

# Appendix A Mainland Airfield – the Comparative Merits of Tingwall and Sumburgh

## A.1 Background

- A.1.1 The Shetland inter-island air service currently operates from the hub airfield of Tingwall, with the exception of one summer Saturday flight which operates to and from Sumburgh. Tingwall has, over many years, proven to be a highly effective airfield, offering relatively quick access to Lerwick and a largely dedicated inter-island air service hub (i.e. no competing traffic).
- A.1.2 However, Tingwall Airport imminently requires some significant investment in both the runway and other fixed assets. Initially a new taller Airport Watch Tower is required to satisfy mandated air traffic control requirements and provide better visibility for the controller. The runway has also been assessed as needing resurfacing. Other issues such as an upgrade of the passenger and office facilities and an upgrade of airfield lighting are also likely to be required in the medium-term.
- A.1.3 Given the above and the facilities available at Sumburgh, it is therefore appropriate in the context of this study to re-assess the comparative merits of Tingwall and Sumburgh as the base for the inter-island air service.

## A.2 Tingwall – Pros and Cons

- A.2.1 Tingwall Airport currently provides the base and hub of the current inter-island Public Service Obligation (PSO) air service. The airfield is home to the air operator's Shetland staff with customer facing, pilots and engineering staff being based there. The Tingwall hangar houses the two BN2 Islander aircraft and other third party aircraft, and the apron is easily accessible for passengers and staff from the airport buildings.
- A.2.2 Shetland Islands Council (SIC) manages the airport and provides flight information and Rescue & Fire Fighting Services (RFFS). The Council also manages both the maintenance and licensing of the airfield.
- A.2.3 The current tendered air service offers a timetable that serves Fair Isle, Foula, Out Skerries (currently suspended) and Papa Stour, and a dial-a-ride delivers bus services links between the airfield and nearby Lerwick (the principal destination for those arriving from the isles).
- A.2.4 It should be noted that SIITS is considering options for a new air service from Unst (Fetlar has been ruled out) and options in relation to the withdrawal of the Papa Stour and Skerries services (in tandem with enhanced ferry services). Enhanced service frequencies for Fair Isle and Foula are also under consideration. These options may also have a bearing on the relative role of Tingwall or using an alternative home (Sumburgh Airport) for the PSO network in the life of the islands.
- A.2.5 Tingwall Airport also fulfils other functions such as receiving aero medical and coastguard aircraft, whilst also acting as host to commercial and private aircraft.
- A.2.6 The SIC Transport Planning Service and wider Council considered the issue (in 2012) of the most appropriate air service in quite some depth prior to the last PSO tender specifications being agreed, and the arguments and issues used at that time can usefully be rehearsed and reviewed here. However, a more thorough examination of the relative costs of each base is appropriate especially as significant capital costs are now required at Tingwall to keep the airfield operational.
- A.2.7 The 2012 review of the base for inter-island air services was considered from four perspectives:

- The timescale that would be required to move the base for inter-island air services.
- The adequacy of the services that can be provided to the islands served in terms of meeting economic, social and health needs.
- The overall cost to the Council.
- Comparison of operational costs between Tingwall and Sumburgh.
  - Impacts on the cost of the inter-island air services contract.
  - Cost of providing public transport connections to / from either location.
  - Other risks / constraints

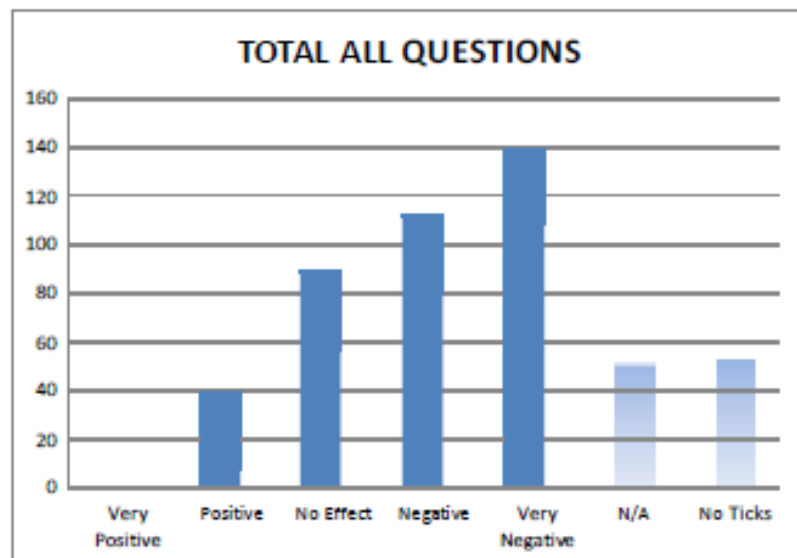
**Timescale**

A.2.8 It was concluded that it would take 16 to 18 months before operations could be delivered from Sumburgh Airport. It was also considered likely to take a number of months to resolve the detail of the commercial and legal issues to be agreed between Highlands and Islands Airports Limited (HIAL) and Shetland Islands Council. There would be a further period for preparation of the facilities at Sumburgh. (To put this in context, it took 10 months to refurbish the hangar at Tingwall.) This could only commence once a legal agreement had been reached between Shetland Islands Council and HIAL.

