

10.35. Located 2 miles from Glenrothes in the centre of Fife, Fife Airport is a General Aviation airfield with a 700m x 18m runway tarmac, a small terminal/restaurant and 6 aircraft hangars. It is owned and operated by Tayside Aviation, which uses it to train pilots. There is also a flying club and skydive operation based there.

10.36. Its relatively rural location and short runway restrict its potential use to GA but there is scope to increase the size of that operation substantially with the right investment provided planning permission can be secured.

11. APPRAISAL OF INITIAL SHORT TERM OPTIONS

Introduction

11.1. This Chapter provides a high level appraisal of options developed as part of the study. The appraisal is based on the principles of STAG 1. The approach adopted reflects the scoping nature of the study and the resources available for the various parts of it.

11.2. In line with the STAG process we have identified problems and opportunities. This was used as the basis for setting transport planning objectives which also took cognisance of the established policy directives described at *Chapter 6*. The objective setting included input from Transport Scotland.

11.3. We then generated a series of options. Through a sifting process a number were identified as meriting appraisal. Others were rejected at that stage. Again, Transport Scotland had input to this process.

11.4. We appraised the remaining options in terms of their performance against:

- Transport planning objectives;
- The five STAG criteria;
- Established policy directives; and
- Feasibility, Affordability and Public Acceptability.

11.5. Reflecting STAG, this took the form of a qualitative appraisal based on the likely impacts of the options. For the transport planning objectives, STAG criteria and policy directives this uses a seven-point assessment scale that considered the relative size and scale of impacts. For Feasibility, Affordability and Public Acceptability a qualitative written analysis was produced.

11.6. Finally, we identified a number of options that are worthy of more detailed (Stage 2) appraisal.

Problems and Opportunities

11.7. The report has dealt extensively with the problems and opportunities facing Dundee Airport. Based on the synopsis provided in *Chapter 9* these can be summarised as follows:

11.7.1. Problems

Infrastructure and operational constraints associated with the airport's categorisation - notably that these serve to limit the type of aircraft and thus the range of markets that can be served from Dundee.

Current high operating losses at the airport - which reflects the high fixed costs associated with providing fire-cover, air traffic control and security when there are relatively low scheduled passenger volumes and the predominant traffic (i.e. General Aviation) can sustain only modest airport charges.

A schedule of services that is not attractive (in terms of prices and timetabling) to large parts of the market - consequent upon the small size of aircraft used and competition from other airports, most notably Edinburgh.

Limited ability to generate ancillary revenues - either from non-passenger related aviation activities or from non-aviation property-related activities owing to the physical constraints imposed by the location and configuration of the site, the costs and environmental sensitivities of expanding it materially and the difficulty of securing commercial returns from such activity.

11.7.2. Opportunities

Reduce operating losses by increasing passenger throughput - with little impact on capital costs or the largely fixed elements of operating costs.

Claw back some of the significant leakage to other Scottish airports - supporting development of both domestic and international passenger services.

Potential to increase passenger traffic as a result of the forecast growth in the catchment population - the presence of high PTF businesses and sectors, identified growth sectors and current and planned investment in the centre of Dundee.

Increase revenue from Business Aviation, Helicopter and GA traffic - and some limited property development related to service these activities.

Utilise the facilities at Perth to complement activities at Dundee Airport where during very busy periods such as major events, there is insufficient room to cater for all the activity wishing to use Dundee itself.

Transport Planning Objectives

11.8. On this basis, the following airport specific transport planning objectives were developed in discussion with Transport Scotland for use in this appraisal:

- Significantly reduce the level of operating losses at Dundee Airport – a key objective in the short term;

- Remove or reduce infrastructural and operational constraints facing Dundee Airport;
- Increase Dundee Airport's contribution to the catchment and Scottish economies;
- Increase passenger numbers using the airport by improving the quality and number of scheduled services using Dundee while seeking to minimise the environmental impacts of increased activity;
- Improve public transport access to the airport; and
- Whilst giving Dundee Airport primacy, have regard to the potential to utilize the various aviation assets in the catchment area optimally to the benefit of the economy of the area and Scotland.

Development Scenarios and Options

11.9. In order to provide some structure to thinking about the future prospects for Dundee Airport, four 'action-orientated' strategic scenarios were developed in the Interim Report based on:

- our analysis of the key challenges set out in Chapter 9;
- the development options for the airport itself, outlined in Chapter 10; and
- the potential role of other airfields nearby, discussed in Chapter 10.

11.10. Within each of these scenarios we then subsumed a number of alternative options, as described briefly below.

<u>Scenario A: The Closure of Dundee Airport</u>

11.11. Under this scenario, it is assumed that Dundee cannot attract sufficient scheduled traffic or ancillary aviation related activity to bring its need for subsidy in line with what the Scottish Government can afford or it considers represents value for money. A decision is therefore taken to terminate the current HIAL operation and close the airport, either permanently to allow re-development of the site (as is planned at Filton near Bristol), or by mothballing it to see whether circumstances change to allow it be re-opened (as is currently the case at Plymouth).

11.11.1. Option A1: Alternative Airports/Perth and Fife

This option would see the airport's General and Business Aviation activity forced to relocate, most probably to Perth or Glenrothes Airports. The commercial passenger base within Dundee Airport's core catchment area would be forced to rely on alternative airports for access to scheduled air services, perhaps facilitated by improved long distance coach connections and some improved timetabling of trains stopping at Gogar for access to the tram to Edinburgh Airport.

11.11.2. Option A2: Alternative Airports/Perth and RAF Leuchars

This option is similar to Option 1, but also assumes the retained RAF presence at Leuchars and the in-juncture on them to seek commercial income, will mean that Leuchars competes with Perth to provide a visiting facility and home base for General and Business Aviation Traffic.

11.11.3. Option A3: Perth Developed for GA and Scheduled Commercial Traffic

In this case, Perth is encouraged to invest in lengthening its runway and build a passenger terminal to compete with other airports for the East Central Scottish aviation market in addition to developing its offer to the Business and General Aviation markets.

Scenario B: Dundee Closes to Commercial Scheduled Traffic

11.12. This scenario is designed to reflect circumstances where a decision is reached that maintaining access for commercial scheduled services at Dundee is too expensive to justify given the commercial and economic returns they generate and that the airport should revert to its historic status as a GA Aerodrome. This would allow fire cover and security to be significantly downgraded and many other areas of cost savings identified. It would also allow the terminal building to be used to provide improved facilities for Business and General Aviation and this kind of activity to be substantially expanded.

11.12.1. Option B1: Remains as a HIAL Operated GA Airport

Although Dundee has the highest number of Business and General Aviation movements of any HIAL airport, it is questionable whether its remit would (or should) allow it to continue operating an airport without any intention of attracting passenger services. Moreover, whether its corporate structure would allow it to do this at a cost that could be borne by GA and Business Aviation traffic alone. This option will examine these issues.

11.12.2. Option B2: Lease/Contract a Third Party to Operate as a GA Aerodrome

The alternative to Dundee remaining within HIAL's portfolio is to look for an alternative operator to run the airport either under a long-term lease or as a tendered management contract, assuming the City Council would be unwilling to sell the airport freehold.

