CARDIFF AIRPORT EXPRESS (T9)

EXTERNAL MINISTERIAL REVIEW

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1 TERMS OF REFERENCE FOR THE REVIEW

I have been asked to report to the Minister for Economy, Science and Transport by 24 January 2014 on:

- The effectiveness of the new Cardiff Airport Express bus service, the T9, (referred to as ***CAE T9*** in this review) in delivering the Welsh Government (WG) objectives for a *fast and frequent service running between Cardiff city centre and Cardiff Airport*
- Any changes that should be made to improve its effectiveness – this could include consideration of the frequency of service, stopping pattern, route, fares and ticketing options and marketing of the service
- The long term sustainability of the service and how this can be maximised

To match these categories the review has been structured under five main headings:

- Background – Setting up the Service

- Effectiveness of the current service (August 2013 – December 2013) – First Five Months Performance

- Improvement in service effectiveness (from January 2014) – Immediate Action

- Analysis of market opportunities and market data

- Long term sustainability of the service (2015 – 2018)

'Effectiveness' in this review is defined as:

- achieving the WG's objective for a *fast and frequent bus service* running between Cardiff Airport and the city centre;
- costs and market demand levels
- comparisons of the subsidy level with other bus services
- creating and achieving market opportunities for business growth
- increasing passenger levels;
- comparing these with the performance of other services both to / from airports and other newly created bus operations
- comparing operating frequencies with current and future demand and with other airport services

The review was commissioned to examine the service, its performance to date and its future in economic, market and operational terms as they relate to Cardiff Airport and how the Cardiff Airport Express (CAE T9) achieves the Welsh Government policy objective *'for a fast and frequent service running between Cardiff city centre and Cardiff Airport'.*

However comments have been made about the operation of the CAE T9 service by local residents and Members of the National Assembly unhappy about the reductions in local bus services and commenting on the "lack of passengers" on the CAE T9.

Following several requests this review has considered the issue of providing a service for non-airport passengers although it was outside the review terms of reference. The rationale and conclusions on such an operation so far as was possible in this review are in Appendix 2.

For brevity abbreviations have been used for Welsh Government (WG) and the Vale of Glamorgan County Council (VoGC)

METHODOLOGY

I used two well established analytical frameworks in organising the material for this review. I created the **4I's** to provide a transport specific analytical tool aimed at achieving integrated transport for travellers (for the British Tourist Authority 1992). The marketing **4P's** has been long established for more general consumer market research.

Integration – the 4I's
Information, Interchange, Investment, Imagination

Marketing – the 4P's
Product, Price, Place Promotion

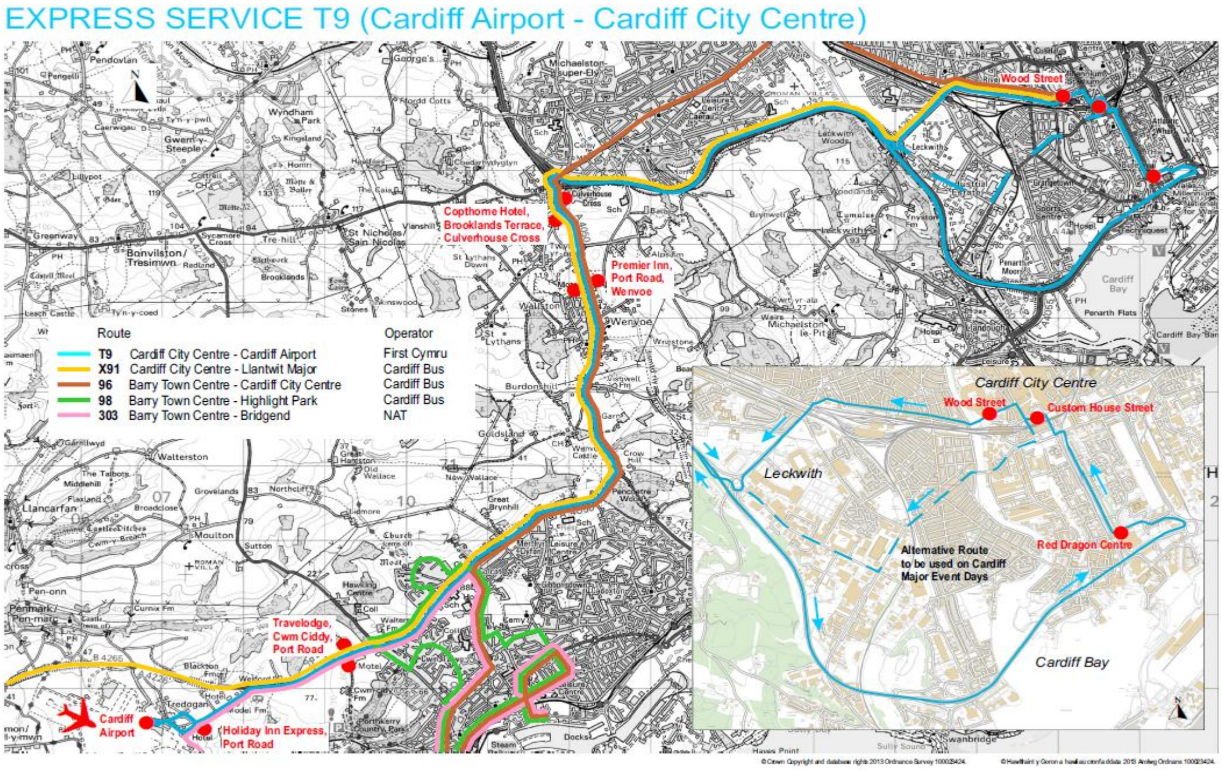
In preparing this review I interviewed all the interested parties (see list Appendix1) to obtain their views on the operation of the service, possibilities for improving effectiveness and to obtain financial and passenger data. I am very grateful for the time and assistance which they all gave. I was provided with all the information I requested where it existed by the Welsh Government (WG), Vale of Glamorgan Council (VoGC), Cardiff City Council, Cardiff Bus Station, Cardiff Airport, Bus Users Cymru, First Cymru Buses the operator of the Cardiff Airport Express, Cardiff Bus, NAT and other bus operators in Wales, England and Scotland and Traveline Cymru

I would emphasise however that the conclusions and recommendations are mine alone assessed independently as the Minister requested

Professor Stuart Cole CBE, BA, MSc, FCILT, FICE
24 January 2014

2 CARDIFF AIRPORT EXPRESS T9 – THE ROUTE

Figure 1: Route Map Cardiff Airport Express T9 service



3 REVIEW TO DECEMBER 2013 AND ACTION PLANS 2014 - 2018

3.1 EFFECTIVENESS TO DECEMBER 2013 – THE FIRST FIVE MONTHS

Background

The Cardiff Airport Express T9 (CAE T9) commenced on 1st August 2013 following a Welsh Government policy decision in June 2013 to operate *a fast and frequent service between Cardiff city centre and Cardiff Airport*

The timescale allowed limited new market research but sufficient expertise was available within government (together with the bidding operators with experience of operating airport services or services in the Vale of Glamorgan) to set a tendering process in motion.

August is not an ideal time to begin a new airport service. The high season is coming to a close and most leisure travellers (the dominant sector at Cardiff Airport) have already made their landside travel mode decision.

Current performance

The operational performance (reliability and timekeeping) is good. The contract between First Cymru (the CEA T9 operator) has provision of on board information on stops, vehicle replacement and branding and the Traffic Commissioners early and late running regulations apply.

Financial Performance

The revenue risk is taken by First Cymru which retains all the revenue. The cost to WG / VoGC is fixed in the contract but with an opportunity to extend after six months.

The original peak vehicle requirement was five buses but this increased to six when operational difficulties arose. All vehicles have come from the TrawsCymru reserve fleet at no immediate capital cost to the WG. None of the vehicles in question was at the time operational so the decision to utilise them had no impact on the TrawsCymru network. However an opportunity cost my occur in the medium term when a TrawsCymru network is established. The additional driver / maintenance costs are funded by First Cymru at no cost to WG.

The low season has resulted in a subsidy per passenger trip of £7.32; however when the summer high season is taken into account that could fall to £4.04 ppt. As the business grows in line with or faster than airport passenger numbers that could fall further to within the general limits for many subsidised services. Passenger numbers for the year could be expected to rise to 116k compared with 21k for the first four months as we move into the high season for air travel.

A suggestion has been made to operate the CAE T9 as a local and premier express airport service. This should not be pursued as these two markets have never been successfully served with the same vehicle / service. Air travellers expect their service to be premium priced and be direct.

Passenger Demand

Passenger demand is at its lowest in winter but the CAE T9 has attracted 4.7% of the landside travel market. This with the 3% share held by the rail service via Rhoose / Cardiff International Airport station gives 7.2 to public transport. A modest assumption is made in the review on increasing this share.

The difference in demand and flight patterns will produce a different peak vehicle requirement between summer and winter particularly in the evening period.

At present the primary catchment area (80% of travellers) is within one hours travel of Cardiff Airport.

3.2 ACTION PLAN – SHORT TERM (2014)

(References in brackets refer to more detailed sections later in the report).

There are actions to be taken by the managers (7.8) of CAE T9 within the next year to increase business and make the service more attractive to passengers and therefore more effective in passenger service criteria, subsidy level (subject to an analysis of revenue risk) and achievement of the Government's objectives. Some actions could start within the years but should then continue over the longer term (2014 – 2018)

- Market research (6.5) on:
    - how can more of Cardiff Airport's biggest market segment (leisure travel) be persuaded to use CAE T9
    - the rugby / major event market
    - student market (south Wales has 7 universities with international students)
    - the full extent of the catchment areas across south Wales and how interchange may be made at Cardiff.

- Promoting CAE T9 to these market segments; creating the next phase of the advertising campaign (6.6).

- Improving information on CAE T9 at key locations – e.g. Cardiff Airport; Cardiff Central Railway Station; Cardiff Bus Station, public libraries, TIC's (7.5).

- Improving interchange information at Cardiff Airport and Cardiff Central Bus and Rail Stations including directional signs, floor vinyls, screens etc. to show clearly the route to the CAE T9 (7.5). This applies in particular on event days and Friday / Saturday evenings when the bus station may not be available. Clear market tested information should be an early action at Stand E1 to show alternative bus stop locations. Assume the passenger has no knowledge of Cardiff city centre.

- Ensure improvements to waiting facilities at Cardiff Airport are carried out. Waiting inside the Departures Hall could be a temporary measure with an information screen showing bus departures (7.5).

- Monitor production of timetables; located on board CAE T9 buses, at Cardiff Central Station information booth and at Cardiff Airport Arrivals Hall (7.5).

- Continue the dialogue through Ministerial and senior officials' action encouraging ATW and Cardiff Airport to consider onward travel within the Government's integrated transport policy for the benefit of through travellers. The CAE T9 should be a part of the discussion on Cardiff Airport's strategic business plan and its implementation.

- Continue to create new market led initiatives for the provision of through tickets to/from Cardiff Airport with ATW, Cardiff Bus, Stagecoach, TrawsCymru, NAT, National Express, First Great Western, Cross Country Trains and other operators (7.5).

- Introducing credit card facility on board liveried buses (7.7).

- Consider the CAE T9 brand. This is a longer term decision but should be included in the market research exercise (7.9).

- Consider a Quality Bus Partnership / Quality Bus Contract on the Cardiff city centre – Cardiff Airport CAE T9 alternative routes

- Analysis of the route options In particular the two way operation through Cardiff Bay and the orbital route via Greyfriars Road, Cathays Park (university and government). Both of these options should be considered with an option for a through ticket on the Cardiff Bus *baycar* (7.6).
  (7.5).

- Ticket machine for rail tickets and for CAE T9 service at Cardiff Airport arrivals hall.

- Retain interior of vehicles as at present until market research to identify passenger needs in respect of the balance between seating and baggage racks. The baggage storage at present on side rack and overhead shelves is sufficient. Most business passengers travel ‘light’ (7.7).

- Review the operating stand at Cardiff Bus Station. The location is perfect for interchange especially with rail services, Newport Bus / Cardiff Bus X30, TrawsCymru and National Express all of which are on site 1 of one of the CDE or F stands. The issue concerns the 12.6 metre length of the vehicle and the need to reverse. Cardiff Bus Station management has been very cooperative

- Examine the PVR of five vehicles increasing to six buses and why two of the liveried Optare Tempo vehicles were /are out of service

3.3 ACTION PLAN – ACHIEVING LONG TERM SUSTAINABILITY

There are actions to be taken by the managers (7.8) of CAE T9 in the longer term 2015 to 2018. Many follow on from the Action Plan for 2014 with the same objectives of increasing passenger numbers, the attractiveness to passengers, continuing to meet passenger service criteria achieving Government objectives

- Market research (6.5) continues to monitor actions taken in previous years on:
    - Cardiff Airport’s biggest market segment (leisure travel)
    - The major event market
    - The student market
    - The catchment areas across south Wales and how interchange may be made at Cardiff.