**Adequacy of Service to the Islands**

A.2.9 Consultation with the island communities of Fair Isle, Foula, Papa Stour and Out Skerries concluded that the predominant view of the communities is that Tingwall should remain the base for inter-island air services. This view was robustly confirmed as part of the SIITS public engagement programme in the respective islands.

A.2.10 The 2012 review also consulted residents and community groups, with Fair Isle and Foula residents in particular providing a great deal of feedback on this matter. The consultation involved a wide range of questions, but the consolidated summary of results was resoundingly negative to the prospect of closing Tingwall, as is illustrated in Figure1 below.



**Figure 1: Consolidated Results of 2012 Review**

A.2.11 The most significant issue arising from the consultation for all the islands is that operating out of Sumburgh Airport would place significant constraints on the ability of the island

communities to access essential services and conduct every day activities. Even if it proves cheaper to provide operations out of Sumburgh, if the services are judged to be inadequate then a move to Sumburgh would not be supported by islanders.

- A.2.12 The main constraint is the additional travelling time from Sumburgh to Lerwick compared with Tingwall. If relying on public transport this could, in some cases, lead to less than an hour of useful time in Lerwick, which is clearly insufficient in the context of the overall cost and length of the journey.
- A.2.13 Furthermore, it would constrain the ability of services and contractors to access the various islands resulting in increased costs to communities or even a reduction in services and trades being provided to the islands concerned. Many of the services accessing the islands are Council provided services and therefore efficiency of provision would decrease and cost would increase.
- A.2.14 Another point to consider is the relationship between the air service and the ferry service to Foula. It is common that when air services or ferry services are disrupted then suppliers will put freight and supplies to either the ferry or the plane depending on requirements. Many of the suppliers (e.g. shops and veterinary practices) are based in Lerwick and the west of Shetland and therefore are unlikely to be able to provide the same flexibility at Sumburgh as they can provide to Tingwall / Walls. This is not an issue in relation to Fair Isle.
- A.2.15 On the basis of these issues, it was concluded that the base for inter-island air services should remain at Tingwall, recognising that it best meets the economic, social and health needs of the islands served.

### Overall Cost to the Council

- A.2.16 The overall cost to the Council of providing the inter-island air service was considered in 2012 under four headings:
- the cost of airport operations (be it Tingwall or Sumburgh);
  - impacts on the cost of the Inter-Island Air Services contract;
  - ongoing maintenance costs at Tingwall and/ or decommissioning; and
  - public transport costs.
- A.2.17 In an attempt to make a like-for-like comparison of the costs of providing inter-island air services from Sumburgh, the following estimates were produced.

	Financial Year 2013/14				Financial Year 2014/15				Financial Year 2015/16			
	Tingwall		Sumburgh		Tingwall		Sumburgh		Tingwall		Sumburgh	
	Revenue Costs	Capital Costs	Revenue costs	Capital Costs	Revenue Costs	Capital Costs	Revenue costs	Capital Costs	Revenue Costs	Capital Costs	Revenue costs	Capital Costs
Revenue cost Tingwall	180838				163738				163378			
Capital Costs		40000		100000		15000				15000		
Landing Charges	0		19000		0		19000		0		19000	
Additional Fuel Costs	0		11440		0		11440		0		11440	
Rates and Utilities	Inclusive		25000		Inclusive		25000		Inclusive		25000	
Hangar Leasing Costs	N/A		40000		N/A		63750		N/A		85000	
Energy Costs	Inclusive		6500		Inclusive		6500		Inclusive		6500	
Maintenance	Inclusive		8500		Inclusive		8500		Inclusive		8500	
Public Transport	8000		80000		8000		80000		8000		80000	
Totals	188838	40000	190440	100000	171738	15000	214190	0	171378	15000	235440	0
Grand Total	£228,838		£290,440		£186,738		£214,190		£186,378		£235,440	

### Figure 2: Like-for-Like Costs – Tingwall v Sumburgh

A.2.18 The anticipated financial benefit to SIC did not materialise at all in using Sumburgh and closing Tingwall. In fact Sumburgh proved more expensive to SIC than Tingwall in each of the three years forecast.

A.2.19 Several reservations can be raised about these comparative financial figures.

- The current capital costs of necessary upgrades to Tingwall were not included in this period of comparison (runway upgrade and watchtower installation are now pressing, although they appear not to have been included in the calculations in 2012).
- Negotiations with HIAL and the Sumburgh fuel supplier were not undertaken in any depth, and price concessions may have been forthcoming if there was a real prospect of a move.
- The additional fuel costs were compared on a per litre basis and this runs counter to the fact that Tingwall is almost double the airborne distance from Fair Isle – the most frequently serviced route – than Sumburgh. Foula – the second most frequent route – is almost equidistant from Tingwall and Sumburgh. Air distances and fuel consumption to Papa Stour and Skerries would of course increase. These costs could have been examined in more detail, and it is likely that the difference would not have been so much in Tingwall's favour.
- The calculations were based upon SIC budgets, and not total public funds (HIAL's subsidy for Sumburgh for instance is delivered via Transport Scotland).

A.2.20 This review revisits some of these cost issues, especially in light of the prospect of significant capital outlay for Tingwall.