Scenario C: Maintain the Status Quo Position

11.13. Any option appraisal requires a 'do nothing' case for comparative purposes. In this case, this would amount to maintaining the status quo (i.e. passenger traffic levels between 30,000-70,000 per annum and existing ancillary activities in their current spatial configuration, with the Scottish Government continuing to subsidise the airport's operating losses but investing little in marketing the airport to build traffic throughput closer to 150,000 or developing the airport estate to increase ancillary revenues.

11.13.1. Option C1: HIAL

Under this option, the operating responsibility remains with HIAL.

11.13.2. Option C2: Contract Out

Under this option the operation is market tested, with potential operators invited to bid for the least level of subsidy with incentives for enhance performance, but once again no material investment is made in enhancing the airport's ability to increase traffic volumes or develop ancillary income.

Scenario D: Grow Dundee

11.14. This scenario examines the case for seeking to either reduce or eliminate the current operational subsidy by pro-actively seeking to grow revenues and reduce costs per WLU handled. It is accepted that such a strategy will require some limited capital investment and support to market the airport effectively to airlines, passengers and ancillary users alike.

11.14.1. Option D1: Invest in Dundee to Achieve 150k pax and Increase Ancillary Activity Where Possible.

This option considers the initiatives and investment required to grow the airport within its current terminal capacity, existing site boundaries and tight capital spending limits. Since the airport terminal is estimated to be capable of handling some 150,000 pax per annually without major investment, any expenditure would be limited to the minimum required to bring unused land or buildings into commercial use. The primary focus is on the airside infrastructure enhancements that may be needed to achieve this and on rationalising the layout of the rest of the site to attract additional ancillary revenue based on the proposals set out Chapter 10.

11.14.2. Option D2: Invest in Dundee to Achieve +150k pax and Optimise Use of the airport for Ancillary Aviation Activity.

This option considers the investment agenda for a more ambitious optimisation of the airport estate to maximise ancillary revenues alongside making full use of the terminal capacity, based on the re-configuration proposals set out in Chapter 10.

Option Sifting and Development

11.15. The forgoing amounts to a relatively large number of options for appraisal and so following submission of the study's Interim Report these were sifted in consultation with Transport Scotland with, in some cases, revisions being made to the original specification of some options in order to leave a manageable number for evaluation during the Stage 1 appraisal. Table 11.1 shows the options that were retained for the STAG Stage 1 assessment.

Table 11.1: Options Taken Forward to Stage 1 Appraisal

Do Minimum	Pre-sift was Option C1 – HIAL continues to manage the airport but with no investment in marketing to attract additional passenger traffic or the property estate to generate additional ancillary revenue.
A1	Close Dundee Airport and rely on alternative airports for commercial and either Perth or Fife for GA or some combination of the two.
A3	Close Dundee Airport and develop Perth for commercial and GA activity to serve much of the same catchment area.
B2	Lease or sell Dundee Airport to third party to operate as solely as a GA aerodrome with no schedule passenger traffic.
D1	Increase passengers to 150,000 per annum and make minor capital investments to bring unused land/property into use for ancillary activity within the existing airport layout.
D2	Increase passengers to 150,000 per annum and make the necessary capital investments to re-configure airport to optimise ancillary activity and revenues.

11.16. Two points should be noted in relation to this table: First, what was pre-sift Option C1 is now the "Do Minimum" option for the continued operation of Dundee. Previously there was no such "Do Minimum". Rather, there was what was effectively a "Do Nothing" (Options C1 and C2), the only difference being who managed the airport. However, in discussion with Transport Scotland it was agreed that "Doing Nothing" was not a realistic option for the future operation of Dundee because if 'nothing' is done, it is very likely Dundee would soon lose its remaining scheduled service and that annual operating losses would rise as a result well above the current £2.7 million per annum. Like Transport Scotland we do not believe that this is a tenable approach that the Scottish Government could allow to continue indefinitely. Hence we have re-designated Option C1 as a "Do Minimum" under which scheduled passenger operations continue rising to closer to the 70,000 they achieved in 2009, rather than the figure of less than 30,000 that is currently expected for 2013.

11.17. Second, the “Do Minimum” assumes HIAL continues to manage Dundee Airport as opposed to having that role contracted out. This is because we consider a change of management would have only a modest impact on the airport’s short and medium term prospects in the absence of additional investment. As such, the difference between C1 and C2 was a nuance based on delivery mechanisms rather than a materially different version of the same core scenario.

11.18. Table 11.2 shows the options that were rejected during the sifting process and the reasons for rejection.

Table 11.2: Options Rejected During Sifting

Option		Reasons for Rejection
A2	Rely on alternative airports for commercial + RAF Leuchars and Perth for GA	Assumed RAF Leuchars is not available; since it is to be retained as functioning military airfield Options A1 + A3 were appraised instead.
B1	HIAL operate Dundee as GA airport only	Public remit of HIAL, which is passenger focused, means it would not be appropriate for them to operate a GA only airfield long-term.
C2	Operation of Dundee tendered	Maintaining simplicity on the grounds that operational management alone is unlikely to affect outcomes materially without targeted investment.

11.19. In discussion with Transport Scotland, it was agreed that were Dundee Airport to close, it is not certain that RAF Leuchars would be willing to accommodate a substantial volume of the GA traffic that would be looking for a new home as opposed to a limited number of business jets as now. This led us to discount Option A2.

11.20. Were Dundee to revert to being a GA only facility (i.e. this role became permanent, rather than as a temporary measure while passenger operations were still being sought), then it would not be appropriate for the airfield to continue to be run by HIAL, especially when there appear to be a range of private options available and it would be competing with Perth and Fife Airports which receives no public subsidy. There is certainly no precedent for such an arrangement in the HIAL network, which was set up and is supported by the Scottish taxpayer to provide airport facilities for passenger services to parts of Scotland that would otherwise be underserved with such infrastructure. On this basis Option B1 was eliminated. As the Table explains, we could simply see no scenario in which the capital cost of the reclamation envisaged in Option D3 would generate sufficient financial or economic returns to justify that level of expenditure.

11.21. Based on the modest potential impact of who runs the airport in the absence of any financial investment in it, it seemed sensible to retain Option C1 (in which HIAL continues to run the airport) as our “Do Minimum” option rather than assume a change of operator. Hence Option C2 was dropped.

Appraisal Process

Transport Planning Objectives

11.22. Table 11.3, over, appraises each of the options against the transport planning objectives. This is based on a seven-point assessment scale as follows:

✓✓✓	strong positive impact
✓✓	good positive impact
✓	some positive impact
/	neutral
x	slight negative impact
xx	negative impact
xxx	strong negative impact

This scale is also used in subsequent appraisal tables.

11.23. In terms of *significantly reduced operating losses at Dundee* the best performing options in the longer term are those that result in the closure of Dundee (i.e. A1, A3, B2) or those that could achieve reduced operating losses based on increased scheduled passenger numbers (i.e. D1) and ancillary activity (i.e. D2).

11.24. Clearly, the most positive impact on increasing *Dundee's contribution to the economy* is through an expansion in scheduled passenger services and traffic to make better use of the existing terminal capacity (i.e. D1) alongside investment to optimise use of the residual estate (i.e. D2). In contrast, the options that would see the closure of Dundee to scheduled traffic have a strong negative impact.