- Continuing to promoting CAE T9 to these market segments; creating the next phase of the advertising campaign (6.6).

- Monitoring information on CAE T9 is provided at key locations – e.g. Cardiff Airport; Cardiff Central Railway Station; Cardiff Bus Station, public libraries, TIC’s (7.5).

- Updating and renewing interchange information at Cardiff Airport and Cardiff Central Bus and Rail Stations including directional signs, floor vinyls, screens etc. to show clearly the route to the CAE T9 (7.5).

- Improving waiting facilities at Cardiff Airport which currently are poor. Waiting inside the Departures Hall could be a temporary measure with an information screen showing bus departures (7.5).

- Production of timetables; located on board CAE T9 buses, at Cardiff Central Station information booth and at Cardiff Airport Arrivals Hall (7.5).

- Persuade through Ministerial and senior officials action the need for ATW and Cardiff Airport to consider onward travel within the Government's integrated transport policy for the benefit of through travellers. The CAE T9 should be a part of the onward travel and arrivals to the airport in its strategic business plan. That is currently in preparation / implementation

- Discuss with ATW, Cardiff Bus, Stagecoach, TrawsCymru, NAT, National Express, First Great Western, Cross Country Trains and other operators the provision of through tickets to from Cardiff Airport (7.5).

- Introducing credit card facility on board liveried buses (7.7).

- Consider the CAE T9 brand. This is a longer term decision but could be included in the market research exercise (7.9).

- Consider a Quality Bus Partnership / Quality Bus Contract on the Cardiff city centre – Cardiff Airport CAE T9 alternative routes

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- It would appear that the bidders for the contract underestimated passenger numbers and that the revenue to the operator is higher than expected. Calculate the profit / loss made by First Cymru to determine whether the existing contract (where First Cymru take the revenue risk) should continue after the three year review point or whether revenue should accrue to WG.

- Monitor through on board operations checks, Bus Users Cymru bus compliance officers and short on board / bus stop users surveys whether passenger quality criteria / expectations for premium airport service have been achieved / maintained (6.6). They should be considered under:

    - Direct service with some en-route stops
    - Terminal point in the city centre
    - High frequency
    - Fare contestable with the taxi equivalent
    - Good information / easily recognisable branded vehicle
    - Easily available tickets
    - High quality premium service vehicle interior and exterior
    - High level of reliability and timekeeping

- Monitor demand against frequency and consider reducing the winter timetable to two buses per hour in each direction based on market research (5.4; Table 6).

4 BACKGROUND / SETTING UP THE SERVICE

4.1 CREATING THE CARDIFF AIRPORT EXPRESS

An announcement was made in the National Assembly on 11th June 2013 establishing a new express bus service between Cardiff Central and Cardiff Airport. Called the Cardiff Airport Express, service T9 would operate from the 1st August 2013.

This public commitment did not give the timescale which such a service requires to be fully assessed. It was also begun at a low point in the travel market's annual demand pattern (See developing the business below). The market research was limited and largely anecdotal so that the vehicle type, route, stopping places and frequency could not be considered in the manner such a service would have been by a commercial operator.

The availability of vehicles from the TrawsCymru network resulted from the non-introduction of the T1 service as a result of the Transport Act 1985 provision providing for no competition between a subsidised service and one provided commercially on the same Aberystwyth to Carmarthen route. This was fortuitous in that it allowed the promised start date to be achieved. The vehicles were purchased by the WG although technically owned by Powys County Council

The procurement of the service was discussed with both Vale of Glamorgan County Council (VoGC) and Cardiff City Council. They and Cardiff Airport all had an interest in the introduction and success of the service. VoG agreed to proceed with the tendering process in two stages – pre tendering notification and the invitation to tender. The tender was advertised widely through the 'Sell to Wales' website.

The vehicles were provided by the WG from the TrawsCymru spare vehicle fleet with a variant in the branding (7.9). The winning tender requires the provision of operational and maintenance staff, materials, fuel and garaging and the operation of the service according to a timetable and fares agreed with the WG and VoGC.

It should be made clear that there was no major issue in Pembrokeshire with the use of the TrawsCymru buses. The proposed T5 service could not be operated until March 2014 at the earliest if a QBC or QBP was to be introduced on the Haverfordwest to Aberystwyth T5 route.

First Cymru is a Swansea based operator with local service operations in Cardiff, The Vale of Glamorgan and between Bristol Airport and south Wales (its Greyhound brand). In the event several companies bid for the service. The three bus companies interviewed for this review were all respected operators of similar standards and financial standing but with wide price variations in terms of the subsidy costs to WG (5.3).

The tender had to be processed quickly but had also to comply with the due tendering process and achieve best value for money in terms of cost and quality, operating government-owned vehicles and achieving the shortlist of providers. The decision on the contractor was made solely by VoGC with reference to WG on financial data.

There was a relatively short period of six weeks to put out the tender, for bidders to identify or employ staff, create an indicative timetable which met the 20 minute interval. The tender had to achieve the lowest price. But for the operator taking the revenue risk the revenue forecast is vital. For the SME this is an almost impossible task. Larger companies who had other airport express operations or for whom the revenue risk was small in comparison with total turnover may have been better placed to tender.

Cardiff City Council were supportive of the service but were not prepared to be the procurement authority. They were able to provide a stand at the Cardiff Central Bus Station (which they own); initially that was not a particularly attractive location and new more appropriate location was then allocated conveniently for the Cardiff Central Railway Station booking hall and the central business district and therefore the major hotels area. It is also adjacent to the TrawsCymru T4 (service to / from Newtown and the Canolbarth) stand and convenient for the National Express and Greyhound stands.

Discussions took place on the level of frequency of the service. Service intervals of 15 minutes, 20 minutes and 30 minutes were considered. If the service is to be of the form considered an express airport service by travellers especially business visitors then a twenty minute service frequency is the minimum requirement and this was the frequency chosen.

4.2 RECENT OPERATIONS: DIRECT SERVICE TO CARDIFF AIRPORT

In recent years the X91 Cardiff Bus service between Cardiff, Rhoose, St Athan and Llantwit Major called into the airport. This was hourly daytime Monday to Saturday to which were added in 2002 some early morning/late evening airport only journeys in response to scheduled activities at the airport growing (from new airlines operations e.g. BMI baby).

From May 2003 a five journey Sunday service to the airport was introduced and gradually more non-stop airport journeys were added.

A major change in service style and frequency was introduced from 31 October 2004 when the dedicated Airbus service began operation also operated by Cardiff Bus in a BMI Baby livery. The service characteristics were:

- a half hourly frequency throughout the daytime Monday to Friday,
- an hourly frequency in the evenings and all day Saturday and Sunday to and from airport,
- a loop around the city centre to cover the city centre hotels

The Vale of Glamorgan line reopened to passenger service with a new station at Rhoose and a shuttle bus to/from the airport terminal connecting with the hourly railway service. This was (and is) operated by Arriva Trains Wales as an addition to the Wales and Borders rail franchise. The subsequent fall in patronage on both the airport and Vale services led to the discontinuation in March 2006 of Airbus and the resumption of the airport only being served directly by the hourly X91 Llantwit local service.

From October 2009 the service was further reduced to a basic two hourly off peak, hourly peak service, but still retaining the Sunday service.

Finally from July this year the current two hourly Monday to Saturday only service omitting Rhoose and the airport was introduced.

4.3 CONTRACTUAL ARRANGEMENTS

The procurement of the Cardiff Airport Express (CAE) T9 service was through the Vale of Glamorgan Council who are reimbursed for costs incurred by the Welsh Government (WG)

The key aspects of the contract are:

- vehicles are provided by the WG (through the TrawsCymru procurement arrangement with Powys CC) and comply with disability requirements
- information on operations and changes must be supplied to Traveline Cymru
- arrangements may be made for another operator and recover any additional costs if the contracted operator fails to provide a service
- the destination and route number must be clearly displayed on the destination matrix
- publicity, timetables and other information used must be agreed with VoG and WG

- other appropriate vehicles of similar quality to be supplied if the WG Optare Tempo buses are not available; vehicles must be cleaned at least once per day
- the buses may not be used for any purpose other than the CAE T9 service
- the on board next stop audio/visual facility must be working
- branding will be decided by the WG and VoGC; no other amendments may be made by the operator without agreement
- Revenue risk is taken by First Cymru and the company keeps all the revenue or a portion if a further arrangement is made with another operator for 'add-on' ticketing. e.g. with Arriva Trains Wales; Cardiff Bus *baycar*; Newport Bus X30
- Maximum fares are set by the VoGC in Pounds Sterling and Euros. They may be reviewed annually but only in agreement with WG / VoGC
- Other contractual arrangements not directly affecting the operations and the travelling public
- The contract is for six months from 1st August 2013 with an option to extend by VoGC.

4.4 TIMING OF SERVICE COMMENCEMENT

The service commenced at the end of the main travel season. In Cardiff, particularly given its dependence on the charter market, it was about the worst time to begin. The vast majority of travellers in August and early September had already made their land–side travel arrangements. The nature of charter air travellers is that they plan far ahead, are not a frequent flyer segment, prefer familiar modes they have used previously and have in general, difficulty in dealing with unfamiliar disruption.

Consequently the lowest passenger loadings are from September to March and can be expected to pick up during the 2014 summer with effective promotion. Commercially, the service would have commenced in April 2014 with the Easter market. This would then have provided time for it to be assessed and researched in the marketing mix 4P's analysis:

- Product – frequency; type of vehicle; route; stopping pattern; hotels and districts served
- Price – testing of the market; other price options; price sensitive segments research; special rates for e.g. airport staff, BAMC, Enterprise Zone employers
- Place – where the bus service would be at the Bus Station / Airport; signage at Cardiff Central Railway Station and at the Airport in advance of operations commencement; en route bus stop flag information; Airport waiting area
- Promotion – what are the best advertising and other promotional media; managing of press commentary in advance of service commencement and preparation for operating period

Despite these challenges, the service has achieved all that was expected of it in delivering the Welsh Government's objectives *'for a fast and frequent service running between Cardiff city centre and Cardiff Airport'*

5 CURRENT PERFORMANCE – THE EFFECTIVENES OF THE CURRENT SERVICE (August 2013 – December 2013)

5.1 CURRENT OPERATIONAL ROUTE

The outbound route to the Airport runs via the Leckwith area of Cardiff; but there is no market to be developed in that area. There are no stops on this section of the route as there is no potential patronage which would justify them. The alternative route on match days is also along urban local roads.

The inbound route from Cardiff Airport to the city centre runs via Cardiff Bay. This has more market potential and avoids much of the slow moving urban road operation through Leckwith. The distance from the expressway standard southern distributor road the A 4232 Leckwith interchange to the bus station is about one third of the mileage via the Bay. Vehicle speeds via the Bay and along the expressway are three times faster and with less wear and tear on the buses' mechanical parts. This results from a constant speed along the expressway with generally no congestion.

The total journey time between Cardiff Airport and Cardiff Central along both routes is approximately the same at 33 minutes on average but timetabled as 30 minutes via Leckwith and 38 minutes via Cardiff Bay. The Bay is seen as Cardiff's second business district, the primary leisure, restaurant and cultural centre and the nation's parliamentary centre at the National Assembly for Wales.

Thus operational reliability is better along the route via Cardiff Bay with the same journey time and less vehicle wear; these have been confirmed with First Cymru, the Cardiff Airport Express operator (7.6).

Its patronage potential is therefore significantly greater than the Leckwith route. But this requires market analysis and confirmation of running times to avoid the additional cost predicted by First Cymru

5.2 OPERATIONAL PERFORMANCE (Reliability, timekeeping)

Reliability and timekeeping targets are according to the Traffic Commissioner's regulations on early (not more than 1 minute) and late (not more than 5 minutes) running for 95% of the operating period.

The contract with VoGC sets out the requirements on branding, route display provision of alternative vehicles, restrictions on CAE T9 vehicle use to the airport route (4.3).

An additional (sixth) vehicle was provided by the WG at no extra cost to First Cymru Buses from 7th October 2013. The additional vehicle requirement was to enable the regular pattern timetable service to be maintained. The problems arose from:

- Regular faults occurring with two of the five CAE T9 liveried vehicles already supplied.
- To assist with a refuelling problem as the length of the working day and the mileage operated by the vehicles exceeds the fuel tank capacity.

It was procured under a separate WG budget heading to the CAE T9 operation and was available from the TrawsCymru reserve fleet. There was no immediate cost implication for WG but an opportunity cost could arise when further TrawsCymru operations commence. All additional running, maintenance or driver payments have been made by First Cymru Buses at no further cost to WG.