### Other Risks and Constraints

A.2.21 Over the previous two years (as of 2012) the Council had invested over £600,000 in improving facilities at Tingwall Airport, which was aimed at bringing the airport up to modern standards of airport operations, meeting health & safety standards, reducing operational costs at the airport and reducing the costs of the next air services contract through improved facilities for maintenance, fuel supply, and operational conditions at the airport. If the Council now chose to move operations from Tingwall to Sumburgh, this investment would in effect be non-recoverable.

A.2.22 The loss of strategic control by SIC was cited in 2012 as a real concern as although HIAL is government owned, its agenda and priorities could stray from SIC's more particular agenda and priorities (given the need to trade-off the needs of different users). Increased cost and a reduced ability to speedily address any operational concerns seemed to generate particular nervousness.

A.2.23 Several key stakeholder respondents also raised concerns about losing the current service responsiveness, as the BN2 Islander and its passengers would have to join queues of other traffic and priorities at Sumburgh both on the airfield and in the terminal, for instance when fog cleared. A security free gate (like at Kirkwall) would however no doubt be possible.

A.2.24 There are other users of Tingwall Airport who would also be inconvenienced by its closure.

A.2.25 These include:

- Scottish Ambulance Service – contractor Gamma Aviation using King Air BE200 and Eurocopter EC145s.
- HMCG – contractor Bristows using S92s.

- General Lighthouse Authority (formerly NLHB) – contractor PDG using Eurocopter EC135s.
- Hydro – contractor PDG using various aircraft such as Squirrel and EC135s.
- Private – various General Aviation visitors.

A.2.26 It should be noted that these other users such as SAS and NHS Shetland should be consulted about any move that might envisage closing Tingwall. This additional traffic represents about 18% of all landings at Tingwall across the year, with air ambulance representing about 4 visits each month.

**Table 1: Landings at Tingwall**

Landings at Tingwall	2014/15	2015/16
Inter-Island Air Service	649	751
Air Ambulance	40	56
Other Landings	105	98
<b>Total</b>	<b>794</b>	<b>905</b>

A.2.27 It was also noted that the additional distances to Sumburgh via a via Tingwall might place extra time and pressure on the emergency health services as a result of any closure. This is an important issue given the demographics of the islands in question.

## Connecting Traffic

A.2.28 No figures for connecting traffic from the Scottish mainland with the outer islands are available because the change in air transport suppliers and the itinerary interchanges make it very difficult to track.

A.2.29 However, it was notable that no stakeholders raised this as a burning concern in this study. With weather related delays running at up to 34%, on some estimates, few onward connecting passengers would rely on their inter-island flight to catch an expensive onward connection to the mainland.

A.2.30 Furthermore, consultations at Kirkwall where the Orkney inter island flights and onward travel flights are co-located, and the numbers using the inter-island service are much greater, the numbers catching immediate onward flights were estimated by booking staff to be only half a dozen each week.

A.2.31 Initially at least, it can be assumed that the interlining effect of co-located air services would be minimal.

## Diversions Airfields

A.2.32 The loss of Tingwall as a diversionary airfield would reduce the options for BN2 Islander pilots in the face of bad weather. The only other licensed airstrips on Shetland are Sumburgh, Scatsta or Fair Isle. Scatsta is some 55 miles from Sumburgh. Usually when Sumburgh is closed, Fair Isle is also closed, especially with fog. Apart from that, diversions would be looking at North Ronaldsay or even Kirkwall.

A.2.33 This loss of one diversionary airfield option in the Shetland system could in certain circumstances add an extra level of caution to flight planning and might result in additional cancellations. Procedures would be adjusted to take this reduction in airfields into account.

## Capital Costs

A.2.34 The following figures are estimates from SIC Infrastructure Services and have been tabulated as follows.

**Table 2: Required Capital Expenditure at Tingwall**

Item	Capital Cost	Notes
Runway	£300,000	Required immediately
Watch Tower	£150,000	Required immediately
Terminal Adjustments / Improvements	£100,000	Upgrade of passenger facilities & offices at some point
Tingwall runway lighting renewal	£511,000	Less expensive options may well be available
<b>Total</b>	<b>£1,061,000</b>	

A.2.35 The very expensive runway lighting upgrade is possibly a significant overestimate as there may be cheaper fixes (light protectors) or battery operated LEDs (which have been referred to elsewhere in the main report).

## Operational Costs

A.2.36 Mention has already been made of upcoming capital costs at Tingwall. An appreciation of running costs is also required to help complete the picture. Examining the operational costs Tingwall, we have come up with the following estimates.

A.2.37 SIC staff costs are broken down between full-time staff at Tingwall (3 full time) part-time staff (4) borrowed from other departments and management time. A total figure of £203,000 for 2015/16 was produced. It is assumed that Council transport staff managing the inter-island PSO are excluded from this, as their contribution to managing the PSO contract will be required under both scenarios.

**Table 3: Tingwall Staff Costs**

Item	Cost
Employee Costs	£163,919
Recharges to other departments (assumed would still be charged after any move of the mainland airfield)	£39,935
<b>Total Staff Costs</b>	<b>£203,854</b>

A.2.38 Depreciation was estimated at £21,087 for 2015/16 and this should properly be added to the annual operational cost. Income from third party users of £66,806 was recorded for that year.

A.2.39 A table was produced to capture all the costs to SIC for each of last three years, and this includes a comprehensive range of other costs such as fuel purchases, travel costs, subscriptions, licences, insurances, rates etc as well as income.