11.25. Similarly, options D1 and D2 have the stronger/strongest impact in terms of *increased passenger numbers/services*. The options where Dundee closes are assumed to have only a slight negative impact given the current low levels of activity at the airport. The only option that materially addresses the infrastructure and operating constraints under which the airport currently labours is D2, which improves the amount of apron available for aircraft parking. The need to *minimise environmental impact* is effectively taken as a given for all options. However, it would need to be built into relevant options taken forward for detailed STAG 2 appraisal.

11.26. All of the options have a neutral score on *optimise public transport access to Dundee*. This reflects that some involve the closure of the airport; while none of the other options explicitly contains this element-although it would be equally possible under each of them. Again, ways of optimising public transport access could be included in relevant options taken forward for detailed STAG 2 appraisal.

Table 11.3: Appraisal Against Transport Planning Objectives

Option/ Objective	a. Significantly reduce operating losses at Dundee	b. Remove/reduce infrastructural and operating constraints facing Dundee	c. Increase Dundee's contribution to the economy	d. Increase passenger numbers/services at Dundee, minimise environmental impact	e. Optimise public transport access to Dundee	f. Maximise the potential of aviation assets in the catchment area
DM	/	/	/	/	/	/
A1	✓✓✓	/	xxx	x	/	xx
A3	✓✓✓	/	xxx	x	/	✓
B2	✓✓	/	x	x	/	x
D1	✓	/	✓	✓	/	✓
D2	✓✓	✓	✓✓	✓	/	✓✓

11.27. Finally, those options that assume some expansion of scheduled services (i.e. D1 and D2) score best under *maximise the potential of aviation assets in the catchment area*. A3, in which Dundee is retained for GA, scores better than the remaining options because Dundee continues to operate. This is because of the uncertainty, noted earlier in the report, around the ability of Perth to serve the core catchment as well as Dundee (potentially) can and the ability of Fife Airport to accept a significant proportion of Dundee's GA traffic.

11.28. Across the transport planning objectives as a whole Options D1 and D2 perform best. However, this reflects the concentration of the transport planning objectives on Dundee Airport and its catchment area that is inherent in the study brief rather than necessarily what might be the optimum solution if considered at a Scotland-wide level.

STAG Criteria

11.29. Table 11.4 provides an appraisal of each of the options against the five STAG criteria. Those options that involve any expansion of scheduled passenger activity (at Dundee or elsewhere) perform least well in terms of the *Environment.* As we discuss in Chapter 6, in the light of subsequent analysis, reports and the introduction of the ETS, it is questionable whether this policy is reflective of a true assessment of aviation's climate change impacts. However, as it represents extant policy we have utilized it as the basis for the appraisal. A1 and A3 are scored worse than a moderate increase in activity at Dundee in D1 and D2 because reliance upon alternative airports like Edinburgh for commercial services (as opposed to GA) will substantially increase surface travel, and therefore emissions, for passengers that would have otherwise used Dundee.

11.30. The scoring assumes that all options would need to be licensed/approved by the relevant authorities and hence they are all neutral in terms of *Safety*. There is a slightly higher incidence of accidents with GA compared with scheduled air movements but this would be reflected in features such as the Public Safety Zones, RESAs, safeguarding and safety procedures for the airfield.

11.31. The options with the greatest increase in scheduled passenger activity at Dundee perform best in terms of *Economy*. This reflects their greater contribution to economic activity and their providing reduced surface journey times by clawing back passengers who currently use other Scottish airports. The options involving Perth developing to take commercial traffic (i.e. A3) perform less well than those where there is an expansion of scheduled services at Dundee. This reflects the fact that such a relocation of scheduled commercial traffic would less clearly support future economic growth in the catchment's main city. Further, for many within the catchment the two alternative airports would mean a longer surface journey than would flying from Dundee.

11.32. The options encompassing significant expansion of scheduled services perform best in terms of *Integration*. This reflects the increased ability for passengers in the catchment area to fly to a greater range of destinations than now and in the case of Dundee use its already well-developed surface transport links to travel to/from the airport. Dundee is also an established scheduled passenger airport, unlike Perth.

11.33. Under *Accessibility and Social Inclusion* Options D1 and D2 offer the opportunity for a relatively large proportion of the catchment to fly from an airport that is quite near to their surface origin or destination and so perform better in this regard than the current "Do Minimum", Perth (A3) or options where Dundee closes to this kind of traffic. This reflects its better location in relation to the main population areas in the catchment.

11.34. Overall, Options D1, D2 and A3 perform best. This is because, while they have the most negative environmental impact, they score relatively well under the other criteria.

Established Policy Directives

11.35. Table 11.5 appraises each of the options against the established policy directives set out at Chapter 6.

11.36. The scores are very similar across each of GES, NTS and RTS. This reflects that each has similar themes, covering the economy, environment, accessibility and integration. This, in itself, reflects that:

- The RTS reflects the priorities of the NTS; and
- GES includes aspects of NTS under one of its Strategic Priorities.

11.37. Again, those options with the largest expansion of scheduled services score best. This reflects the more significant contribution to economic development, accessibility and integration, albeit offset to some extent by relatively significant environmental impact.

Table 11.4: Appraisal Against STAG Criteria

Option/ Criterion	Environment	Safety	Economy	Integration	Accessibility and Social Inclusion
DM	/	/	/	✓	✓
A1	xx	/	xx	x	x
A3	xx	/	xx	✓	/
B2	/	/	x	x	x
D1	x	/	✓	✓✓	✓✓
D2	x	/	✓✓	✓✓✓	✓✓✓

Table 11.5: Appraisal Against Established Policy Directives

Option/ Criterion		Scottish Government Economic Strategy	National Transport Strategy	Regional Transport Strategy
DM		✓	✓	/
A1		x	x	x
A3		/	/	/
B2		x	x	x
D1		✓	✓	✓
D2		✓✓	✓✓	✓✓

Feasibility, Affordability and Public Acceptability

11.38. Tables 11.6-11.11 show our assessment of feasibility, affordability and public acceptability for each of the options. In this context affordability is "cost to government".

11.39. It should be noted that no public consultations have been undertaken as part of this exercise. Therefore, the text shown under "Public Acceptability" reflects our stakeholder consultations plus our expectations of likely wider public response to each option.

Table 11.6: Do Minimum: Feasibility, Affordability and Public Acceptability

Criterion	Assessment
Feasibility	Entirely feasible given the limited increase in activity and the use of existing facilities and staff.
Affordability	No capital expenditure required. However, analysis suggests that annual operating loss would still be over £2.5 million. The actual operating loss could vary to an extent depending on whether the airport is operated by HIAL as assumed or contracted out and the scale of any ancillary income (e.g. property rent) secured – the likelihood is this will be minimal.
Public Acceptability	Reaction likely to be positive if access to London is maintained and a service is provided to a regional airport such as Manchester. Use of a London airport other than City would be welcomed by some business users and by leisure passengers if it resulted in a reduction in fares. There would be an adverse reaction, however, from some existing Dundee-London City users who do not see Luton or Stansted as alternative "business" airports.