Overall the vehicle failure rate is very low and well within acceptable bounds. Vehicles travel on average 40k – 50k miles each month with an average lost mileage of 50 miles – 0.1%. Twenty one services were lost (based on contractual figures provided to VoGC by First Cymru Buses) over the period 1st August to 30th November. The majority of these were engineering problems. The most significant event appears to be one vehicle out of service on 12 January 2014 as a result of a one-off 'no driver'. As a consequence one vehicle (20% of the service) was out of operation from 06.10 to 10.15. For the waiting passenger a delay of up to 39 minutes (rather than 19 minutes) was possible and this type of occurrence, though very infrequent, is one which can adversely affect the image of the business.

In most cases the failed CAE T9 buses were replaced by liveried First Cymru vehicles taken from their Park & Ride fleet. These were not of the same interior standard as the CAE T9 vehicles (although they were acceptable) and this requires further discussion between WG / VoGC / First Cymru.

However there have been out of service issues with two CAE T9 liveried vehicles provided by WG. Engineering advice suggests this is due to a poor electrical system or installation. Information from Stagecoach, the TrawsCymru T4 operator, suggests that these will be ironed out over a short period. There were ten incidents of en route breakdowns with the vehicle having to be recovered. That reliability is less than for peer group buses. The major reason for vehicles being out of service were engineering /maintenance

Driver reports are favourable. Customers interviewed reported a smooth ride although vibration occurs on certain sections of the route.

There can be operational delays to outbound journeys on Cardiff City FC home match days at the Cardiff City Stadium (Leckwith) which have interfered with the reliability of the timetable. The timekeeping also suffers on match days at the

Millennium Stadium where CAE T9 cannot operate from the Cardiff central bus station and has to use Custom House Street as the city centre terminal. This also occurs on Friday evenings and Saturday evenings when the service cannot access Lower St Mary Street. There is no specific timetable for these periods. First Cymru has been put in touch with Cardiff's events management team to ensure that any resulting disruption to services is minimised.

5.3 FINANCIAL PERFORMANCE

<u>Costs</u>
The total operating cost of this service is a matter for the operating company First Cymru. They also take the revenue risk.

They are contracted to operate a service according to the timetable agreed with VoG and during the period 1 August 2013 and 30 November 2013 First Cymru was paid a total sum of £156,693. The buses are provided by the Welsh Government through VoGC and are therefore also a cost to WG. The total cost to the public purse may be set out as follows (based on PVR of 4 vehicles and 1 engineering spare)

Table 1: CAE T9 – Costs to WG 1 August 2013 – 30 November 2013	
Cost Heading	**£**
Operating revenue support (subsidy)	156,693
Bus depreciation (5 vehicles)	19,000
Marketing (mainly promotion)	63,178
Depreciation Vehicle 6	3,800
Total cost to Welsh Government	242,691

Source: Welsh Government; VoGC, Review analysis

While the original peak vehicle requirement (PVR) was four vehicles and an engineering, spare the current PVR has increased to five vehicles. This additional vehicle has been supplied from the TrawsCymru spare fleet and is therefore an additional opportunity cost to WG. The depreciation costs are based on straight line depreciation over 15 years with a residual value of 5%. The cost per passenger on this basis (including advertising and depreciation) is £11.33 per passenger trip.

Operational changes such as lower frequencies at either end of the day leading to reduced costs should be looked at, but in the context of service quality to travellers, promoting the service and longer term demand patterns and based on market research outputs.

However the advertising costs are a one off start-up cost and depreciation an opportunity cost already sunk.

The subsidy figure shown in Table 2 refers to the Winter 2013 low season travel period and the start-up period when passengers were being abstracted from other modes. On a comparable basis for the total Summer / Winter period the subsidy could fall to £4.04 per passenger trip (Table 3).

Table 2: Subsidy per passenger CAE T9	
Many of the urban, semi – urban / inter – urban services referred to below have service frequencies of hourly or two hourly. This should be considered when making a comparison with the twenty minute frequency of the CAE T9 service.	
Period 1 August 2013 – 30 November 2013	
Total Passengers carried (1)	21,400
Total subsidy paid (2)	£156,693
Cost per passenger trip	£7.32
Based on costs in Table 2	£11.33
(1) Data from VoG / WG. (2) Excludes depreciation	

Source: VoGC; Review analysis

Table 3: Key Financial Comparators		
Subsidy per passenger trip on comparable routes (based on typical services) 2013		
The services are subsidised by local authorities		
	Per passenger trip	
	Range	average (un-weighted)
Urban	£0.38 - £2.42	£1.43
Semi – urban / part – rural (Inter – urban)	£0.34 - £2.77	£1.43
Rural	£3.79 - £8.74	£6.22
CAE T9*		£7.32
Annual subsidy estimate**		£4.04
*excludes vehicle depreciation. The buses involved are funded from a separate capital budget. The subsidy per passenger trip shown here is therefore comparable (but see Table 1) **The annual subsidy per passenger trip would fall with summer traffic (Table 10)		

Source: county councils; Review analysis.

The conclusion on the acceptability of this relatively high cost per passenger trip can only be based on comparisons with other bus service subsidy levels because no target subsidy per passenger trip was available as a yardstick.

On this basis the subsidy currently is relatively high but discussed later are possible lower subsidy rates following the development of Cardiff Airport's air passenger numbers and changes to the CAE T9 timetable. Under the current contract that increase in income will however accrue to First Cymru as it is taking the revenue risk.

5.4 PASSENGER DEMAND

The CAE T9 has already attracted 4.7% of the total (440,000) passengers arriving / departing Cardiff Airport from August – November 2013. This is a considerable achievement for a service where major publicity began in parallel with its introduction. By comparison the train service from Cardiff Central station to Rhoose / Cardiff International station connecting with the shuttle bus in 2012 carried 3%. The market view is that the 20 minute frequency, easy and convenient interchange at Cardiff Central bus / rail stations and no additional interchange together are a major attraction compared with an hourly service (Tables 4, 10).

The number of passengers carried cannot be compared with any target as none was set. The only yardstick is the assumed passenger numbers and thus revenue which was set out by the bus companies who submitted tenders. This level has been exceeded.

The level of passenger demand has been satisfactory. August inbound figures grew to around 2500 from August and plateaued at around 2300 – 2500. Outbound passenger numbers however rose from under 2000 to up to 3500 in subsequent months (table 4) Thus a reversal from a dominant inbound market (56%) to a dominant outbound movement (>60%) has occurred.

The need to introduce the service within a very short timeframe and the resulting lack of any market research data prevents any evidential based conclusion.
The service introduction coincided with the Stage 1 promotional poster campaign in August – October. This was comprehensive in south east Wales and extended west as bus site advertising to Swansea, Llanelli and Carmarthen

Table 4 CAE T9 Passenger Figures August – November 2013					
Direction	Month				
	August	September	October	November	December
To Cardiff	2415	2565	2291	2118	1562
To Airport	1834	3490	3580	3107	2796
Total	4249	6055	5871	5225	4358
Total Rail	2424	2761	2687	2459	1986

Source: VoGC

There appears to have been some abstraction of passengers from the ATW rail service to / from Rhoose / Cardiff International Airport station (based on the patronage of the 905 bus shuttle figures). Over the August – December period of operation of the CAE T9 the passenger between 2012 and 2013 was 13,034 to 12,317 a reduction of 727 or 5.5%. Research is required to identify if there is any connection. The total public transport share of the landside market in that period was 7.7%.

Data provided through the ACTIA counts indicate the dominant pick up / set down points are Cardiff Airport and Cardiff Central Bus Station. The next most significant is Cardiff Bay. Other stops are relatively unimportant but should be seen in the light of business development opportunities

Table 5 Pick-up / set-down: Average daily % of total passengers		
Stop	Pick up (%)	Set down (%)
Cardiff Bus Station	43.1	44.5
Cardiff Airport	37.0	30.5
Cardiff Bay*	6.1	5.6
Custom House Street	1.8	5.4
Other	12.0	14.0
Total	100.0	100.0
*Atlantic Wharf / County Hall, Hemmingway Road		

Source: Actia Fleet Database

<u>Passenger / revenue growth</u>

The only financial target / constraint was the fixed price subsidy to be paid to company operating the contract (First Cymru). The risk on costs and revenue was taken by First Cymru and passenger / revenue growth would be in their financial interest.

Below the CAE T9 service frequency is set in relation to the arrival times / departure times of flights in the current winter timetable to identify any correlation. This represents the primary movement periods for air services. The summer flight timetable has more aircraft movements

Currently during the Winter flights timetable to April 2014, the 3 – bus per hour (20 minute service interval) CAE T9 timetable operates from 04.10 (dep Cardiff Bay; 0418 dep Cardiff central Bus Station) to final departure from Cardiff Airport (23.40) arriving Cardiff Central Bus Station at 00.18

The current flight and therefore demand pattern does not require that level of service at the beginning and end of the travel / operating day during the winter period. Despite there being a significant gap in flights between 12.00 and 15.30 on Mondays and Wednesdays the other days have several flights during that period (see Fig 2 / Fig 3). It would be impossible to promote successfully such a complex variation in service to passengers.

In addition the suspension of the service during the day on certain days only saves variable costs – mainly fuel and maintenance and driver wage costs where working schedules can be amended. Other costs including some driver wages and depreciation remain the same. The effect on the subsidy figure paid requires further analysis and discussion with First Cymru

An amended winter period CAE T9 timetable is suggested in Table 6.

Table 6: Flights with associated justified ***CAE T9 frequencies (Winter Timetable)

No. of flights (Inbound + outbound)		Winter Frequency CAE T9 (Current actual in brackets)	
Time band**		Time band	per hour
00.00 – 06.00	0		
O6.00	1	04.10 – 06.30	1/2 (3)
07.30 – 09.00	1	06.30 – 09.30	2/3 (3)
09.05 – 10.30	3	09.30 – 11.00	3 (3)
11.00 – 12.00	4		
12.00 – 15.30	5	11.00 – 13.30	3 (3)
15.30 – 17.30	7	13.30 – 15.30	3 (3)
18.30 – 20.30	6	15.30 – 19.30	3 (3)
20.35 - 21.35	2	19.30 – 22.00	3 (3)
21.35 – 00.00	1 – 3	22.00 – 00.00	1 (3)
Total flights	32		

*After 22.00 there are 1 / 2 inbound charter flights

** The number of flights in each time band varies daily. The CAE T9 frequency has accounted for the variation.

***The pattern of passenger movements for a particular flight does not correlate with passenger loadings on CAE T9. This indicates that some travellers like to arrive early at the airport while others cut it to varying levels of 'fine'. The detailed sheets on per journey loadings were made available to the review by VoGC and are available if required. For the equivalent flights the CAE T9 departures (and bus capacity requirements) are advanced by approximately 2 hours to allow for airline requirement (check – in / security)

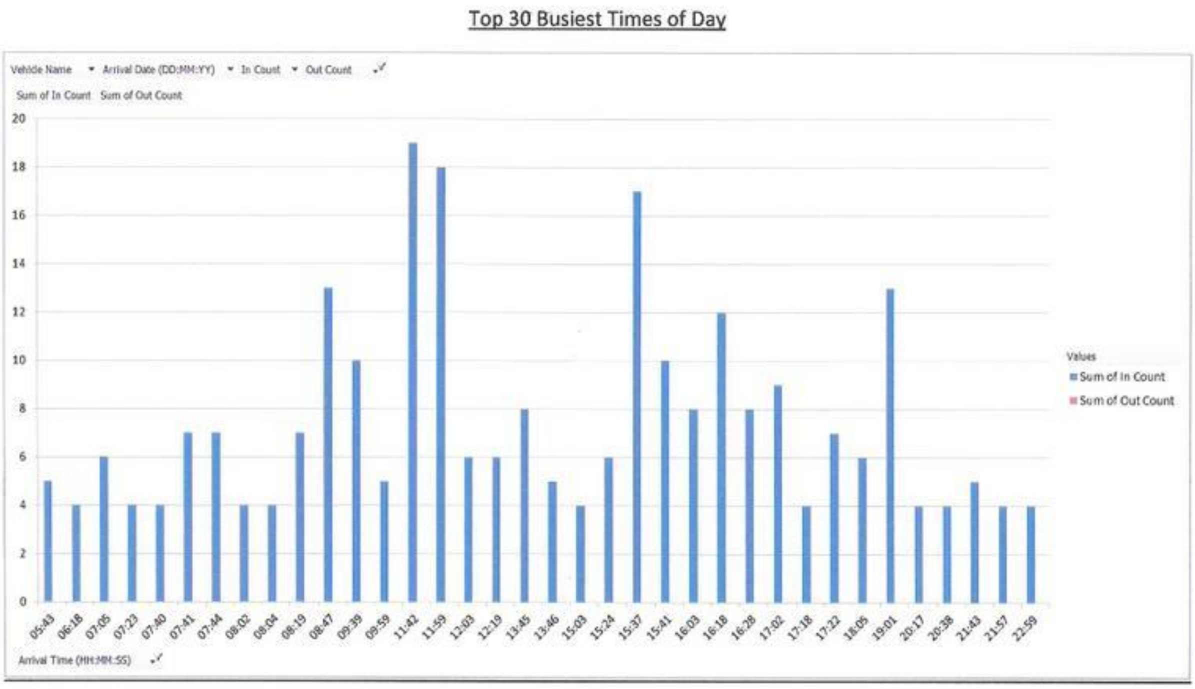
Source: Cardiff Airport; CAE T9 timetables; Review analysis

One objective (unquantified) was the visibility of the service; it has developed a high profile operation in the city centre and en-route to Cardiff Airport. An element which may have helped is the common branding and adjacent bus station location (7.5, 7.9) with TrawsCymru T4. This has been exceptionally successful in increasing patronage and reducing the T4 subsidy to £0.05 (five pence) per passenger trip.