Table 4: Tingwall – Costs for Three Financial Years

	2013/14		2014/15		2015/16	
	Revenue	Capital	Revenue	Capital	Revenue	Capital
Operating Costs	£477,388		£363,014		£418,687	
Support Ledger Costs	£4,517		£63,682		£39,935	
Depreciation	£14,621		£18,587		£21,087	
Income	-£69,227		-£45,478		-£66,806	
Capital Costs		£28,044		£0		£0
<b>Total</b>	<b>£427,299</b>	<b>£28,044</b>	<b>£399,805</b>	<b>£0</b>	<b>£412,902</b>	<b>£0</b>

A.2.40 A final high level tally is shown in the table below:

Table 5: Total Tingwall Costs 2015/16

Item	Cost
Operating Costs	£412,902
Land Transport Costs	£9,100
Fuel cost (already included in subsidy)	£0
<b>Total</b>	<b>£422,002</b>

A.2.41 There are other issues that are harder to quantify. Directflight make some money selling fuel to third party visitors and in a Tingwall closure option they would lose this income, and this may be reflected in their future subsidy requests. Directflight currently employ one engineer in Shetland with the ambition to recruit more. Directflight also currently employ two office staff who accomplish handling and the call centre with help from the engineer and even pilots. It should be noted that all these staff reside close to Tingwall and thus are distant from Sumburgh, and any move would cause disruption to many of these staff. Indeed, some staff may choose to not make the move with the longer commute costs and times. As another example, the CAA require every airport to have an annual survey by a suitably qualified contractor. The current contractor (SLC) surveys all Shetland's airports at the same time to reduce costs. If Tingwall no longer needs a survey, the costs to the remaining airports will increase.

## Summary

A.2.42 The table below provides a qualitative summary of the benefits of using Tingwall as the base for the inter-island air service. The scale runs from ✓✓✓, which represents a major positive to ✗✗✗, which represents a major negative.

Table 6: Tingwall – Qualitative Appraisal

Item	Qualitative Scoring	Notes
<b>Social / Consumer</b>		
Convenience to Lerwick	✓✓✓	Improves attractiveness of service
Length of Day Visit	✓✓✓	Improves utility of service
Onward Connectivity	✓✓	Closer to island bus, road and ferry nexus
Onward Air Connectivity	✗	Far from Sumburgh
Key employment location	✓	More dispersed than all centred on Sumburgh
Aeromedical role	✓	Vital-ness to be assessed
<b>Operational</b>		
Agile and responsive	✓✓✓	Simple service that could complicate at Sumburgh
Strategic Control	✓✓	SIC has direct control
<b>Capital Costs</b>		
Significant near term	✗✗✗	Just to keep airfield open rather than improve
Substantial medium term	✗✗	Pax. experience and office Improvements
<b>Running Costs</b>		
Standalone operation	Neutral	Little opportunity for economies of scale or for multi-tasking
More expensive	✗	To SIC than Sumburgh / HIAL option
Cost Risk	✗	Future technology and other upgrades (eg GNSS) fall to SIC
Regulatory / Technology Risk	✗	Further changes create new obligations for SIC
<b>Possible Ameliorations</b>	✗	<i>Few opportunities to defray the negatives except perhaps runway lighting</i>

### A.3 Sumburgh – Pros and Cons

- A.3.1 According to AA Route Planner, the distance is 25.4 miles and takes 37 minutes between Sumburgh and Lerwick, whilst the road journey is 6.7 miles and takes 13 minutes between Lerwick and Tingwall. A time penalty of 24 minutes is therefore imposed on the Sumburgh traveller accessing Lerwick, amounting to nearly a one hour shorter effective day in Lerwick.
- A.3.2 It should also be remembered that Tingwall lies some 13 minutes travel time from Lerwick town centre. Curtailing the day by a further one hour will reduce the effectiveness of the visit quite significantly, and on some days in winter almost make a day return unviable.



Table 7: Air Time on Island / Mainland by Season

	Time on Island			Time on Mainland		
	Summer	Early & Late Winter	Deep Winter	Summer	Early & Late Winter	Deep Winter
<b>Fair Isle</b>						
Monday	07:10	06:20	05:25	06:25	04:45	04:15
Tuesday	Only one rotation					
Wednesday	05:10	04:55	04:25	04:00	03:45	03:15
Thursday	04:45	03:40	03:10	03:35	02:30	02:00
Friday	05:00	04:50	04:30	05:00	03:40	03:20
<b>Foula</b>						
Monday	Only one rotation					
Tuesday	06:40	05:10	04:55	05:50	04:20	04:05
Wednesday	07:30	2 back-to-back flights		06:40	2 back-to-back flights	
Thursday	06:15	04:50	04:30	05:25	04:00	03:40
Friday	Only one rotation					
<b>Skerries</b>						
Monday	1 rotate	None	None	1 rotate	None	None
Wednesday	1 rotate	None	None	1 rotate	None	None
Thursday	06:25	06:05	05:35	06:10	05:05	04:35
<b>Papa Stour</b>						
Tuesday	06:35	05:10	04:55	05:55	04:30	04:15