Table 11.7: A1: Feasibility, Affordability and Public Acceptability

Criterion	Assessment
Feasibility	Closure would be feasible. Enhancements to public transport access to other airports (e.g. Edinburgh) is likely to be slight given the low volumes currently using Dundee and general acceptance of the existing access. The overall effect would depend on the extent to which Perth and Fife Airports pick-up current Dundee GA traffic.
Affordability	Would remove ongoing operating loss of over £2.7 million. Overall impact would depend on the level of decommissioning costs of closing Dundee. These would vary depending on whether the airport was permanently closed or mothballed. It would also reflect whether any public expenditure would be required to facilitate increased GA activity at Perth and Fife Airports.
Public Acceptability	Adverse reaction from the Dundee business community to the complete closure of the airport. This would reflect the potential impact on the level of current and prospective investment taking place in the city's economy and the outputs it might generate rather than the additional time/cost of using other airports.

Table 11.8: A3: Feasibility, Affordability and Public Acceptability

Criterion	Assessment
Feasibility	Closure would be feasible. Would depend on willingness of Perth Airport to make appropriate investment. It would also depend on the scale of passenger services that could be achieved given Perth's location in relation to the core catchment.
Affordability	Would remove ongoing operating loss of over £2.7 million. Overall impact would depend on the level of decommissioning costs of closing Dundee. This would vary depending on whether the airport was permanently closed or mothballed. Cost to government would reflect any public support required to "encourage" commercial passenger services out of Perth including investment in road infrastructure.
Public Acceptability	Adverse reaction from the Dundee business community to the complete closure of the airport. The reaction would reflect the amount of current and prospective investment taking place in the City's economy and the potential for air services out of Dundee to enhance its benefits rather than simply the additional time and cost of using other airports. We would expect positive reaction from some businesses and residents in the Perth area due to the increased activity at Perth and potential economic benefits. Some negative reaction could also be expected on environmental and traffic congestion-related grounds.

Table 11.9: B2: Feasibility, Affordability and Public Acceptability

Criterion	Assessment
Feasibility	Would be feasible assuming there is market interest and that the lease/selling price was sufficiently attractive to the lessor/seller.
Affordability	Would remove ongoing operating loss of over £2.7 million. Otherwise affordability is dependent on terms of sale and lease for overall impact on cost to government.
Public Acceptability	Adverse reaction from the Dundee business community to the closure of the airport to scheduled services. This would reflect the level of current and prospective investment taking place in the city's economy rather than simply the additional time and cost of using other airports.

Table 11.10: D1: Feasibility, Affordability and Public Acceptability

Criterion	Assessment
Feasibility	Initial analysis suggests that this option would be feasible.
Affordability	Initial estimate suggests capital cost of between £0.35-0.7 million plus annual operating loss of greater than £2.0 million.
Public Acceptability	Would be welcomed by business community (and some other users) even though the implied expansion in range of scheduled services and ancillary employment created is likely to be small. Might be some adverse reaction from those concerned about environmental impacts of the modest increase in scheduled activity.

Table 11.11: D2: Feasibility, Affordability and Public Acceptability

Criterion	Assessment
Feasibility	Initial analysis suggests that this option would be feasible.
Affordability	Initial estimate suggests capital cost of up to £3.9 million with annual losses coming in well below £2.0 million per annum.
Public Acceptability	Would be welcomed by business community (and some leisure users) given the admittedly limited expansion in the range of scheduled services, reduction in fare levels and the new jobs that could be expected to be created elsewhere on the site. Adverse reaction might arise from those concerned about environmental impacts resulting from the increase in scheduled and GA flights.

Conclusions

11.40. Having shortened the long list of options developed for the Interim Report following discussions with Transport Scotland, the remainder of this Chapter has focused on providing an objective high level Stage 1 appraisal of the options based on:

- Transport Scotland's agreed transport planning objectives in relation to HIAL and to Dundee Airport in particular;
- Standard STAG criteria;
- Established policy directives; and
- Feasibility, affordability and public acceptability.

11.41. The results are helpful in that they highlight the fact that retaining a passenger airport at Dundee appears to be a better option than closing it altogether, letting it become a GA airport or relying on Perth or Fife Airports to pick up the slack on GA traffic. This is certainly the case in the short to medium term while options for improving traffic volumes and reducing current levels of operating loss are explored. The airport is well placed in the catchment area, has existing passenger facilities that can be expanded at more modest cost than is likely at Perth to achieve the same service standards and is capable of generating material economic benefits.

11.42. Its principal downsides are that without increases in passenger numbers well beyond the short run target of utilising the existing terminal to the full, the current cost of subsidising the airport's operation will only ameliorate a little and indeed could increase (especially if Cityjet withdraws its London City service) without some targeted capital expenditure. Also, that higher air traffic volumes will bring some, albeit very modest, increase in noise and CO_2 emissions.

11.43. Given that passenger related revenues form a higher proportion of total income at Dundee compared to many other small regional airports of its kind (primarily because of its location and size constraints), the turn-key issues moving forward are likely to be whether the potential market for air services from Dundee described in Chapter 5 can be realised, the impact this will have on operating losses and what capital cost and economic benefits associated with achieving higher passenger volumes than under the "Do Minimum" scenario.

11.44. Developing a sufficiently detailed understanding of these issues to allow properly informed decisions to be made requires further work to be done on marketing, facilities planning and costing and business planning so that the capital cost and risk of delivering lower revenue subsidies can be properly profiled. The appraisals and these considerations point to taking forward options D1 and D2 to the next stage of assessment against the “Do Minimum” baseline. In parallel, we consider it might be pragmatic for alternative uses for the site to be evaluated, in the event that the airport closed, as this would also give some idea of the value and benefits it might generate in non-airport use for comparison with economic and financial outputs from its remaining as an airport.

12. CONCLUSIONS AND RECOMMENDATIONS

12.1. The purpose of this study has been to assess the short-term future prospects for Dundee Airport based on an examination of potential development opportunities in the context of a range of potential alternative scenarios. Specifically, the brief from Transport Scotland included the following four core elements in the scope of work:

- A review of current operations/infrastructure;
- A detailed stakeholder consultation/engagement exercise;
- Consideration of other regional airport initiatives/models; and
- Identification of development opportunities, the scoping of options for their delivery and then their appraisal using STAG Stage 1 methodologies.

12.2. This Final Report has sought to draw together the work covering all these areas while having regard to the imprimatur in Transport Scotland's study brief, namely:

> "*to provide a clear explanation of the underlying analysis and approach, including the assumptions behind the work and its limitations*"; while noting that,
>
> *"….. the intention of the study is not necessarily to come to one single conclusion or recommendation. ….. there may be a range of options that could potentially represent a way forward*".

12.3. With this in mind, it is not our intention to recommend a specific 'single' option for the airport's future – significant further work is required before any such final conclusions on this could be reached on a fully informed basis. However, on the basis of the work we have done we can:

- draw some high level conclusions on the airport's current direction of travel and the implications if this is not addressed;
- make some recommendations on short term initiatives which HIAL, Transport Scotland and other key local stakeholders should seek to pursue while further work to define an agreed short to medium term strategy is being undertaken;
- identify the most promising looking options which merit further work; and
- outline the least worse fall-back positions if none of those options prove to be deliverable or acceptable in cost benefit terms.