The CAE T9 has achieved media coverage as a *fast and frequent* high quality service from Cardiff to the airport. Media space was purchased (Phase 1: public awareness of the service costing £63,178) to give maximum publicity at e.g. railway stations and bus panels from Newport to Swansea and Llanelli.

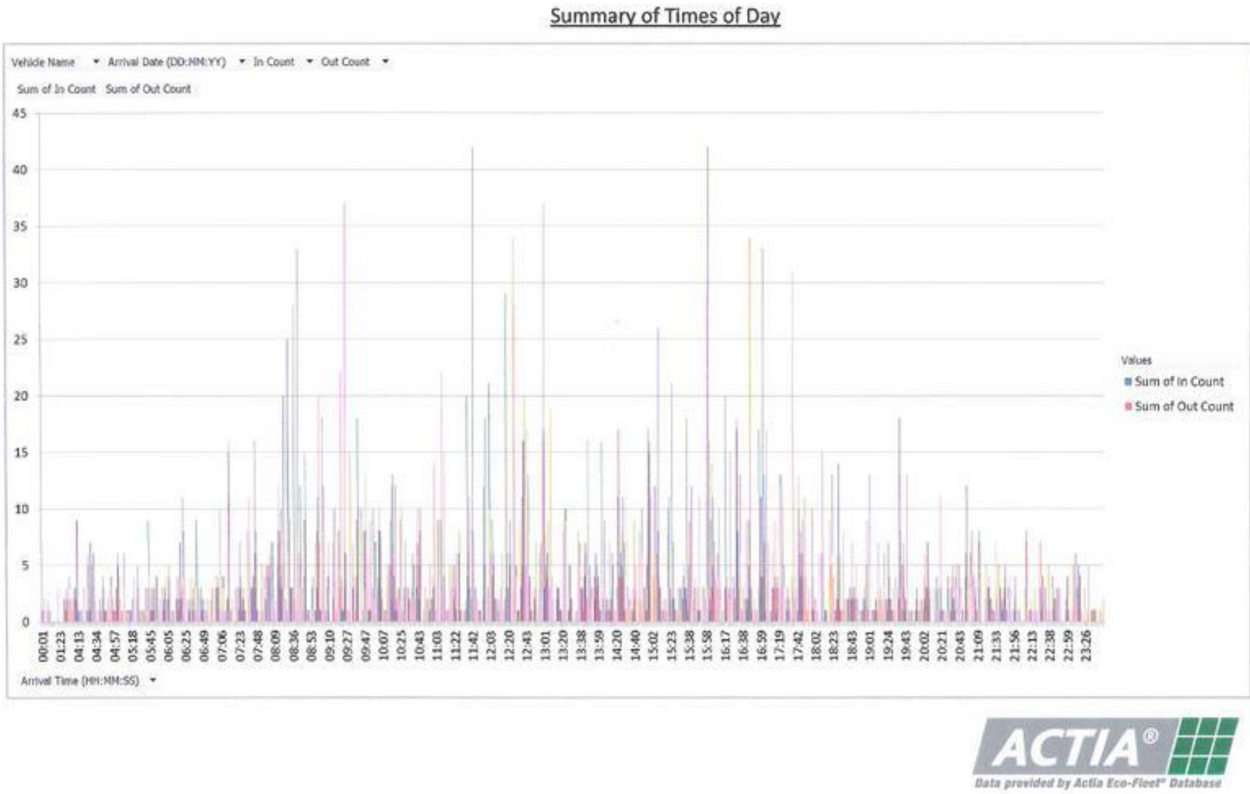
Table 4 shows a growth in demand for a new service with future growth potential (Table 10). The service also has several peaks during the day related to arrival / departure times of flights (Fig 2 / Fig3).

Figure 2: Top 30 Busiest Services / Times of Day (Week 23 / 29 September 2013)



Data provided by Actia Eco-Fleet® Database

Figure 3: Vehicle occupancy by departure time from Cardiff Airport / Cardiff Central Bus Station (Week 23 / 29 September 2013)



5.5 ACHIEVING THE GOVERNMENT'S OBJECTIVES – CONCLUSIONS ON CURRENT PERFORMANCE

- It should be noted that these objectives have been achieved despite the absence of a market and development strategy which would have been undertaken had officials had more time than that available between the decision on 11 June 2013 and the start of the service on 1 August 2013
- The absence of any market research into the CAE T9 service prevented any demand targets being set and in consequence made it difficult to measure the effectiveness in terms of passenger numbers against target.
- Passenger numbers appear to have exceeded the estimates made by the bus companies who tendered and as this is the only yardstick available, one can say that the service so far has been a success. The bidders with whom I had contact all had low passenger expectations when calculating the revenue risk they had to take.
- Comparisons may be made with the rail service to the airport (Table 4) which has 3% of the market while CAE T9 has 4.7% (5.4).
- The agreed cost of operating the CAE T9 has not been changed in terms of the direct subsidy payment from VoGC to First Cymru. However an additional

vehicle has been supplied with an opportunity cost (for depreciation / capital expenditure)at some point to the WG

6 CHANGES TO IMPROVE EFFECTIVENESS

6.1 WELSH GOVERNMENT EXPECTATIONS

The Welsh Government as funder of the CAE T9 operation can expect to see develop:

- a fast (33 minute journey time) and frequent (every twenty minutes) service

- A subsidy level which is not excessive compared with other routes given that demand on the CAE T9 will take time to build up
- Evidence that there is a market for this service (shown by the current demand)
- Expectation that demand could be expected to grow as flights and air passenger throughput grows and as the promotional campaign planned for this spring generates local passengers from Wales on to charter flights (see new markets below).
- As a set of effectiveness criteria
    - Preparation for an increase in passenger numbers over the first eighteen months to two years (6.5, 6.6)
    - Journey time of 30 – 40 minutes (variable by peak and off peak operating times)
    - High level of reliability and frequency
    - Present a high quality image of Wales and the capital city to overseas visitors and business travellers

6.2 PASSENGER SERVICE QUALITY EXPECTATIONS / CRITERIA

Air passengers particularly those who travel frequently to many destinations through their own individual arrangements (i.e. not package tour customers) have a certain expectation from an airport – city centre service. They expect:

- a direct service with some set down stops inbound and pick up stops outbound within what might be called the 'city centre en route' for example
    - the Edinburgh Service 100 - *AIRLINK: Airport - City Centre* service has en route stops at Haymarket Station / tram terminal and one other;
    - The Bristol *Flyer* Airport Express Link with two en-route request stops before the city centre and seven en-route request stops within the city centre. These are located to serve CBD areas and groups of international chain hotels. The fare charge is a standard £11 (return) and £7 (single) for any journey. There are student and family fares; no reductions for part journey; holders of England (not Wales) over 60's pass holders travel free.
    - Dublin *Airlink* fare €5 (s); Aircoach several stops en – route €7 (s)

  Cardiff *CAE* satisfies this criterion and operates within an acceptable journey time given road types and conditions it is a fast service

- A premier exclusive air passenger service. Bus operators and airport management held the view that a mixed service serving local and airport (often international business travellers) did not work. Air passengers expected to pay a premium fare and lost revenue from them would outweigh the additional revenue from local passengers.

- A terminal point in the city centre which is convenient (within 1000m) for the majority and preferably all of – the central business district (CBD), and / or additional en – route request stops. Edinburgh: terminates at Edinburgh Waverley Bridge adjacent to the main railway station and CBD in Princess Street and George Street; Bristol: terminates at Bristol Central Bus Station via Bristol Temple Meads Railway Station either side of the CBD; Dublin: Busarras near Custom House and the traditional CBD.
  Cardiff *CAE* satisfies this criterion; it improves on Dublin and Bristol.

- A high frequency service of every 10 – 15 minutes (average waiting time 5 – 7.5 minutes). Exceptionally a 20 minute service frequency will be acceptable (and in Cardiff's case the most appropriate for daytime operation). A less frequent service, say every 30 minutes, could not be their perception of a city centre express service in the early morning or late evening if good information was available. This is evidenced in the hourly frequency service on Arriva Trains Wales via Rhoose Cardiff Airport railway station and the airport shuttle bus – a dissuasive characteristic of an inconvenient / difficult change of mode Cardiff *CAE* for the size of the market is a frequent service. It currently satisfies this criterion.

- A fare which is about 20% – 25% of the comparable taxi journey to compensate for the inconvenience of waiting time and also walking time at the town end
  Cardiff *CAE* satisfies this criterion – it is a frequent service

- Information: timetable through Traveline Cymru; online and call-centre. Traveline Cymru provide a marketing and promotional service; bulk buying of advertising sites and radio/television slots
  Action is required here.

- Easily available tickets. Reference is made to third party sales outlets including Traveline Cymru, airlines, (as part of their service) hotels (selling for the convenience of their residents), Arriva Trains Wales, Cardiff Airport (ticket machine in Arrivals Hall)
  Action is required here.

- A high quality vehicle with seating for all (other than in exceptional services) thus giving the travel experience associated with air travel. The quality of this part of their journey will also give them a positive image of Wales and the capital city
  Cardiff *CAE* matches this criterion

- High reliability (timekeeping and service operating) especially on the outbound journey to the airport is essential. Travellers have a high tension state because missing the flight can have many onward and financial consequences.
  Cardiff *CAE* satisfies this criterion

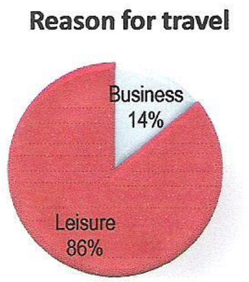
6.3 CARDIFF AIRPORT EXPRESS T9 – A NEW BUSINESS

This is a new business venture and should be judged as such. Five months is too short a period of time to estimate the eventual demand level. As a start – up service it will not be an instant 'hit'. This applies to any business and its performance should be reviewed again 12 months' time (tables.

This service should be compared with other new bus ventures at its current stage of development. The First Cymru *Greyhound* coach service from Swansea to Bristol Airport via Cardiff will be learning about demand patterns and would have to build up its business. The original *100 Shuttle* from Swansea to Cardiff took over from the *N&C Express* operation and had a clear market picture and has been a financial success.

The service also commenced in the low period for air travel and all UK airports have reduced throughput in the period August to February. This is particularly so for the air traveller market at Cardiff Airport is split between Business (14%) and leisure mainly charter flights (86%) and thus movements are currently concentrated in the summer period

Figure 4:Passenger Profile – Reason for Travel



Source: CAA Airport Statistics 2012

6.4 BUSINESS GROWTH

There are key answers and answers here which will determine passenger growth on the CAE T9 in 2014 and in the long term

Who is the market for the CAE T9?

- International business travellers who have a certain expectation of an airport express service
- Private travellers using both scheduled and charter flights but who are independently organised
- Charter package passengers whose travel to / from Cardiff Airport is already organised
- Independent travellers who would prefer to use an airport express service if one is available
- Passengers currently coming by car and parking
- Passengers coming from / going to parts of south Wales (primarily) via Cardiff Central by train bus or coach

What is their origin point or destination?

- Cardiff City centre as residents or business / leisure inbound travellers
- The Cardiff valleys
- Newport / Cwmbran eastern valleys
- South west Wales (from Bridgend westwards)
- Vale of Glamorgan

What was known of the markets in relation to the CAE T9?

- No extensive market research carried out
- An initial timetable design
- No relationship between the CAE T9 timetable and flight patterns.

What now needs to be done?