- A.3.3 A calculation was made for this study by SIC using the current cost of the dial-a-ride service and a similar service between Sumburgh and Lerwick and the comparative figures were £9,100 and £80,000 imposing an additional £70,900 land transport bill on the service (a budget which would also constantly be under pressure in the current funding environment).
- A.3.4 However, the Scottish Government already supports one public funded airport at Sumburgh and Scotland PLC (as distinct from SIC) could ostensibly save money by concentrating the island's civilian air activities at this one base. Sumburgh has a range of sunk costs in terms of runways, facilities, staff and hangars, and once again could avoid the future upgrade and maintenance costs involved with the continued use of Tingwall.
- A.3.5 There are no onward connections from Tingwall as all external Flybe / Loganair and Eastern Airways scheduled flights operate from Sumburgh. The split airport arrangements presently preclude arrangements being put in place to facilitate connections from the outer isles to external air services, e.g. for NHS patients travelling to Aberdeen.
- A.3.6 The lack of connections could therefore be constraining the economic development of the outer isles compared with say, the Orkney Islands which have an integrated network through use of a single hub airport. This has an impact for both incoming tourism and for quality of island life for residents by limiting their access to Scottish mainland amenities and services, mail and newspaper deliveries.

- A.3.7 It is possible that the difficulties in achieving connecting flights may also detract from the tourism potential for incoming visitors to points such as Fair Isle – in the absence of easy connections, customers may choose to go elsewhere to points which are more easily and readily accessible.
- A.3.8 The current structure of the schedule makes it difficult, if not often impossible, for the outer islands to receive same-day Royal Mail and newspaper deliveries. These organisations could potentially adapt their sorting practices in Aberdeen to better connect with onward flights from Sumburgh to the outer isles. However, this benefit might only be deliverable if services to the island destinations were daily, as it would be difficult for organisations such as the Royal Mail, John Menzies and the *Press & Journal* (who sometimes act independently of Menzies combined newspaper delivery) to change their procedures dependent upon the day of the week. Of course newspapers now play a much weaker role in daily life than heretofore.
- A.3.9 A speedy road link with Lerwick would be particularly important to minimise the drawbacks of Sumburgh's relative remoteness from the town and a cost estimate has been based upon providing a dial-a-ride service on the basis of each arrival and departure being individually accommodated.
- A.3.10 If Papa Stour and Skerries were dropped from the air schedule this would affect the balance of attractions between the two hub options. If Unst was re-introduced into the air system this would also affect calculations. In general terms, a Sumburgh base would be wholly negative for Papa Stour and Skerries as they would have longer flight times and mainland journey times, and with the short ferry time from Papa Stour to mainland, it would make the benefit of an air service almost negligible. Unst is more complicated as the relatively good ferry and road link makes an air service harder to justify to Tingwall, but a link to Sumburgh may well provide attractive options for onward connections (assuming despatch reliability rates are improved).

## Capital Costs

- A.3.11 If a move was undertaken, it seems almost inevitable that a new hangar would need to be constructed to house the aircraft as all existing hangarage at Sumburgh is currently fully occupied. The cost of this is unclear but no matter how modest a hangar was built, it is likely to cost over £500,000 and if connection to services, car parking and access are included in the estimate it could exceed £1m.
- A.3.12 For comparison, a new maintenance hangar for the Public Service Obligation inter-island air services operated by Loganair was commissioned at Kirkwall Airport in October 2006. The hangar was developed in partnership by Orkney Islands Council and HIAL. The facility provided a new operating base for Loganair's Islander aircraft which serve the Outer North Isles. The building, which replaced an out-of-date hangar at the airport, was constructed with £750,000 of OIC funding and a £300,000 capital contribution from HIAL. The airport also provided the land for the project via a lease to the Council. However, this hangar was built to permit JAR 145 approved engineering (higher level of heating and insulation requirements) and to accommodate larger aircraft such as the Saab 340, so it is likely that a less expensive hangar could be constructed.
- A.3.13 Other high level figures were also obtained for illustrative purposes for a recent Search & Rescue hangar for Bristow at Norwich Airport (details below). This example is bigger and of a higher specification than the Shetland PSO would require, and hence is a top-end example of what is available at a relatively economic price compared to a rigid build (Rubb Building Systems supply permanent tension membrane fabric buildings).
- Steel frame, fabric covered hangar.
  - 35m x 40m with 6m door height.
  - 1304m<sup>2</sup>.

- Approximate cost £485K
- Concrete foundation and pad £145K

A.3.14 It is appreciated that build costs would be significantly more on Shetland than for mainland examples. It should also be noted that this type of membrane hangar succumbed to wind damage at Anglesey Airport recently, and a rugged construction will be required to withstand the much harsher Shetland weather. Rubb Building Systems may well not be suitable.

A.3.15 HIAL highlighted the Bond Nissan Hut type hangar built recently at Inverness Airport for the Air Ambulance helicopter (Bond) as another potentially cost effective approach. Bond hangar in Inverness which is of a Nissan hut design and would be less expensive than the £600k assumed in this report, and might approximate to something suitable for BN2 Islanders and little else. This Helimed hangar was supplied by Miracle Span Ltd (<http://miraclespan.co.uk/>). The footprint is 16m x 16m and the cost in 2011, excluding concrete base, electrical, heating, lighting, fit out etc. was in the region of £40,000 to install.



A.3.16 HIAL assured the study in general terms that utility services (water, sewage, power) would be near to any likely hangar site, so connecting these services should not be excessive. Staff access road and parking provision were not examined in this study, and hence the estimates used are approximate.