The Current Direction of Travel

12.4. In the absence of an approved and funded PSO to underpin its core London route, Dundee Airport is likely to face a significant threat to its last remaining passenger service particularly after the concerns it may be withdrawn during the summer 2013 season. The loss of the Belfast and Birmingham services that were being flown by Loganair resulted in rising levels of subsidy, currently estimated at £2.7 million per annum (a figure that could be expected to rise to between £3.0 million to £3.5 million if Cityjet withdraw their London City service) and the real prospect that the airport would need to close to commercial passenger services and the additional staff required to service them laid-off. A skeleton staff would need to remain to enable Business Aviation and GA traffic, which is growing, and an offshore operator (if one can be attracted) to continue to use the airfield and so avoid the potentially significant costs and risks associated with the complete mothballing of the airport followed by an attempt to re-start scheduled passenger operations at some later date.

12.5. Whether the level of financial commitment that Dundee Airport currently receives from the Scottish Government via HIAL can be justified for a protracted period, if there are no real prospects for attracting new airlines and other ancillary activity, is likely to be at the centre of decisions about the airport's long-term future. Based on our analysis of the airport's catchment, demand profile, operational constraints and a number of other potential business opportunities that an operational airport might attract, we believe that there may be scope for a number of domestic routes, a potential international link (to Amsterdam) and a range of charter destinations. If delivered, these would certainly help to improve the airport's prospects for reducing the level of subsidy it currently receives over time. Moreover, there are a number of carriers that have the equipment to operate those services.

12.6. Our high level market analysis alone will not be sufficient to attract those carriers – a combination of further detailed route specific analysis, attractive commercial terms, a risk sharing offer and strong marketing support will all be needed to make a strong case for airlines to put Dundee on their radar and persuade them to place aircraft at the airport in the face of competition for those assets from numerous alternatives within the UK and overseas.

Short Term Initiative

12.7. It is with this in mind that our principal recommendation to Transport Scotland is that, in conjunction with relevant strategic partners (most notably HIAL and Dundee City Council) they implement a short term initiative covering the next 12 -18 months at the heart of which would be the following measures:

- Working with Cityjet to retain their existing service to London City or, should that not prove successful, finding a replacement carrier to serve the London market – Transport Scotland have already

implemented this proposal by secured Cityjet's continued commitment to the route over the 2013-14 winter season;

- Build-up an in-depth understanding of the Dundee to London market and the economics of maintaining such a service given the constraints the airport imposes on the aircraft that could operate it;
- Pursue the potential to support the service, if required, through use of a PSO or the UK Government's recently announced £20 million of funding to improve air links to London where there is a risk that regional connectivity may be lost;
- Undertake a survey of potential demand for air services within the core catchment area, using a combination of survey monkey style techniques supported by the local media and follow up discussions with key local companies and the wider business community to provide evidence to support the CAA based analysis and hard market data for presentations to airlines;
- Draw-up a wider route development strategy (i.e. beyond the core London service) and identify the likely financial implications of implementing it;
- Develop an airport marketing plan to raise the profile of the airport within its core catchment area and engage pro-actively with a range of market segments (i.e. business fliers, in and out-bound leisure travellers, tertiary education, VFR passengers and the offshore sector) and the local community using a variety of marketing techniques but especially social media;
- Seek third party advocates in the form of high profile champions, ideally with a strong connection to Dundee, to help build public awareness and support for the airport;
- Develop a commercial offer, not just in the form of pricing but also convenience and customer experience that will make the airport a preferred choice for travellers within its catchment area;
- Prepare a prospectus to market the airport as a base for offshore, but particularly, renewables related helicopter operations and market it pro-actively;
- Engage with Tayside Aviation in negotiations on a joint plan to develop their flying school and maintenance businesses, increase apprenticeships, jobs and long-term rental income;
- Secure a productive use for the Ex Scottish Water building that generates rental income now without foreclosing the potential for attracting a blue chip use down the line; and
- Draw-up designs, costings and an associated business case for additional aircraft stands for commercial or business aviation use.

12.8. It is envisaged this agenda will require additional resources, which could potentially be shared with other HIAL airports where there is growth potential (e.g. Inverness, Sumburgh and Wick) to help HIAL in its ongoing efforts to attract new routes. This resource would be in the form of dedicated staff, specialist external consultancy support and capital, marketing and route development budgets. It will also need careful management to a set of clearly defined timetable and output targets, all designed to turn round the airport's

decline quickly and create a platform for longer term growth. Ideally, the major stakeholders with an interest in the airport would join Transport Scotland in committing resources to the delivery of such an initiative, because their active engagement is considered crucial to its success.

12.9. Some of the peer airports we benchmarked have:

- remained committed to marketing themselves to airlines and passengers during the economic down-turn;
- sought to engage actively and openly with their key stakeholders, local communities and customers; and
- have been ready to make judicious investments to position themselves for the recovery when it comes (e.g. Gloucestershire Airport with £4m on runway improvements and Norwich to develop new offshore facilities and hangars for spray-painting).

These airports (e.g. Gloucestershire and Norwich) have not only done better during the recession, but will be better placed to benefit from the upturn when it comes. Blackpool and Newquay are both showing signs of growing again after protracted declines and Exeter appears to be slowing the speed at which it has been losing traffic and has just been sold to a new investor. The message to the key stakeholders with an interest in the airport is clear. Do nothing and preside over what is likely to be an ongoing decline and at some point closure or, make some targeted pro-active investment now to ensure no stones have been left un-turned in the effort to giving Dundee Airport a fighting chance for survival.

Medium Term Strategy

12.10. Route development is not normally a process which generates quick wins; it is as much about persistence and long-term development of relationships with airlines as it is about knowing your market, understanding the operating models of different carriers and being able to present a well-targeted story to the right carrier with comprehensive and high quality analysis. Such things are the essential prerequisites to getting an airline's interest, but they won't close the deal. Small regional airports, operating in what is a very competitive industry, usually require consistent strong financial and marketing support for that to be achieved.

12.11. In our view, HIAL have the in-house capability to manage this agenda. They may, however, need support in the form of supporting resources to deliver the kind of marketing effort required to target all the airlines mentioned in Table 5.6 with the right kind of supporting analysis and the intensity and persistence of follow-up contact needed to 'convert' proposals into new routes being started from the airport. This may require additional resource not just in the short term, but probably for at least the next 3 years until all the opportunities have been 'chased down'. Dundee is not an easy 'sell' but if the issue of whether there is a market to be served at all is to be bottomed out once and for all, there is a requirement for this effort to be given appropriate priority and funding.

12.12. Consistent with the forgoing would be HIAL spending time to build-up and firmly establish the potentially important relationships identified by the stakeholder survey undertaken for this study, and by working on the proposed Short Term Initiative. The aim is to develop a clear and comprehensive picture of business usage to present potentially beneficial corporate relationships to airlines. There is clearly a lot of goodwill towards the airport in the business community if the appropriate services can be provided at the right price but, they also need to be engaged in the effort to attract those services.

12.13. We would also recommend an ongoing commitment to social media based surveys of the views of the local population within the airport's core catchment area towards the Airport, the kind of pricing they would respond positively to, on which routes, and their feedback on how well the airport is doing in optimising its own service offer. This can be done very efficiently and cost-effectively using the same online tools mentioned earlier, especially if local newspapers and other media outlets remain actively engaged in helping the airport to attract airlines. The surveys, correctly specified, can also help to identify the best methods of communicating with potential passengers in the catchment area, the improvements they would like to see at the airport and the facilities and ancillary services that will persuade them to spend their money while using it. For example, issues such as car parking prices, the introduction of an Airport Development Fee and opening hours could all be market tested using this approach to ensure informed decisions are made before their introduction.