- A comprehensive market research exercise to identify the markets including market size, segmentation, travel patterns to/from the airport.
- The form of promotion work to be done and by whom
- Consideration of the points raised in the review on the effectiveness of the current service and the Action Plans (3.1 – 3.3; 6.5 – 6.6)
- How Cardiff Airport presents itself as equally attractive as Bristol

6.5 SPECIFIC MARKET SEGMENTS TO TARGET

International rugby games in Cardiff 2014 Season

A test of the CAE T9 service will come with the major rugby international games where Wales are playing at home

- Italy: Saturday 1st February 14.30
- France: Friday 21st February 20.00
- Scotland: Saturday 15th March 14.45

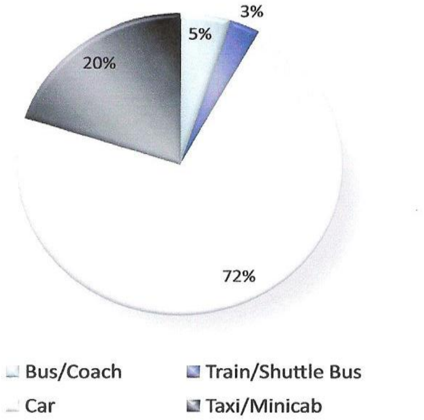
Travellers from Italy and France may arrive on charter flights and are likely to have coach transfers to their hotels as part of a 'package'. However independent travellers on the new Cityjet service to / from Paris along with KLM to/from Amsterdam would provide a possible market surge on Friday and Sunday operations. Visit Wales could identify promotional opportunities at e.g. departure airports, rugby clubs.

At the city centre end international rugby games and other major events at the National Stadium cause diversions of bus operations to/ from the bus station. To minimise inconvenience for passengers and retain the CAE T9 good experience perception the changes e.g. terminating / beginning outbound journey at Custom House Street or elsewhere should be clear to arriving passengers not familiar with the city centre. This will then help relieve the tension associated with outbound journeys

Student market / Enterprise Zone employees

This is a potential market with five universities in south Wales with a high proportion of overseas students. The numbers and revenue would depend on which scheduled airlines were attracted to Cardiff Airport. Students might be offered a discount fare.

Figure 5: Land side modal split – passengers travelled to the airport

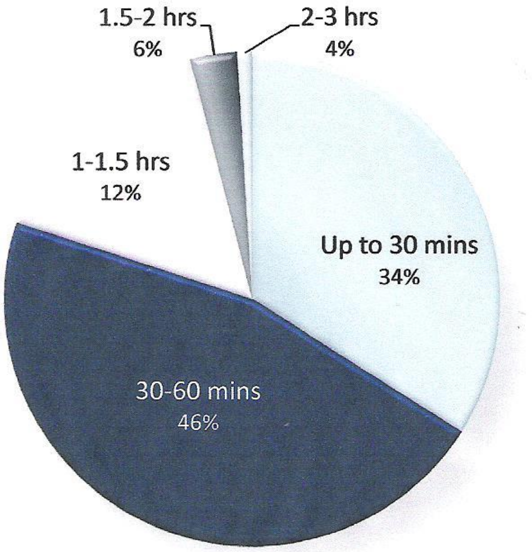


Source: CCA Airports Report 2012

At present no market data is available on the current use of the CAE T9. A market survey of passengers and of potential passengers is required to provide an analysis of e.g. journey purpose, source of information about the bus link; would they prefer to book with their air ticket.

CAE T9 Catchment area

Figure 6: Journey Time to / from Cardiff Airport



Source: CAA Airports Report 2012

Eighty six per cent of the Airport's catchment area in Wales followed by Scotland (6%) – the likely result of a frequent service, south West England (3%) and Northern Ireland (2%) with worthwhile percentages in the Netherlands (3% via KLM), France (2%) and Eire (3%). This is reflected in journey times of under an hour for 80% outbound travellers to the airport.

The majority of outbound passengers (96%) started their journey in Wales dominated by Cardiff (28%), Swansea (11%), Bridgend (9%) and the Vale of Glamorgan (9%). Several other counties along the M4 and A470 corridors contributed about 4% each. Monmouthshire's percentage was 1% not surprising given the choice of Bristol and Cardiff with an almost equal journey time.

There is evidence of residents in south Wales travelling via Bristol because there are more destinations or there are more flight options to / from other airports. The same applies to inbound travellers even if their destination is Cardiff.

The catchment area possibilities are

- Cardiff central residential, hotel, government, academic and business areas
- Areas further away but which are well connected by public transport e.g. Valleys towns, Newport, Cwmbran. There is a geographical point to the east and north east of Cardiff where the competitive market is served by Bristol, Birmingham and London Heathrow. Here overall journey costs (all side and air travel) will have an effect on airport choice
- Those same areas where part of the home end journey is made by taxi or private car to connect into the bus or rail network and where considerable savings are to be made in the journey cost to and from the Airport.
- The market research has to analyse these different market segments

6.6 ACTION PLAN – MARKET OPPORTUNITIES

The actions during 2014 and 2015 - 2018 to be drawn from this data in terms of market opportunities are:

- The leisure market is the major possible source of business for the CAE T9 in terms of absolute numbers. However it would seem (from limited data and evidence from Bus Users Cymru) much of that traffic traditionally travels to / from the airport by private car, organised minibus or is driven by friends often on a reciprocal basis. If none of these is available the alternative mode is public transport or an overnight stay in Cardiff. But as this is the dominant market segment it could, if successfully tapped, provide a significant source passenger numbers. There is a need for a literature search and additional economic analysis for the Cardiff / south Wales market into the travel cost impact (cross price elasticity) and convenience (service elasticity) of alternative modes.
- Air passengers to Cardiff city centre on business for a one day trip or staying overnight at a city centre hotel or an hotel nearer to the airport is a significant potential market which should be the subject of market research. This is particularly so on early morning departures between 06.00 and 07.00 of which in the summer timetable there are six – three charter flights and three business services (Amsterdam, Edinburgh and Glasgow). Data is required on this market segment. It has been suggested that this is the best market to exploit in absolute terms even though it is a small percentage of the total Cardiff passenger market.
- Exploring opportunities with inbound scheduled carriers – e.g. KLM, Citywing, Vueling, Flybe, Aer Lingus, Eastern, Germanwings.
- One international airline in discussion with Cardiff Airport had a fast premier bus to / from the city centre as one of its decision criteria.
- Those residents living nearer or in the city centre are similarly a possible source.

- Residents of west and north suburban Cardiff travelling on early flights are unlikely to travel by taxi to Cardiff Bus Station and then by CAE T9. They are likely to make that taxi journey directly to the airport.
- Travelling in both directions via Cardiff Bay could grow the market through passengers being guaranteed the return trip without going through Cardiff Central Bus Station as at present. This could be trialled on a pilot basis with confirmation sought in the market research exercise
- There has been discussion on whether the CAE T9 should also act as a stopping service for local travellers. The standard fare (currently £5 / £8) would be payable as it does for air travellers riding to/from intermediate points en route. Cardiff Bus commercial services (96, X91) on parts of the route could attract anti-competition legal action against VoGC and WG. From a market growth point of view there is an opportunity for another source of revenue but this is a short term expedient and would lose air passengers and is not recommended.(Rationale regarding local services is in Appendix 2).
- The present stopping pattern at Culverhouse Cross and at the Premier Inn Wenvoe, the Travelodge Cwmcuddy and the Holiday Inn Express Airport should be reviewed in the light of demand as part of the market research. They may have an impact on early morning flights for overnight stayers. Other stopping points should be considered in purely commercial terms as air passenger revenue generators.
- Suggestions were made by some of those interviewed that the CAE T9 should travel around the bus box in central Cardiff from Custom House Street via Churchill Way, Dumfries Place, Greyfriars Road and Westgate Street. This could open up the hotels market in that area. Market research is required on this potential market segment but operational cost implications and previous market / revenue experience suggest this would increase the net loss (and subsidy required) on the service.
- There is a serious competitor for the Swansea area market where the Greyhound (operated by First Cymru) service provides competition with a direct two – hourly frequency service from Swansea Bus Station to Bristol Airport. Counteracting travel pattern will benefit CAE T9 and Cardiff Airport business plans. However it could be turned to advantage as it could connect with the CAE T9 at Cardiff Bus Station on an hourly basis.
- Connecting feeder services into / from CAE T9 could be achieved through advertising / promoting the interchange facility at Cardiff Central Bus Station, with arrangements made more effective with through ticketing. There are opportunities to be developed with rail operators – Arriva Trains Wales, First Great Western, Cross Country Trains – and other bus operators – TrawsCymru Cardiff Bus, Stagecoach, National Express, NAT, First Cymru, Newport Bus, First Cymru Greyhound – in terms of advertised connections at Cardiff Central Bus Station.(7.5).

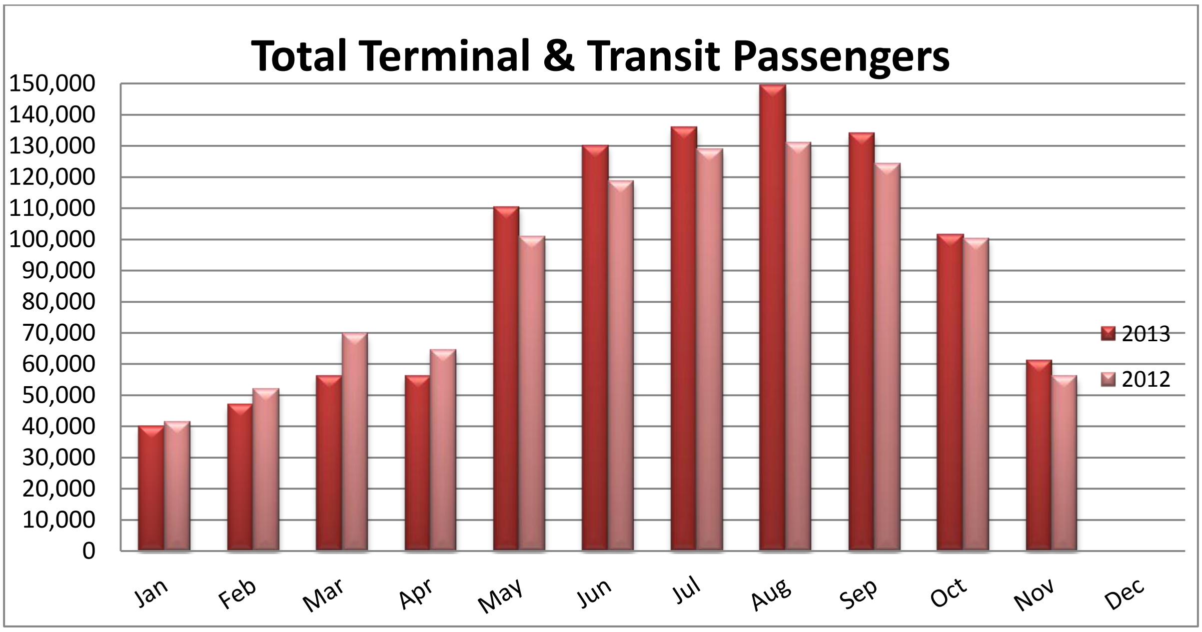
- One aspect of travel which most people try to avoid is the inconvenience of interchange. Firstly there is the transfer of luggage, buggies, young children plus themselves. Secondly, there is the insecurity of guaranteed interchange timing and will the next vehicle be in place for their onward journey. This will be a particular difficulty in persuading those who have previously travelled to Cardiff Airport by car that public transport works, and for them. This again is a part of the market research now required to progress the CAE T9 service.

7 LONG TERM SUSTAINABILITY OF THE CAE T9 SERVICE

7.1 SUMMER TIMETABLE IMPLICATIONS FOR THE CAE T9 MARKET

This provides a far greater number of inbound and outbound flights at Cardiff Airport compared with winter timetable. The 2014 plan has increased the number of Tuesday / Friday (typical weekdays) flights over summer 2013 from 60 to 76 flights per day and over the winter timetable from 32 flights per day. The summer market thus has more passengers from which to draw.

Figure 7: Cardiff Airport Summer / Winter Passenger Levels



Source: Monthly Passenger Aircraft Movements Cardiff Airport (Lisa Morgan 15/01/2014)

There is general agreement in the bus and air travel industry that the success of the CAE T9 is dependent on the number of flights to / from Cardiff Airport. This could be significantly assisted by the other market / marketing opportunities suggested above if the promotion and connectivity elements are effectively developed.

Table 7: Cardiff Airport's passenger forecast 2013/14 – 2017/18

Period	million passengers	% growth on previous year
2013 (Forecast)	1.017	
2013/14	1.071	1.1
2014/15	1.155	7.8
2015/16	1.592	37.8
2016/17	1.663	4.5
2017/18	1.958	17.7

Source: Cardiff Airport

Cardiff Airport appears to have halted the decline in passenger numbers and has achieved growth of about 9% year on year during the summer. Monitoring the monthly trends will provide a useful indicator of trends in potential CAE T9 growth. The summer period May to September is the high demand period.