A.3.17 If a new hangar was constructed, it would be prudent to future proof it and perhaps provide it with the means of undertaking other aero engineering work in a way similar to the way the Kirkwall hangar was conceived, as it now serves not only BN2 Islanders but also Saabs. There may also be business opportunities for aircraft overnight parking or general aviation

aircraft *ad hoc* parking that could be addressed. However, such enhancements should perhaps be priced as separate to, and above, the core needs of the PSO air service. A separate business case, unlikely to coincide with the time pressures of the PSO decision making, would likely need to be developed. For the purposes of this study, we have selected a mid-range capital figure of £600,000 to cover a basic BN2 hangar with little other capability.

- A.3.18 Although different funding models could be adopted, it was assumed for this exercise that SIC or Shetland Land and Property (SLAP) would fund the establishment of the hangar and that HIAL would charge a ground rent for the hangar site. HIAL might be persuaded to invest in the hangar but they would require a longer term commitment from SIC to do so, and the annual rent would reflect covering this capital cost in a timely manner. Financially and strategically, the two approaches could be compared, but it is very likely that a buildings rent paid to HIAL would be much more onerous for SIC than a ground rent paid to HIAL.
- A.3.19 With regard to AvGas it is likely that the increased usage of fuel would require an investment in a fuel farm (as opposed to bowser supply). Sumburgh currently supplies very small quantities of AVGAS, it is delivered in 45 gallon drums with all the problems (manual handling, etc) that brings. If the BN2 Islanders were to be fuelled at Sumburgh, they would need to install a fuel farm similar to that built at Tingwall c 2008. This would cost about £100,000. The supplier has indicated that for refuelling after every flight, they would need another full-time tanker driver. This has been estimated (as a similar facility to Tingwall) to represent an approximate £100,000 investment. It is unclear how the fuel provider would deal with this – through higher fuel charges or a request for public support to upgrade their facility.

## Operational Costs

- A.3.20 Estimating the operating costs of the PSO service running from Sumburgh were a result of conversations with HIAL Head Office and Sumburgh Airport management.
- A.3.21 It has been assumed that a two track security system can be put in place similar to Kirkwall, where inter-island passengers avoid the rigours of off-island travel / security.
- A.3.22 A side door to the apron was identified in the main terminal and a portion of the Apron adjacent to that door would become the 'home' of the PSO. A simple escorted walk out to the aircraft, similar to present arrangements, was envisaged with no security check required.
- A.3.23 One attraction of the Sumburgh solution is that SIC would pay for both operational services, and future capital (other than the hangar) obligations in their airport charges. SIC would no longer have to concern themselves about future runway or terminal upgrades or migration costs to new technologies. This would all be covered by their user charges. Hence the lumpiness of SIC's aviation budget would subside, after the financing of any new hangar was addressed. SIC could then leave all compliance and infrastructure renewal and upgrade issues to HIAL.
- A.3.24 The new hangar would have a range of operational charges connected with rates, insurance, refuse, power etc. For the purposes of the comparison these were assumed to be the same as the current comparable costs at Tingwall. Collectively these come to an estimated £155,322 per year.
- A.3.25 In discussion with HIAL regarding the best use of check-in desks and handling staff, they immediately saw the potential for staff synergies and recommended using an existing handling agent rather than setting up a parallel organisation with their own separately hired check-in counter. Similarly, with regard to the call centre, HIAL speculated that the manned Visit Shetland desk at the airport could be combined cost effectively with the flight booking function. Finally, it was assumed that a small air service operator's office and separate pilot planning room (similar to the present arrangement) would be provided, although there are many combinations and permutations on how this could be achieved. However, it should be stressed that any 'shared' or sub-contracted options would only be attractive if they offered an improvement in service levels or a reduction in cost, and the current staff roles and complement could be transferred to Sumburgh unchanged, if that was what was specified or

desired. It would be up to the operator, no doubt in consultation with SIC, to identify if any of these approaches offered any benefit. In general, it does seem that opportunities for multi-tasking in call centre, aero engineering, and ground handling exist at Sumburgh, whilst they do not, to the same extent, at Tingwall.

A.3.26 With regard to protecting SIC's strategic control and interests at Sumburgh, a discussion was had about constructing a Memorandum of Understanding and/or service level agreement that could address various issues of concern, including future proofing the service, giving it appropriate priority within airport planning and operational practices and generally ensuring that the service levels did not degrade over time. HIAL was also keen to simplify administration for both parties by charging agreed fixed costs for the service, rather than track every take-off and landing as a chargeable event.

A.3.27 The following high level costing structure was constructed using current HIAL 2016/17 pricing. HIAL offered SIC a 1/3 discount over their standard charges in the exploratory discussions that were had. In annualised summary:

**Table 8: Sumburgh Related Costs**

Item	Cost
Landing charges	£9,011
Pax Charge	£44,986
Aircraft apron parking	£648
Offices rent	£20,000
Hangar Ground Rent	£20,000
Hangar Ops Costs annual estimates from current costs	£155,322
Est. Add. Pax Handling costs	£9,400
Land Transport Costs	£80,000
Est. Additional Fuel Cost	£35,348
Other SIC Dept. Recharges	£39,935
<b>Total</b>	<b>£414,650</b>

A.3.28 Fuel has been dealt with by an estimate for Tingwall, as we do not know what Directflight pay for it. 90,000 litres of AvGas was assumed as required by the service<sup>1</sup> at a discounted price of £1.16 / litre plus 5% duty = £109,620 (ballpark quote by Air BP (via their subsidiary North Air)). Directflight has been presumed to pay only £74,272 (amount declared to SIC in report covering April 15 to March 16) per annum (previous year totalled £69,668 which gives some idea of annual variation possible). The higher fuel cost at Sumburgh would partly be compensated by the likely lower fuel usage, but we have assumed that any increase in total fuel charges would be transferred to the subsidy request that SIC would endure. The differential fuel figure (£35,348) estimated is likely on the high side as we have assumed the same fuel consumption from both airports.