12.14. HIAL, supported by Transport Scotland, VisitScotland and Dundee City Council as required, should commit to attending key networking conferences providing opportunities to pitch to airlines (e.g. Routes Europe and French Connect), in addition to seeking bilateral meetings with key carriers where appropriate and regular ongoing meetings with existing airline customers. Distilling the feedback from these meetings is the key to refining the offer to airlines. They will also be impressed by a 'Team Dundee' approach in which all the key partners are not just said to be, but seen to be involved in helping to deliver the success of their route. For example, if an airline shows any sign of interest, they should be invited to see the airport, key businesses, the City, and its environs (e.g. the Fife Coast, golf courses, the City's development plans, Perth etc.) and hosted as well as any other major potential investor would be.

12.15. This kind of sustained campaign and the supporting financial package needed to attract carriers will not come cheap. Realistically, a minimum budget of £250,000 should be set-aside in each of the two years after the Short Term Initiative and that could double if new carriers are actually attracted to begin routes. This may seem like a substantial sum, but in the context of an airport potentially losing +£3 million a year, and the need for its stakeholders to develop a measure of confidence/certainty about is long-term future or more optimistically the case for future investment, a pragmatic view may need to be taken about the significance of these figures in an industry such as aviation. For example, is raising £75,000 a year from car parking

charges worthwhile, if all they do is serve to encourage passengers to choose to travel to Edinburgh to access their flight?

Property Assets

12.16. Another priority should be to ensure all the airport's existing property assets are being let, even if only for short term tenancies. The Ex Scottish Water building has been vacant for a protracted period as HIAL have searched for a long-term high quality tenant. This is a laudable aim, and it is understood there has been genuine interest, but as suggested earlier if someone will take it now, it may be better to offer it on a temporary license to them while that marketing effort, for example to the offshore renewables is exhausted. The key is to make sure the building could be re-let at relatively short notice if a long-term blue chip tenant able to afford full market value or generate substantive wider economic benefits were to be found.

12.17. In parallel, a plan for rationalising and optimising the development of the estate including, where appropriate, acquiring developable land adjacent to, but outside, the current airport boundary ought to be drawn-up so that its full revenue potential and the costs of delivering it, in a series of phases if necessary, is clearly understood. We found no evidence of such an asset strategy or a coherent plan to market any opportunities that might be thus identified. This means that key relationships (e.g. with Tayside Aviation and Loganair Maintenance) cannot be advanced constructively, based on a shared vision of how the airport might best be developed in the medium term (say 5 years). Given the limited resources available within HIAL to dedicate to this task the current approach is of necessity reactive and incremental.

12.18. We suspect this means the scope to improve car-parking facilities (i.e. where is the best place for short and long term expansion and what are the costs of doing so) and optimise both direct and indirect revenues (e.g. by developing a good understanding of relevant price elasticities) is not as well understood as it might be. Similarly, we anticipate that, if explored thoroughly, opportunities to develop renewables commercially on site and improve retail income could be found, even if the sums involved are not material in the context of the airport's current operational losses.

Commercial Focus

12.19. The focus of the on-site airport management is overwhelmingly on safety, security and operational integrity. These are important, and the focus on them means that the airport has been brought up to HIAL Group standards (at an enhanced cost compared to under Dundee City Council's ownership), but with the risk of non-compliance with CAP168 and other regulations substantially reduced. There is no question in our mind that the airport is run relatively cost effectively – there is evidence of multi-tasking for airside functions, clever use of administration staff to provide check-in in response to the 2-3 periods of the day when there is demand for it and of efforts to minimise the RFFS rosters consistent with the airport's traffic profile. However, there was less evidence of commercial initiative and action

orientated forward planning that might help to address the airport's fundamental problem, a lack of revenue income.

12.20. For example:

- Has the concept of an Airport Development Fee been examined, and if not why not? Several peer airports (Newquay, Norwich, Blackpool etc), have introduced such a charge and the impact on passenger numbers has depended on the price sensitivity of the market, airline co-operation, the level the fee has been set at, how it is collected and what it is used for;
- Has the potential for advertising hoardings facing onto the A85 been considered?
- What about naming rights (within the limits of CAA rules) for a sponsor?
- Could part of the forecourt area be used for drive-in car washing/valeting operation, which could also be offered to passengers and generate ancillary revenues? and
- Similarly a shared taxi service.

12.21. The airport ought to be exploring these and all other such options in an attempt to maximise commercial revenues.

12.22. Based on the forgoing, we would recommend the preparation of a strategic 5-year development plan, which might also seek to address issues such as:

- What is needed to keep Loganair at Dundee, or even better increase their presence building on their existing facilities and ties to Tayside Aviation?
- Is there the scope to develop an Academy proposition, perhaps in conjunction with Perth College?
- How could additional hangar facilities be developed and where?
- How can Tayside Aviation's current success be supported long term and how can the Airport most appropriately benefit from it?
- What is the scope for marketing to Business Aviation users and how can the Airport ensure leakage to Leuchars of this valuable traffic is minimised?
- How far can the airport's dependence on aeronautical revenues associated with commercial passengers be reduced?
- What are the priority capital projects needed to meet some or all of the forgoing or respond to airline interest emerging (e.g. incremental apron for commercial and business aircraft) and do they fall within PDR's or should planning approvals be sought in advance?
- What would be needed if several new routes were to start and how long and at what cost would it take to deliver? and
- How could the additional traffic be managed without any rises in operating costs up to a 150,000-passenger threshold, and ideally beyond.

Concluding Remarks

12.23. Although the initial brief for the study included provision to look at long term options, based on our investigations we believe Transport Scotland are right to ask us to focus in this report on identifying, appraising and recommending short and medium term initiatives for the development of Dundee Airport, as these need to be actioned quickly and successfully if it is to continue to have a long term future as a passenger airport.

12.24. In doing so we believe our analysis points to the following initial, but by no means final, generic conclusions:

- Retaining a passenger airport at Dundee could be a better option than closing it altogether as long as there are commercial services using it, it is affordable and represents value for money in terms of economic benefits retained or secured;
- The costs of mothballing commercial operations should be examined so that if these services are lost the comparative costs of temporary closure or maintaining a fully functioning facility are understood;
- The airport is well placed in the catchment area, has existing passenger facilities that can be expanded at more modest cost than is likely to be possible at Perth to achieve the same service standards and is capable of generating material economic benefits;
- It would, therefore, be prudent to delay closing the airport to commercial services until the extent of the market for air services from Dundee is more definitively understood and all avenues to attract carriers have been exhausted;
- Further work should be done on exploring options D1 and D2 alongside the “Do Minimum” baseline to allow the next stage of the STAG assessment to be undertaken if required;
- In parallel, we consider it would be pragmatic for alternative uses for the site to be evaluated so that in the event that the airport does need to close, the value and benefits it might generate in non-airport use are also clearly understood.

12.25. This is a big agenda but as anyone in the industry will recognise, closing down an airport and losing a runway is a significant issue affecting connectivity, infrastructure capability and potentially requiring significant cost. It is therefore better to explore all the alternative avenues before any such decision is reached. We hope this report has contributed substantially to that objective. We believe there could be a potential future for the airport, but there is significant work to be done, by a number of key stakeholders, to maximise the opportunity for this outcome to be realised.