It is suggested above (Table 6) that the Winter 2013 – 14 (current) operational pattern has a 20 minute frequency from 05.30 to 21.30 and an hourly frequency earlier and later. Based on the number and spread of flights over a typical day and the likely number of passengers in different time bands a different pattern of service on the CAE T9 could be justified during the summer period (Table 8). The passenger loadings should be reviewed in determining the frequency. In particular the degree of demand from the charter market (Table 8)

Table 8 CAE T9 Summer service pattern / flights / air passenger estimates

	Aircraft operations		CAE T9 Operations		
Time band	Number of flights (1) (inbound / outbound)	Air passenger throughput (2) based on aircraft capacity	Passenger forecast (3)	Frequency both directions (4)	Average Loading (5)
00.0 – 04.00 (6)	5	540	54	1	
00.0 – 06.00	0	0	0	3	
06.00 – 07.00 (7)	4	620	62	3	
07.00 – 08.00	4	150	15	3	
08.00 – 09.00	6	410	41	3	
09.00 – 10.00	6	850	85	3	
10.00 – 11.00	5	380	38	3	
11.00 – 12.00	6	760	76	3	
12.00 – 13.00	2	360	36	3	
13.00 – 14.00	5	640	64	3	
14.00 – 15.00	1	80	8	3	
15.00 – 16.00	2	60	6	3	
16.00 – 17.00	2	100	10	3	
17.00 – 18.00	3	180	18	3	
18.00 – 19.00	3	100	10	3	
19.00 – 20.00	3	90	9	3	
20.00 – 21.00	3	140	14	3	
21.00 – 22.00	4	360	36	3	
22.00 – 00.00(7)	2	360	36	1	

Sources: Cardiff Airport; Review analysis

Notes

Airport and overall CAE T9 market:

(1) This is based on mayfly figures from Cardiff Airport
(2) Air passenger potential throughput inbound and outbound based on the type of aircraft expected to operate and assuming a high load factor. The load factor figures are commercially confidential and not available to this review.
(3) This forecast is based on the lower assumption of 10% of air passengers will use CAE T9. When this is taken into account the together with an expected modal split change towards CAE T9 of 10% of air passengers that is the basis of the estimated figure. Further research into market trends and a fuller economic forecast is required.
(4) The capacity per hour for seated passengers on the Optare vehicles is 220 (inbound and outbound total) with the existing seating /baggage rack layout. This is three buses per hour in each direction.

Inbound / Outbound passenger forecasts based on:

(5) Average loading derived from dividing passenger numbers by the number of vehicles. A profitable bus operation is achieved with 8 – 10 passengers per vehicle for the whole journey. All CAE T9 passengers pay a full flat fare which covers the whole journey even though they may only make part of it. There is a split of inbound and outbound passengers to be input into the forecast.
(6) These are all inbound passengers. The expected transfer to CAE T9 is expected to be low as there is no onward public transport from Cardiff Central bus/rail stations. Low loadings would therefore been assumed.
(7) These are all outbound passengers. A proportion may stay overnight in Cardiff or airport associated hotels. But this number would be the subject of further research. Low loadings would be the likely assumption. The 06.00 departures have to be served by CAE T9. The average bus loading column is included by way of completeness of analysis. Any forecast would be made on the basis of market research.

The analysis of potential summer passenger traffic should be included in the market research study. Pre 04.00 early morning and late evening passenger movements would not normally justify a frequency of 3 buses per hour. Cardiff Airport is however a diversionary airport and allowed to operate 24 hours a day. This could account for the number of night flights (London Heathrow has to close to air traffic between 00.00 and 06.00). Subject to market research on land side modes of travel an hourly service or a ‘meet the plane’ option could be considered at these times. Cardiff Airport should also be asked if there is a potential demand for employee transport. This however is also limited by a very limited / lack of local public transport into and out of Cardiff Central by bus /rail between 23.00 and 05.00.

It is difficult to quantify the likely number of leisure / charter travellers who might use the service as there is no previous years data or market research available. This data should be produced by the market research study.

Table 9 shows the spread of passengers between low (winter) and high (summer) seasons for travel

Table 9: Passenger pattern at Cardiff Airport 2013 (000 pax)					
January	39	)	July	134	)
February	48	) Winter	August	148	)
March	55	)	September	132	) Summer
April	55	)	October	100	)
May	108	)	November	60	)
June	128	)	December (estimate)	30	) Winter
Annual forecast 1,017,000 Annual estimate 1,037,000					

Source: Cardiff Airport

The passenger numbers in August to November are at start-up winter levels. These have been extrapolated to create an annual pattern for any year. This shows:

Winter 287,000 pax 27.6%

Summer 750,000 pax 72.4%

7.2 LONG TERM PASSENGER FORECAST

The extrapolated passenger figures for summer and winter CAE T9 assuming a constant modal split would be 16,304 passengers for one year (based on 2013).

When the air passenger forecast provided by Cardiff Airport is then applied to CE T9 passenger numbers the result is Table 10.

Table 10: Forecast Passenger (pax) rates of growth CAE T9 / Cardiff Airport

Cardiff Airport (CA) passenger forecast			**CAE T9 passenger forecast**		**Subsidy per passenger trip**	
Year	Cardiff Airport Passenger forecast (000's)	Cardiff Airport (CA) Passenger Forecast rate growth	CAE pax Based on CA rate/ growth(1)	CAE rate/ growth assuming 10% + additional (2)	Cardiff Airport rate/growth (1) £p	CA+ 10% rate/growth (2) £p
2013	1,037	-	116	-	(7.32) 4.04	-
2013/14	1,071	3.2	120	132	3.91	3.56
2014/15	1,155	7.8	129	141	3.64	3.33
2015/16	1,592	37.8	178	195	2.64	2.41
2016/17	1,663	4.5	186	204	2.53	2.30
2017/18	1,958	17.7	218	239	2.15	1.96

Source: Cardiff Airport; Review economic analysis

Notes

(1) This assumes that the same modal split will continue as at present and that it applies to charter/leisure and business markets.
(2) This derives from effective advertising/promotions leading to increased use of CAE i.e. modal split of land side mode changes in favour of CAE. This is a modest assumption; increases the percentage; reduces the subsidy per passenger trip.

A more in depth forecast will be required to assess modal split and the relationship between CAE T9 passenger growth and the Cardiff Airport forecasts.

However the general view in the airport express bus and airport / airline market is that the service will attract increasing numbers of leisure travellers. It will take time to make inroads into the existing drop-off, taxi and car to park segments but if the service is made permanent and with increased promotion both through advertising and word of mouth, then usage could grow.

There is an large group (average 600 passengers) of late night /early morning charter passenger arrivals between 22.00 and 03.00 on a typical day. Whether these passengers would use an hourly service is dependent on connecting public transport services available at Cardiff Central bus and rail stations within a reasonable waiting time. This is not the case at present.

Another important service provision is for both passenger segments for series of departures between 06.00 and 07.00 on summer mornings. These require an arrival time at Cardiff Airport of 04.00 to 05.00. This could, following market research and service trials, justify an earlier departure from Cardiff Bay and Cardiff Central Bus Station to arrive at Cardiff Airport in good time for the 06.00 flights out and possibly attract passengers from the 03.10 / 03.45 arrivals.

The daytime market from 08.00 to 20.00 is the more like to be a generator of passengers as there is frequent onward and feeder public transport available to the south east conurbation and to other parts of south Wales. Any further modal change and the level of convenience at the point of origin / destination will also be a consideration for passengers making the decision to use the CAE T9.

It should also be noted that if a large percentage of charter passengers were to use the CAE T9 its capacity would be inadequate. That is not likely to be a short term issue but should be considered in the medium (3 – 4 years) term.

It is also suggested that the usage of CAE T9 could increase at a faster rate than the annual forecast increase of scheduled flight passengers travelling through Cardiff Airport. There are several factors for believing this:

- The new Cityjet services have had a high media profile up to now and the Airport expects their services to be more attractive to business travellers than were Flybe's.
- There are better schedules on the Glasgow and Edinburgh flights. The Flybe operation was not providing suitable day return schedules in both directions particular in the Glasgow case. The price elasticity effect has stimulated demand on the Edinburgh service. This will naturally help these core domestic routes to grow in volume. This will be alongside passenger numbers travelling on KLM, Eastern, Aer Lingus, Citywing, Flybe, Germanwings and Vueling.
- In the short term these airlines are the most likely to provide users of the CAE T9.
- Taking Vueling as a particularly interesting example. Traffic on that operators Barcelona route had 40% originating in Spain while in its other three routes 20% of passengers began their return journey in Spain.
- As more flights serve Cardiff Airport, demand for the CAE T9 would be expected to increase (see above and Longer Term Sustainability section below)

The airlines are one of the best promotional resources for CAE T9. Means should be found through Cardiff Airport to promote the service – possibly on board.

7.3 FARES

Given the nature of the customer profile and the experience of business travellers that segment's expectation of a frequent, fast, express service into city centres all over the industrial world would lead them to the CAE T9 once they have become aware of the service.

The CAE T9 fare structure at present is shown in Table 8

In making comparisons with other airports CAE T9 the fare between Cardiff Airport and Cardiff Bus Station is about in the middle.

The basis of fares is not merely on distance travelled. Factors such as own price elasticity and cross price elasticity (e.g. between car parking and fuel v bus fare), market price segmentation (single / return; family tickets); what the market will bear; and service elasticity – quality; convenience; total journey time.

Example standard fares for are in Table 11

Table 11: Fares Comparisons (£p)		
Airport	Single Adult	Return Adult
Cardiff*	£5 (€7)	£8 (€10)
Bristol *	£7	£11
Edinburgh*	£4	£7
Dublin	£4.95 (€6)	£8.25 (€10)
London Heathrow		
Heathrow Xpress	£21	£34
Heathrow Connect	£9.90	£19.80
Underground Zone 6*	£5	

Source: Airports / Public Transport Operators

> *National Concessionary Travel Cards are usable in each country. Freedom Pass is available on the London Underground; not available to Heathrow on Heathrow Connect – only to Hayes Station.

As in all airports there are discounts for students and family tickets are available. The Bristol Flyer carries free of charge those passengers holding an England concessionary fares, over 60's pass (with a restriction that it cannot be used between 04.00 and 09.00 when there is an hourly service or there is the morning business traveller peak.

This is a premier service and the full fare standard of £5 / £8 (with advertised discounts) is payable no matter what the length of the journey – e.g. to intermediate hotels or Cardiff Bay. There are no and should not be any incremental fare stage basis.

The decision to provide free travel for Wales concessionary pass holders parallels the policy in England and should therefore be applied here – as it does bring in additional revenue. It will also avoid adverse comment.

7.4 TIMETABLE OPTIONS: CARDIFF AIRPORT EXPRESS T9

Meet the flight

The principle of operating a bus for each flight was once tried at the BEA terminal in central London up to the 1960's and the opening of the Underground Piccadilly Line to Hounslow West and then Heathrow Central. This had a dedicated bus guaranteed to meet each outbound flight. However as these vehicles departed every five minutes and were available to passengers on all flights then a convenient alternative was available for any flight. Adopting this principle in Cardiff is unlikely to be successful as no alternative is available if a departing outbound passenger arrives late at Cardiff Central. The general view expressed was "it is almost impossible to promote such a service simply and easily understood by potential customers". It is unlikely to attract much custom from the existing air passenger market. There was some support for this option in the winter months. However a counter argument was that the reputation for frequency, reliability and convenience built up in the summer market would be lost.

Although this option gained some support amongst respondents the overall view was that it would save some costs but that net revenue would fall and would damage the CAE T9 which was now beginning to become known as a standard pattern timetable (SPT) service. The SPT on Arriva trains Wales has been shown as a key element in its driving up passenger numbers. This operating principle may be appropriate as suggested below for late night arriving flights.

Conclusion: this is not a viable option and is not recommended to be taken forward for the primary CAE T9 operating period (04.00 – 22.00) – see below.

Fifteen minute service frequency
This is currently seen as not merited; "overkill" was a description given even in the summer months to serve the present demand level. By way of comparison the

original service frequency in Bristol was a coach every 30 minutes. As the airport expanded through a combination of low cost and charter airlines so passenger numbers increased and the Flyer increased its frequency at busier times giving the variable pattern of departures in current operation. This principle applied in Cardiff Airport is examined below.
Conclusion: the 15 minute frequency is not recommended.

<u>Twenty minute service</u>

The current service interval (frequency) at Bristol Airport is

06.00 – 14.30: 10 minutes
14.30 – 19.00: 15 minutes
19.00 – 00.00: 20 minutes
00.00 – 04.20: Hourly

Research carried out for this review at Bristol Airport showed as the airport has grown and the operating frequency has increased the passenger perception at Bristol Temple Meads railway station and at Bristol Bus Station is of a turn up and go service where the average waiting time is a few minutes during the day. A *Flyer* service A1 vehicle is on or approaching the Airport stand at all times during the day and at short waiting intervals up to midnight. Using the *Flyer* requires time planning by passengers at night and early morning.

Current CAE T9 twenty minute frequency: despite a lack of direct market research there was clearly sufficient experience and knowledge in the set up team to come to the compromise of 20 minutes which is a reasonable service interval for an airport the size of Cardiff. This is certainly the case for the summer timetable. The usage should be monitored carefully during the next year to identify more accurately the demand pattern.