## Strategic Control

A.3.29 Direct control over the operation and destiny of the inter-island air service is valued highly by SIC and there was concern that the service falling under the pricing, operational and strategic control of HIAL might degrade the service's flexibility and responsiveness. In discussions with HIAL on the matter, it was suggested that perhaps a suitable Memorandum of Understanding,

<sup>1</sup> From figures supplied by SIC

Service Level Agreement and/or communication and monitoring regime could be put in place to protect SIC's obligations and interests in this regard. An example of service impact could be the future implementation of car parking charges at Sumburgh, which would be unwelcome to islanders.

A.3.30 Furthermore, HIAL saw merit in various parties sitting together for a workshop, perhaps with the other BN2 Islander sponsoring councils and even operators and see if new collaborative solutions to address the various challenges were possible. Co-ordinated PSO tendering, closer collaboration in airfield management and staff training, reliability improvements through GNSS approved approaches, more multi-tasked staff, better access to specialist expertise, next generation aircraft acquisition were all aired as issues worth considering.

## Sumburgh Summary Chart

A.3.31 The table below provides a qualitative summary of the benefits of using Sumburgh as the base for the inter-island air service. The scale runs from ✓✓✓, which represents a major positive to ✗✗✗, which represents a major negative.

Table 9: Sumburgh – Qualitative Appraisal

Item	Qualitative Scoring	Notes
<b><i>Social / Consumer</i></b>		
Convenience to Lerwick	✗✗	Reduces attractiveness of service
Length of Day Visit	✗✗✗	Reduces utility of service
Onward Connectivity	✗	Further from bus, road and ferry nexus
Onward Air Connectivity	✓✓	Inhibited by BN2 reliability
Key employment location	✓	More dispersed than all centred on Sumburgh
Terminal Facilities	✓	Café, WiFi, seating etc.
Car Parking	✗	Further from check-in
Aeromedical role	✗✗	More remote to hospital / main centre of population
Papa Stour and Out Skerries	✗✗✗	Almost wholly negative prospect
Fair Isle	Neutral	Pros and Cons – more balanced estimation  Tourism helped, total travel time extended but not as much as others
Foula	✗✗	Negative as same air time but increased land time
Unst	Neutral	Mildly positive if onward travel facilitated, but hardly justifiable for Lerwick journeys
<b><i>Operational</i></b>		
Agile and responsive	Neutral	Sumburgh likely to be less responsive
Strategic Control	Neutral	SIC has to protect 'its' operation at Sumburgh
<b><i>Capital Costs</i></b>		
Significant near term	✗✗✗	New hangar

Item	Qualitative Scoring	Notes
Protection Long term	✓✓✓	Under this (and possibly other scenarios) risk passed to HIAL / TS
AVGAS Fuel Farm	xx	Unsure how this expense would be covered/funded
<b>Running Costs</b>		
SIC Costs	Neutral	Little savings if any
Combined Aviation Hub	✓	Opportunities for economies of scale or for multi-tasking
Cost Risk	✓	Protected from future technology and other upgrades (eg GNSS) fall to SIC
Regulatory / Technology Risk	✓✓	Protected
<b>Possible Ameliorations</b>	Neutral	MOU / SLA with HIAL Ring fenced operation in Sumburgh Responsive taxi type service minimising total travel time penalty

## A.4 Key Issues

- A.4.1 A key issue is whether SIC / ZetTrans will do 'whatever it takes' to retain air services to both Skerries and Papa Stour or whether alternative compensatory responses are possible and acceptable, such as enhanced ferry provision. If it is considered that air services are vital to the future social and economic life of these communities, then these destinations should be retained in the system, but this will require additional resource to recruit, retain and train staff and to license and possibly upgrade those airfields.
- A.4.2 Key to any transport decisions are wider strategic decisions about equity of access for inhabitants, countering depopulation, supporting economic regeneration and facilitating inbound tourism, visiting friends and family, provision of social services (such as health and education) and quality of life and social inclusion considerations. It is likely that the case for protecting minimum quality standards should inform transport decision making, rather than transport being viewed from the perspective of only responding to current demonstrable demand. Air services are particularly potent in delivering across many of these headline policy goals outlined above. Protecting a minimum standard of provision rather than hard-nosed cost-benefit, or value for money, calculations is sometimes appropriate, and the Council needs to make this judgement call.
- A.4.3 If destinations such as Skerries and Papa Stour drop out of the PSO system, then the negative implications in moving the air service hub to Sumburgh are somewhat reduced, but still may very well be considered insurmountable. Fair Isle and Foula would benefit from increased frequency to mainland with the loss of the other destinations, and other ameliorations (such as good land transport) may lead to the conclusion that the negative aspects of Tingwall's closure are reduced to an acceptable level by the positives these islands would enjoy as a result of a more concentrated air system. Unst's possible introduction into the PSO system raises ambiguous implications – reducing utility in connecting with Lerwick whilst increasing onward connectivity possibilities
- A.4.4 Another key issue is the contraction of the effective day at either end of the route, because of the longer terrestrial access times to Lerwick. This factor was very prominent in the user surveys undertaken in the 2012 review, and could perhaps on its own lead to the rejection of Sumburgh as a realistic hub. The most significant issue arising from the consultation for all

the islands is that operating out of Sumburgh Airport would place significant constraints on the ability of the island communities to access essential services and conduct every day activities.