Notes

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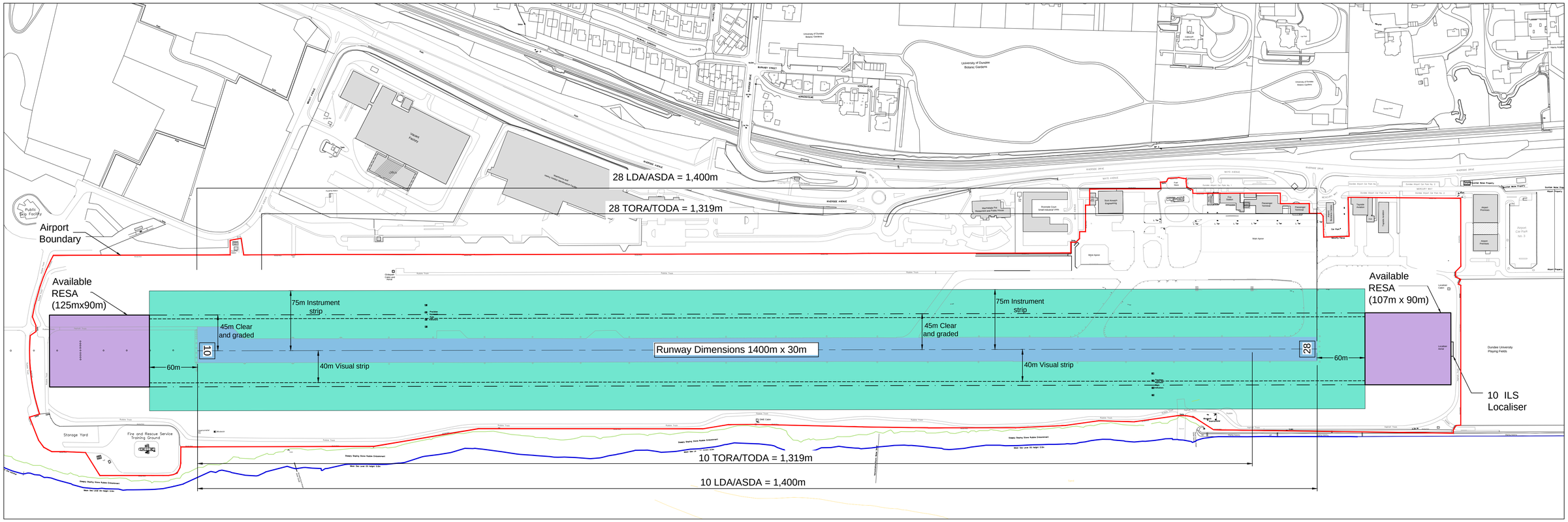


Declared Distances (m)

Runway	TORA	TODA	LDA	ASDA
10	1319	1319	1400	1400
28	1319	1319	1400	1400

Runway Code 2C

Runway 10 - CAT 1 Precision approach
28 - Visual approach

Key

45m Clear and Graded -
40m Visual Strip -
Runway Centreline -
Airport Boundary -
Runway -
Runway Strip -
Available RESA -

Appendix A

Rev	Description	By	Ckd	Date

RPS

Sherwood House,
Sherwood Avenue, Newark, Nottinghamshire, NG24 1QQ
T:+44 (0)1636 605 700 E: rpsnewark@rpsgroup.com F:+44 (0)1636 610 696

Client

Project Dundee Airport Scoping Study

Title Existing Runway Characteristics

Status	Scale	Date Created
Preliminary	1:2500 @A1	29.01.2013
Project Leader	**Drawn By**	**Checked by**
GDD	JHB	DMB

Drawing Number NK017413_100

Rev -

rpsgroup.com

E175 Range from Dundee with 88 seats

EMBRAER Commercial Jets

- ***Dry Rwy / Takeoff at ISA- EASA Certification basis with AltCG.***
- ***Airway allowance = GCD+5.0% , LRC, 85% Annual Probability winds, ISA+0 En-route.***
- ***EU - Ops 1 Reserves with 100nm generic alternate airport, Nominal Fuel Burn+FBP#1.***
- ***Average Baseline model OEW, Pax+Baggage weight = 97 kg, Taxi In/Out = 15 min.***

E-175LR-E5A1 ***with 100% PLF***

E-175LR-E5A1 ***with 80% PLF***

PRELIMINARY ESTIMATES ONLY *(Aircraft Payload-Range Performance may vary with different aircraft configurations)

MP 2

RIVERSIDE DRIVE

MAYO AVENUE

JET A1
FUEL FARM

STAFF CAR PARK

PUBLIC SHORT
STAY CAR PARK

Fire Stn.