A service interval of less than 20 minutes does not in the perception of business passengers constitute an airport express. Most would accept such a frequency for an airport of Cardiff's size with an average waiting time of 10 minutes. A normal service interval of 30 or hourly would fail in the same way as the train connection has only had moderate success because of its hourly service and the need to change modes at Rhoose station under uncomfortable conditions.

It is however a difficult balance. Even though there may not be many flights a 20-minute frequency is needed because of delays in aircraft movements, at baggage handling inbound or if a traveller misses the bus there is another within their 'comfort zone' particularly on outbound flights. In addition the current promotion and press commentary indicates this frequency and to change it after such a short time in operation can reduce passenger confidence in any future operation.

This balance is also between passengers needing to feel secure that they can get to the airport in time for check ion to their flight and providing a frequency which reflects the flight patterns. This given that the service has now started and any return to for example a ‘meet the flight’ format would lose the confidence of potential passengers There is also the more buoyant summer market to develop and that is the next stage in improving the effectiveness of the service.

Off peak service every 30 minutes / every hour

This is likely to be acceptable in the shoulder period and the off peak late night. There is an issue of several summer period charter flights arriving between 22.30 and 04.00 carrying around 600 passengers. This segment also faces a lack of frequent public transport to / from Cardiff central bus and railway stations between 22.00 and 05.30 (trains) and 19.00 and 07.00 (bus). However market research and a trial period during the summer could give a more robust decision basis.
The full cost saving implications for subsidy should also be assessed.

Conclusion on timetable options

- Retaining the 20 minute service interval with high quality operation (timekeeping, reliability) will grow the revenue than changing the frequency to meet particular aircraft (inbound and outbound). Aircraft are delayed and the air pattern may vary which will be confusing to passenger.

- The 04.00 – 06.00 services outbound are required to serve the four important 06.00 departure set of services. It is possible that a 30 minute service frequency does serve them but the start time of 04.10 is required as – it provides just enough time for check – in. These are: KLM scheduled flight to Amsterdam (50 passengers); three charter flight operated by Thomas Cook / Thompson (540 passengers). Further market research is required.

- A 15 minute service interval is not merited.

- Variable service interval in the off peak of 30 minutes or hourly..

- No action should be taken immediately to introduce a new service for the late night / early morning market segment (22.00 – 04.00). However, the current service should be reconsidered to meet two late night charter services on a meet the flight or hourly basis some robust market research has been undertaken.

- No timetables have been placed at the Airport, on the buses or at the Bus Station. Drivers commented on a lack of publicity as a big issue with customers. There is very little advertising at Cardiff Airport (7.5). Timetable leaflets are essential and should be introduced immediately.

- Traveline Cymru provides on-line and call-centre information sources on CAE T9 and connecting services.

7.5 INTERCHANGE CONNECTIONS

At Cardiff Airport

The current waiting facility for inbound passengers is poor. It consists of a bus shelter and no more. The information on CAE T9 is limited to a very small print timetable inside the shelter at a low level. For outbound passengers it is reasonably convenient. At Bristol the *Flyer* A1, Greyhound service to / from south Wales and the Bath Bus Company A4 *AirDecker* service to / from Bath and Keynsham deposits passengers outside the ground floor departures door. The departing inbound (to Bristol) *Flyer* and other airport services (e.g. Bath Bus Company A4 and the Greyhound services) stand are located outside the Arrivals area. Passengers are then able to remain in the dry, warm terminal to await their bus.

Prior to the complete redevelopment of the front of the terminal immediate action (which should have been carried out already) is required as follows:

- Clear signage from the Arrivals Hall to the CAE T9 service bus stop is not present. The poster at present is not sufficiently 'in your face'.
- Signs are needed on the arriving passengers' route to the exit – on both sides and overhead with a guidance line in CAE T9 livery along the floor.
- Repeater signs at the western end of the Arrivals Hall outside and along the route to the bus stop.
- A sign outside the Departures Hall exit should invite passengers to wait for their CAE T9 inside.
- An area next to the revolving doors would give a view of the arriving bus. A timetable dot matrix or real time (eventually) would indicate the next CAE T9 service. Currently This is the quality of interchange and of passenger experience required.
- The timetables in the bus shelter are out of date. These I understand are the responsibility of the VoGC.

The investment programme for the terminal building appears to be concentrating on the inside of the structure. The Airport has to take responsibility for providing a high quality passenger experience outside the terminal building also. This not only serves the CAE T9 customers but provides that image of Wales the Welsh Government is attempting to supply

A bus and train ticket booth inside the Airport could provide sales via credit card and through tickets to destinations beyond Cardiff by train, Greyhound, TrawsCymru and National Express. A process for payment of commission (12% was said to be fair for the third party seller) or a £5 / £8 add-on to the rail ticket price. This might be operated by NCP's desk in the Arrivals Hall as there is the bigger issue of connectivity. A train ticket machine might be installed (the cost estimate given was £35,000) and ATW should be asked to include the CAE T9 in the system.

At Cardiff Bus Station

Cardiff has the benefit of the Central Bus Station and Cardiff central railway station being adjacent. There is however little integration neither of services and operations nor of sufficient inter-modal signage or information.

When overseas visitors or Welsh travellers arrive at Cardiff Bus Station the information on interchange e.g. where other services are located is poor. An opportunity arises for improvement particularly as the spatial area involved is relatively small.

Cardiff Bus in justifying the bus box claimed that only 12% of bus passengers interchanged with other services and therefore they have never pressed for interchange information. The CAE T9 departure bay is ideal for connections with other bus or coach services and with trains. It is adjacent to the TrawsCymru service and the similar branding gives a clear integration perception.

Cardiff Central Railway Station

Information quality has improved slightly with an electronic timetable inside the railway station main booking hall. The Information Booth however has limited bus information and the CAE T9 is given as a second service to the airport rather than the first by Arriva Trains Wales (ATW) staff.

The initial poster based advertising campaign was comprehensive and any rail passenger could not have failed to see them. They were placed in a wide geographical range of stations and the CBS sites were paid for. ATW did raise a concern about competition legislation if they were seen to be giving preferential treatment to CAE T9 over any other service.

There remains a limited amount of bus information at the Arriva Trains Wales Information Bureau at Cardiff Central Station. Signage (overhead as at Bristol Temple Meads; Newcastle Airport to indicating the walking route to the CAE T9 stand is well- located in the bus station (D1); for rail / CAE T9 interchange. Overhead signs in both central underpasses and vinyl foot and eyelevel / overhead signage continuously en route.

ATW should be encouraged, as the Wales and Borders franchise holder, to display CAE T9 information prominently. They might make the point that as the CAE T9 was in competition with their train service via Rhoose. ATW shouldn't therefore as a business, advertise the CAE T9 as passenger / revenue abstraction may occur because the rail service has only a third of the CAE T9 frequency. However as the rail service is such a small proportion of their total income ATW was not averse to integration.

Advantage should be taken of a First Great Western initiative at Cardiff Railway Station. An 'ambassadors' scheme is to be created (as at Paddington Station) to provide help for train passengers of FGW and ATW) Interchange information on the CAE T9 could be included. Any competition regulation issues should be dealt with. Many are exaggerated by operators.

But the point here is one of integrated public transport for the travellers' benefit. This is a perfect opportunity for the Minister to show the Government's commitment to integrated public transport when two services both funded by subsidy should and will be directed to work together for the benefit of passengers (even if only in the new rail franchise). It also creates an opportunity to create the basis for integration which I have detailed in my response to Professor Kevin Morgan's review of the Metro governance being undertaken for the Minister.

<u>Joint ticketing</u>

Connecting feeder services into / from CAE T9 could be achieved through advertising / promoting the interchange facility at Cardiff Central Bus Station, with arrangements made more effective with through ticketing. There are opportunities to be developed with rail operators – Arriva Trains Wales, First Great Western, Cross Country Trains – and bus operators –Cardiff Bus, Stagecoach, National Express, NAT, First Cymru, Newport Bus, TrawsCymru, Greyhound (First Cymru) – in terms of advertised connections between both sets of services at Cardiff Central Bus Station.(See interchange section above).

Joint advertising of services on a reciprocal basis would help promote both sets of services.

One potential joint ticketing operation in particular was identified by both Cardiff Airport and First Cymru. The express service X30 operated between Cardiff and Newport by Newport Bus / Cardiff Bus and terminates at Cardiff Central Bus Station with an easy flat surface connection (although with improved signage) This service could help provide an inroad into the Newport – Cwmbran market. This market is currently split between Cardiff and Bristol airports

Third party ticket sales

There are several third party ticket outlets

7.6 ROUTE OPTIONS

Outbound via Cardiff Bay

The inbound route from Cardiff Airport to the city centre runs via Cardiff Bay. This has more market potential and avoids much of the slow moving urban road operation through Leckwith. The distance from the expressway standard southern distributor road the A 4232 Leckwith interchange to the bus station is about one third of the mileage via the bay. Vehicle speeds via the Bay and along the expressway are three times faster and with less wear and tear on the bus' mechanical parts. This results from a constant speed along the expressway with generally no congestion.

The total journey time between Cardiff Airport and Cardiff Central along both routes is approximately the same at 33 minutes on average on the route surveys in connection with this review. However the timetabled timing is 30 minutes via Leckwith and 38 minutes via Cardiff Bay while operational reliability is better along the route via Cardiff Bay with less vehicle wear.

However First Cymru has also given indicative figures which imply considerable extra cost. Operating inbound (as at present) and changing to outbound operations via the Bay would involve an extra 2.8 miles and 10 minutes extra running time per round trip. The round trip at present is 1h 15m. This change First Cymru estimate would take 1h 25m. This would be a very tight timetable and the extra bus (i.e. a fifth vehicle with the engineering spare referred to above)) would be required to operate throughout the day. It totals 160 extra miles per day; 1120 miles per week. First Cymru calculate total annual extra subsidy cost of approximately £70,000. This estimate should be discussed before a decision is made

Of course there are proposals for reducing frequency in the early morning and late evening which might compensate for some of that cost increase.

However the Bay is seen as Cardiff's second business district, the primary leisure, restaurant and cultural centre and the nation's democratic centre at the National Assembly for Wales. Its patronage potential is therefore significantly greater than the Leckwith route but at present pick-up / set-down is relatively low. The market research study following this review would need to estimate the extra revenue which could be generated.

One alternative is that the service in the ‘central area including Cardiff Bay and the city centre is an orbital service. It would therefore pick up and set down at the Red Dragon Centre for both inbound and outbound passengers. Passengers would then stay on the bus at Cardiff Central Bus Station and continue their journey to the Airport. This would mean an inbound journey time to the Bay of 30 minutes and a return journey via the Bus Station and Leckwith of 45 minutes. This would incur no extra subsidy cost but the market research would need to be clear on the passenger view of this extra time.

City centre orbital

Suggestions were made by some of those interviewed that the CAE T9 should travel around the bus box in central Cardiff via john Lewis, Churchill Way, Dumfries Place, Greyfriars Road and Westgate Street. This could open up the hotels and university markets in that area. Market research is required on this potential market segment to identify passenger numbers and potential additional revenue to cover the additional costs of an extra bus, daily crew, fuel and maintenance. This assumes the additional bus would be provided from the TrawsCymru fleet by WG An indicative extra subsidy cost to provide this is £60,000 per annum. There are operational implications set out below.

Evidence provided in respect of the BMIbaby branded service indicated that when that service traversed via Custom House Street, Marriott Hotel, Jury’s Inn (now the Park), Dumfries place, Greyfriars Road, the Hilton. Westgate Street, Angel / Crest (now Holiday Inn Express) hotels the demand did not justify the additional operating costs. If this is still correct the market research exercise should identify that.

One possibility is to provide a Cardiff Bus pass (for an additional price) to be included in the CAE T9 ticket for use on the *baycar* which is clearly branded and can link passengers at Custom House Street to the above areas

7.7 VEHICLE QUALITY / DESIGN

The expectation of air travellers in western Europe is that airport express vehicles will be relatively new, smartly turned out, cleaned regularly and in the main have seating capacity sufficient for them to sit down. The better door location is a front and middle section access. Not all airport–city centre buses have this facility as it is again a feature which reduces seating capacity. There is a delicate balance between seating luggage space and access: considerable market research is required into the passenger market for that particular airport; there is no ’one size fits all’ solution.

There also has to be luggage space but many business travellers now ‘travel light’ to avoid a delay in the baggage hall on arrival. Consequently for them overhead racks are as important as luggage racking.

Having examined the interiors of several airport services in UK and other EU states there is quite a variation in the internal vehicle layout. Some have considerable space for large items on floor based shelving racking but with no overhead racking; others are more of the layout on the CAE T9. The large luggage items tends to be with leisure travellers which of course forms Cardiff’s biggest overall market but which as seen above will take some time to attract.