- A.4.5 The loss by SIC of strategic control and potential loss of responsiveness of the service in the face of delays and cancellations could be ameliorated by discussions and flexible arrangements with HIAL. However, it is possible that the welcome flexibility enjoyed at Tingwall could potentially degrade somewhat at Sumburgh.
- A.4.6 The increased distance between ferry and air service options in the face of cancellations would also be increased by the use of Sumburgh *vis a vis* Tingwall. This would also apply to inconvenienced freight.
- A.4.7 This document has explored the use of Sumburgh and has identified ways in which the service could be made to work there. The Orkney PSO system co-locating in a HIAL airport provides something of a template.
- A.4.8 The minor cost savings and protection from future regulatory, technology and capital outlay will be potentially attractive to SIC, but these positives must be balanced against the social costs for the utility and attractiveness of the service. Some ameliorations are possible and a judgement needs to be taken on their likelihood of delivery.
- A.4.9 The positive social benefits such as improved onward connectivity and facilitated inbound tourism are likely to be meagre and uncertain, and though potentially significant in the longer term are unlikely to be significant drivers in current decision making.
- A.4.10 Airfreight implications are mixed. Mainland deliveries might be enhanced using Sumburgh, but inter-island deliveries are likely to be less responsive and reduced in their utility by using Sumburgh.
- A.4.11 More comprehensive engineering support should be easier to deliver at Sumburgh rather than Tingwall. This is because there is a cluster of qualified engineers and engineering support equipment and facilities already at Sumburgh. The potential for existing engineers to have the BN2 Islander added to their licence or for them to undertake basic walk arounds and overnight checks adds a possible new source of engineering support to the operator. It should also be easier to recruit engineers seeking a career in aviation where a progression through different aircraft types and support organisations can be identified. This however does also present the possible downside of BN2 engineers being poached by other organisations.
- A.4.12 The loss of Tingwall as a diversionary airfield would reduce the options for BN2 Islander pilots in the face of bad weather. Procedures would have to be adjusted to take this reduction in airfields into account. However, this is not judged to be a show stopper, *vis a vis* the viability or operational integrity of the inter-island air service.

## A.5 Conclusions

- A.5.1 There is a simple maxim in the aviation sector: runways are easy to close (e.g. Plymouth, Manston, Filton) but incredibly difficult to re-open or get built from scratch - witness Broadford on Skye and Heathrow's third runway. For a nation like Scotland on the periphery of Europe, where aviation will always be an essential lifeline service - socially and economically - closing airports (and implicitly therefore runways) should always be a last resort.
- A.5.2 From a financial point of view, it appears that annualised operational savings are minimal in transferring the hub to Sumburgh – they are too close or insignificant to be the deciding factor. Additionally, much of the operational cost in running Tingwall is actually SIC staff costs, and this staff budget allocation is not something that can be turned on and off easily, and hence potential savings may well be partly illusory and likely not a short-term benefit. This is summarised in the tables below:



Table 10: Comparison of Operational Costs

Operational Cost	Sumburgh Costs	Operational Cost	Tingwall Costs
Landing charges	£9,011	Operating Costs	£412,902
Pax Charge	£44,986	Land Transport Costs	£9,100
Aircraft apron parking	£648	Fuel Cost (already in subsidy)	
Offices	£20,000		
Hangar Ground Rent	£20,000		
Hangar Ops Costs annual	£155,322		
Add. Pax Handling costs	£9,400		
Land Transport Costs	£80,000		
Est. Additional Fuel Cost	£35,348		
Other SIC Dept. Recharges	£39,935		
<b>Total</b>	<b>£414,650</b>	<b>Totals</b>	<b>£422,002</b>

Table 11: Comparison of Capital Costs

Capital Cost	Sumburgh Costs	Capital Cost	Tingwall Costs
New Hangar (wide range)	£600,000	Runway	£300,000
Connecting utilities	further work required	Watch Tower	£150,000
Car parking and road access	further work reqd.	Terminal Adjustments / improvements	£100,000
JAR 145 standard interior	further work reqd.		
Upper end estimate	<b>£1,200,000</b>	<b>Sub Totals</b>	<b>£550,000</b>
Possible Avgas Fuel Farm estimate	£100,000	Tingwall runway lighting renewal (high estimate)	£511,000

A.5.3 From a socio economic point of view, Tingwall still is the more attractive hub option. Various ameliorations could be put in place to increase the utility of Sumburgh as a hub. A reduction or change in the destinations included in the inter-island air service would also have a bearing on the comparative attractiveness of each hubbing option.