Terminal

STAFF
CAR
PARK

Scot Airways

Riverside Court

L Twr

L Twr

L Twr

L Twr

SECURITY
CABIN

L Twr

L Twr

L Twr

L Twr

GA
STAND

Main
Apron

WEST
APRON

EXISTING STAND MARKINGS

PROPOSED NEW STAND MARKINGS

0 5 10
Metres

Appendix C

REV	DATE	AMENDMENT
-	15-06-12	ORIGINAL

HEAD OFFICE
INVERNESS AIRPORT
INVERNESS
IV2 7JB

01667 462445

SITE ADDRESS

DUNDEE AIRPORT LTD
DUNDEE AIRPORT
RIVERSIDE
DUNDEE
DD2 1UH

PROJECT TITLE

STAND NUMBERING

DRAWING TITLE

PROPOSED LAYOUT
WITH PAINT MARKINGS

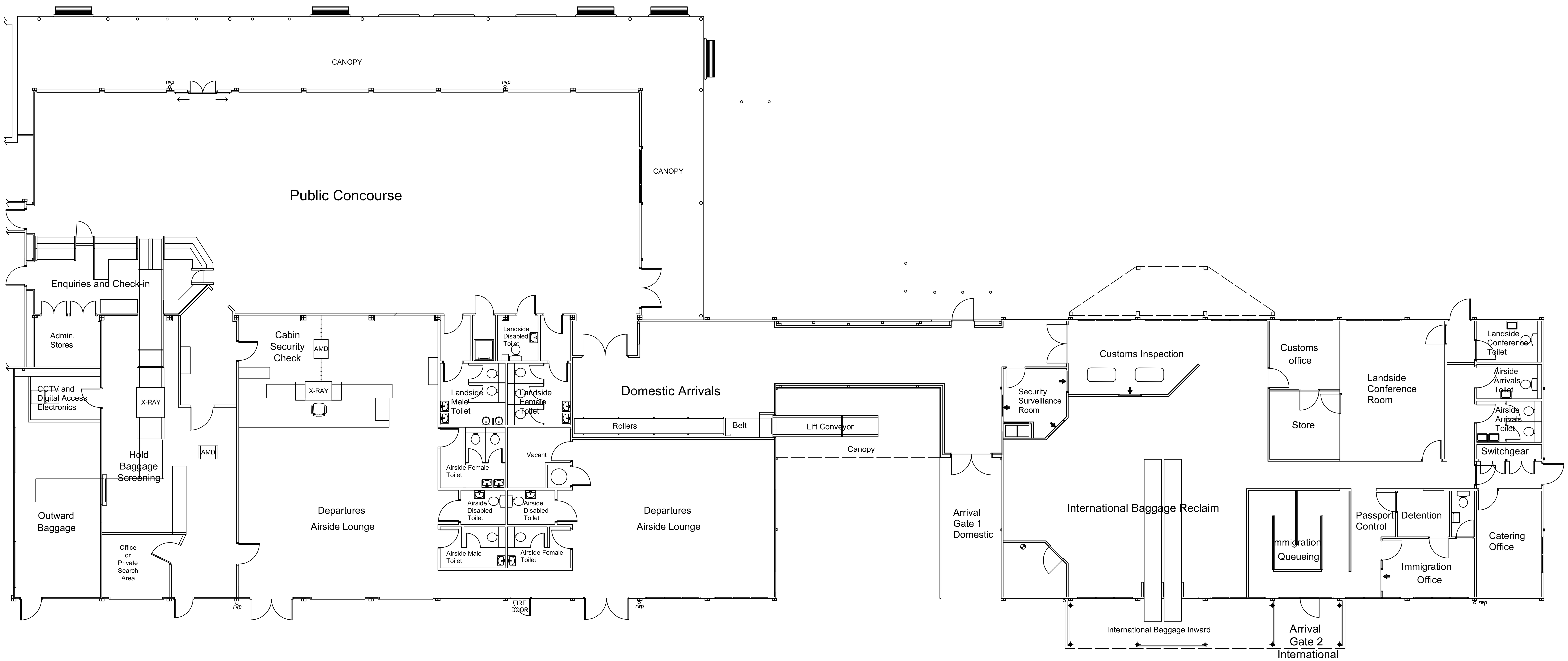
OFFICE OF ORIGIN	COMPILED BY
HIAL HEAD OFFICE	SUE SAMMONS

SCALE	SIZE	APPROVED BY
1-500	A1	

THIS IS A CAD DRAWING - ANY CHANGES MUST BE NOTED TO THE CAD ENGINEER.
DO NOT SCALE FROM THIS DRAWING. CHANGES PROHIBITED.

DRAWING NUMBER

HIAL / DUN / STAND / 1



Appendix D

REV	DATE	AMENDMENT
C	15-11-11	TERMINAL FRONT AMENDED IAW HIAL-DUN-SECCON-1 AS BUILT. NOV 2011.DWG.
B	14-11-11	BAGGAGE SCREENING AREAS UPDATED IAW HIAL-DUN-HBS-2 REV A AS BUILT. TERMINAL BUILDING. HOLD BAGGAGE SCREENING. RE-ARRANGEMENTS DETAIL.DWG
A	29-10-10	LOBBY DOORS SOUTH OF AIRSIDE TOILETS REMOVED IAW APM INFORMATION

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INVERNESS
IV2 7JB

01667 462445

SITE ADDRESS

DUNDEE AIRPORT LTD
DUNDEE AIRPORT
RIVERSIDE
DUNDEE
DD2 1UH

PROJECT TITLE: TERMINAL BUILDING

DRAWING TITLE: PLAN

OFFICE OF ORIGIN: HIAL HEAD OFFICE

COMPILED: SUE SAMMONS
DATE: 17 JANUARY 2008

SCALE: 1-100

SIZE: A1

APPROVED BY:

DATE:

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CAD REF \ ACLTWIN \ LIBRARY \ DUNDEE \ TERMINAL BUILDING
DRAWING NUMBER: HIAL / DUN / TB / 1

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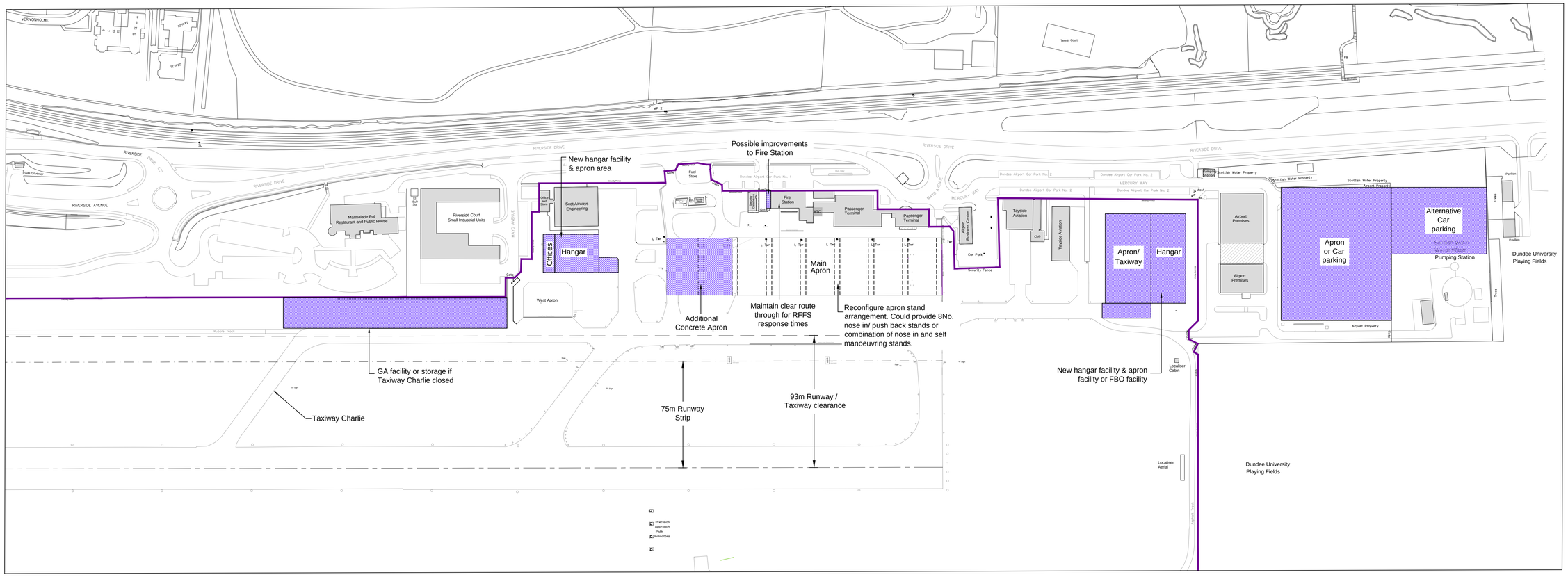

Appendix E

Rev	Description	By	Ckd	Date

RPS

Sherwood House,
Sherwood Avenue, Newark, Nottinghamshire, NG24 1QQ
T:+44 (0)1636 605 700 E: rpsnewark@rpsgroup.com F:+44 (0)1636 610 696

Client TRANSPORT SCOTLAND

Project Dundee Airport Scoping Study

Title Potential Enhancements to a 150,000 Capacity Airport

Status	Scale	Date Created
Preliminary	1:1500 @A1	21.02.13
Project Leader	**Drawn By**	**Checked by**
GDD	JHB	DMB

Drawing Number NK017413_102

Rev -

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Transport Scotland
Victoria Quay
Edinburgh EH6 6QQ

0141 272 7100
info@transportscotland.gsi.gov.uk
www.transportscotland.gov.uk

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The Scottish Government
Riaghaltas na h-Alba

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