The general view on the present Optare vehicles is:

- They are more than adequate for current and near future demand and with the smart seating present a high quality image of Wales – which is their subliminal function.
- No change should be made to the internal fittings as when a vehicle is changed with seats taken out and other fittings put in either it is a very expensive refurbishment (at up to £40,000 per bus)or it results in an unattractive finish where often items don’t fit properly. Even a simple refitting is expensive (at £10,000 per bus).
- There is a presumption that these vehicles would be returned to their original design function on the TrawsCymru network for which they were designed so changes would have to be made again.
- The Optare Tempos currently in place fulfil the requirements of the traveller which is the prime objective. New vehicles purpose built for the CAE T9 service would have two sets of exit doors and a baggage area reflective of the market research in relation to passenger type.

<u>Charge Card on board</u>

This would be a useful benefit for passengers who now buy most of their travel requirements using charge cards (credit, debit or purchasing cards). For corporate purchase this is almost mandatory within organisations as accounting control of employee travel becomes far more efficient (fewer expenses forms) and employees reduce the amounts of their own money involved in reimbursement. There are several mobile formats offered by banks e.g. Barclays Merchant Services and others.

A taxi operator referred the Review to London taxicabs where one of the major banks offers a card service. Drivers are then paid via their control company. In the case of the CAE T9 this would be paid directly to First Cymru Buses. Cards may be used on both Severn crossings although there was some ‘lack of enthusiasm’ from the operating company before their introduction.

In accounting terms this seems to have no obstacles. It would operate as with any other card system. Cardiff Airport and Cardiff city centre are both within strong signal areas. It was suggested that there was a technical problem to be overcome.

All Great Britain passenger train companies accept card payments. First Great Western for example does not have direct transmission but download the credit card machines at the final ‘clocking off’ point.

The availability of charge cards on board should be evaluated.

National Express do not currently have them aboard their coaches but at many bus station locations they have ticket offices were they are available.

They could be available via a ticket booth for both CAE T9 and onward travel or with an agent located in the airport arrivals hall. In both cases there is a cost attached. One suggestion made was to use the £40,000 earmarked for luggage racks to cover the estimated £35,000 for ATW to install a ticket machine for both trains and CAE T9 in the Arrivals Hall.

7.8 MANAGEMENT OF CARDIFF AIRPORT EXPRESS (T9)

It is also clear that no one organisation is responsible for the CAE T9 operation. It involves the Government, VoGC, First Cymru Buses, Cardiff Airport and Cardiff \City Council Bus Station. This is a hindrance to the effectiveness of the CAE T9. One person or organisation has to be given responsibility to fund and direct all public sector facilities and contracted private sector operations involved in the CAE T9.

The establishment of TrawsCymru Limited as a government owned company (as discussed between the Minister and Professor Stuart Cole) could provide the strategic route management within which this route should be. The separate branding of the airport service and of the long distance bus network is a separate issue.

7.9 BRANDING

<u>Options</u>

Two options present themselves

1. Cardiff Airport Express T9

   This brand has been in place for six months and rarely is a commercial brand changed once it has been exposed to the market. A consumer view may be formed that the product is to change markedly and that there are flaws in the current product. In the case of the CAE T9 the product is developing well and building up a reputation for quality and reliability. The market research to follow this review will provide a better scientific indicator of the CAE brand value but anecdotal evidence from passengers would indicate a high level of acceptance and satisfaction.

   A total of £63,178 has already been spent on presenting the brand and the service to the travelling public and this would have been wasted.

   The present mix of a member of the WG strategic family of services with three indicators of special service
   - The aircraft cartoon on the side is indicative of its function. This could be enhanced.
   - The route map clearly shows its route and its primary destinations (Cardiff Airport and Cardiff city centre).
   - Is an express service – limited stop and dedicated to the air passenger. The Welsh version *Bws Gwenallt* is a shuttle service. This may not have been intentional but it could be an optional name at some stage

   However for the present the current brand should remain.

2. Specific Airport Brand

   This would be a totally new brand but possibly using the same colours to represent Wales. The function of the bus link is to transport air passengers but also to be a part of promoting Wales' qualities to inbound travellers.

   Any brand change still has to create an image of an express service serving air passengers to Cardiff Airport. Were it to 'mimic' other airports, names such as *Flyer, Airlink, Airbus, Airport Express, Airport Shuttle, Aircoach* and others might be used.

   The important aspect of any brand is that it is obvious, simple, and does 'what it says on the tin'.

The second brand option with a highly distinctive brand is favoured by Cardiff Airport but marketing professionals have suggested keeping to Option 1 above for the time being as it has now become established. Had however time been available / taken before the start of the service then more ideas could have been considered.

But consideration should be given to a gradual brand change over the next two years if the service is to continue. *The Cardiff Airport Express / Bws Gwenol Maes Awyr Caerdydd* brand however being retained. *Bws Gwenol* could change to *Bws Cyflym* in the longer term.

7.10 LONG TERM SUSTAINABILITY – CONCLUSION

A business development process for the CAE T9 has been dealt with under the heading of what needs to changes to improve effectiveness. These actions relate to both the medium term and the long term.

The actions to be taken are shown ion the action plan section at the beginning of this review.

The future of the Cardiff Airport Express T9 service is directly linked to the future of Cardiff Airport. In the longer term the passenger levels on CAE T9 will relate to growth of passengers and flights operating through Cardiff Airport. As passenger business builds up for the airport then CAE T9 will grow and may become profitable.

To be profitable there has to be eight passengers on average over the whole of a bus route and on all departures over the day. This will cover all costs and prior to fuel price increases produced a profit margin of about 13% – 15% but currently this margin is under 5% . It was suggested by bus operators that a premium fare might reduce the passenger average to 5 / 6 but increased again to 8+ depending on the final concessionary fares payments formulae.

However under the present contract the additional revenue will accrue to the contract operators First Cymru who have taken the revenue risk. Depending on how the CAE T9 business level changes it would be a consideration to take the revenue risk into the Government’s hands. There could still be an independent bus operator (that is recommended) but contracted either through Cardiff Airport Limited or through a TrawsCymru Limited format (discussed above).

The long term here must be over the five year business plan based on considerations inherent in the purchase of Cardiff Airport by the Welsh Government.

If an airport is owned by a public body then it is in its interests to provide the required level of connectivity to / from the city centre it serves.

If the predictions based on the Airport's own growth rate or a higher growth rate in CAE T9 passengers is achieved then the CAE T9 is sustainable in the longer term.

The short to medium term (the next three to five years) future has been discussed above. If the airport achieves its passenger targets there is every need to maintain and possibly increase the frequency of the CAE T9.

If the airport greatly exceeds its targets and becomes a major focal airport as envisaged in the Western Gateway / Welsh Government proposals to the Airport Commission (chaired by Sir Howard Davies) then the WG should be evaluating a new rail link directly into the airport from either the South Wales Main Line or the Vale of Glamorgan line (the latter option has been strategically assessed and costed in a report by Professor Stuart Cole in 2012 for Legal & General Insurance Limited.

APPENDICES

APPENDIX 1

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APPENDIX 2

STOPPING PATTERN: LOCAL SERVICES

Legal issues

Any issues regarding competition regarding the transport industry e.g. route competition e.g. The Transport Act 1985, a firm of solicitors, suggested by First Cymru as specialising in transport related legal matters are Backhouse Jones , www.backhousejones@aol.com Telephone 01254 828300.

I mention the legal issue as it was raised by Cardiff Bus who pointed out that it operates commercial services along part of the route and could decide to take action against VoGC / WG inn respect of the CAE T9.(see below)

Current service provision

Local residents could use the premier airport express service CAE T9 so long as it does not dilute the primary objective of a *fast and frequent service between the city centre and Cardiff Airport*. However there are no examples of local and air passengers use the same service successfully for the airport service and it is not recommended here.

It is unlikely that it could be achieved in the medium term for several reasons:

- The demand level for airport customers is not yet clear. The summer schedules will bring more passengers and the patronage is intended to grow. If it does not the CAE T9 service will not be justified
- The demand pattern for capacity during the course of the day will be variable as it is at all other airports studied for this review – Bristol, Newcastle, Dublin and Edinburgh. There are some CAE T9 services which have 90% load factors and some with full and standing. Passengers are encouraged to await the next service but not all wish to and preference has to be given to airport customers. Performing a local service in addition to an airport service will reduce its effectiveness

- No information has been presented on local demand patterns. At exactly which stops is the local passenger demand? And if one stop is served will other demands follow?

- Cardiff Bus operates two commercial services along parts of the route. A half hourly interval service (route 96) operates from Culverhouse Cross to the Colcot roundabout (Five Mile Lane / Port Road / Barry Road) with 40% of passengers using concessionary bus passes. This operates Monday – Sunday during daytime and an evening hourly service is supported by VoGC. Route X91 operates every two hours along the same common length of route. It would not then be possible for the CAE T9 to compete (i.e. to pick up or set down passengers) along this section of route. If it did then Cardiff Bus would be entitled to take legal action for abstraction of passengers from a commercial service by a supported service. This is a consequence of the Transport Act 1985 and subsequent competition legislation.

- Carrying local residents could provide additional revenue through the CAE T9 also being a ‘local’ service. However on balance this is not recommended on commercial grounds as air passengers who have paid a premium fare may be lost (as in the case of Edinburgh and Dublin’s original airport services).

- They also have a concern for baggage security ‘Sensible’ business- based stops at key locations (e.g. Cardiff Bay and at hotels or within the central business district) are accepted as normal.

- Air passengers pay a premium fare for a direct service and experience has shown that their perception is any stop is for airport travellers exclusively and overall revenue could fall by serious numbers.

- They do not wish to see local stops served as this they perceive these as a delay in their journey. The tension element in air travel interchange times is apparent.

- The security of individual items of baggage has also been raised when it is located on racks at the door of the vehicle. There is considerable research on this issue.

- The fare would remain as standard (£5 / £7) for all passengers as it does for air passengers travelling e.g. to an hotel.

- The conditions of carriage of the CAE T9 (as shown on the timetable) indicates that passengers must be travelling either to or from Cardiff Airport but do not have to be Airport customers. This is to prevent reducing the effectiveness of the service.

- Air passengers respond negatively to being on a local stopping service Passenger numbers were not built up on Dublin and Edinburgh airport services when local stops were included. Other cities in Eastern Europe soon abandoned using local services for air travellers.

- Up to three extra stops could be made on the existing route without incurring additional running time according to First Cymru. This will depend on loadings at particular stops. There is an unacceptable risk on a service where the timetable is already tight and where First Cymru have already been supplied with an extra OptareTempo vehicle from the TrawsCymru fleet at an opportunity cost to the Welsh Government.

- While acceptance of concessionary passes for air travellers is a positive market decision it could further dilute this service when used by local travellers.

- Concessionary pass holders would not be deterred by the pricing policy but it would be a commercial mistake not to allow these passes to be used by Airport customers as at present

Conclusion on stopping services

From the CAE T9 viewpoint where this review sits there is a hope that the service will develop passenger numbers. There must have been some indicator or policy base. Consequently while not all buses will be full many will have good loadings. In commercial terms if the average loading on all vehicle journeys exceeds 8 fare paying passengers it will be profitable.

It is possible for the CAE T9 to call at up to a further three bus stops but only on the existing route and the current timetable is tight at 1h 15m for a round trip. The requirement of a sixth vehicle to be provided at WG expense indicates this No further stops could be included no matter what the local pressures might be If the CAE T9 is to remain a premier service.

In the view of Bus Users Cymru and bus operators the CAE T9 was an express service with few stops otherwise it became a local service. Even if additional stops were inserted above the existing hotel stops they must be 'sensible' and related to the Airport – for travellers, employees and other regular visitors.

Local demand appears to have a 'Turnham Green' / 'Cribyn' element where variations are made in the service and timed stops as a result of local pressure and which are then not used because the demand does not exist. It is a familiar occurrence in the provision of public transport in particular where public funding is involved.

If there was this level of demand that local pressure suggests. Cardiff Bus would have identified it and amended their local services accordingly

There is a clear risk of legal action if the CAE T9 competes with Cardiff Bus commercial services on the route. The terms of carriage issued with the timetable imply that all passengers must be destined for the Airport. (See Fares section above)

Creating a 'mixed' premier / local service would not be advisable and could not be recommended. Trying later to change one back into a premier service only, following a demand increase from airport customers would be probably worse than never offering a premier / local service.

However a critique and further analysis should be made in terms of current local services, suggested service pattern, stopping points and market demand data as a separate review exercise.

The policy decisions here are:

- Does the WG want a premier airport service or not?

- Is WG prepared to pay for it in subsidy.? This is particularly the case if Cardiff Airport passenger forecasts are fulfilled then subsidy could be reduced and may become a commercial service.