

# 2005 Mid Year Edition **Regional SKIES**

The newsletter covering BAE SYSTEMS Regional Aircraft activities

## Major European Carriers Re-Endorse BAe 146/AVRO RJ

The continued popularity and economic competitiveness of the BAe 146/Avro RJ among mainstream European carriers was demonstrated in dramatic fashion in April and May with the news that SN Brussels Airlines had recommitted to the Avro RJ and three of the airlines within the Lufthansa Regional grouping had recommitted to and expanded their quad jet fleets.



The potential absorption by Lufthansa of Swiss will mean that the combined Lufthansa BAe 146/Avro RJ fleet will total nearly 60 aircraft.

First off the blocks was Lufthansa Regional where Eurowings, Air Dolomiti and Lufthansa Cityline agreed transactions with Regional Aircraft covering 14 aircraft.

Eleven further BAe 146-300s are being added together with sale and leaseback extensions on three Avro RJ85s.

This 30 percent capacity increase makes the Lufthansa Regional grouping responsible for the world's largest BAe 146/Avro RJ fleet with 37 aircraft and with the impending absorption of Swiss by Lufthansa will add a further 19 Avro RJs to the numbers. It also underscores the

BAe 146/Avro RJ as the Lufthansa 100-seat regional jet of choice.

The three separate lease transactions cover:

- The addition of six further BAe 146-300s to the existing Eurowings fleet of eight BAe 146-200/300s. These aircraft are being delivered over a period from mid-April to the beginning of September.
- A further five BAe 136-300s are being leased to Air Dolomiti - which becomes a new BAe 146 operator. Deliveries of these aircraft commenced in April and will continue through to mid-September.
- The sale and leaseback by Regional Aircraft of three RJ85s operated by Lufthansa Cityline. These three aircraft bring the number of RJ85s on lease from Regional Aircraft to Lufthansa Cityline to 13. The remaining five aircraft out of the 18-strong fleet, are owned outright by the airline.

Lufthansa Regional is a new concept unveiled in October 2003 under which five airlines - Lufthansa Cityline, Eurowings, Augsburg Airways and Contact Air of Germany, plus Air Dolomiti of Italy - are members of a tighter cooperative group with a steering committee comprising the chiefs of the five airlines together with Werner Knorr as Senior Vice President, representing Lufthansa.

Paul Stirling, Senior Vice President Asset Management of Regional Aircraft said: "This continued endorsement of the BAe 146/Avro RJ by such a world-leading airline as Lufthansa and its regional carriers underscores our belief that the BAe 146/Avro RJ family will remain highly competitive for many years to come. We believe that new generation regional jets offer marginal improvements, and in some cases less capability, but with a large increase in financial risk and commitment at a time of considerable market uncertainty in the regional airline sector. We believe that for many airlines the best

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## Regional Aircraft Offers a Glimpse of the Support Future

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option very often is to do what Lufthansa has done and expand and re-commit with the BAe 146/Avro RJ."

Little over a month later came news of another major deal, this time with leading Belgian carrier SN Brussels Airlines which has agreed a sale and leaseback transaction with Regional Aircraft covering 23 of the airline's fleet of 26 Avro RJ85/100s.



Air Dolomiti becomes a new BAe 146 operator and Eurowings expands its BAe 146 fleet under the major Lufthansa Regional deal.

The deal will see Regional Aircraft acquire the aircraft in stages over the next five years with long-term leases back to SN Brussels Airlines. The RJ fleet will remain a core part of the SN Brussels fleet into the next decade.

The Avro RJ is the backbone of the SN Brussels Airlines regional fleet that, together with six BAe 146 aircraft, service an extensive European network linking the important Brussels hub with some 46 destinations in 19 countries.

Mr Michel Meyfroidt, Member of the Management Board of SN Brussels Airlines commented: "We undertook a deep study of the Avro RJ in comparison with the newer regional jets that were being offered to us. Our conclusion is that for SN Brussels Airlines the Avro product is the most cost-effective solution to meet our regional jet requirements. Our passengers love to fly in the aircraft and we are happy to continue operating it for many more years."

"This is yet another significant endorsement of the BAe 146/Avro RJ family," said Alan Fraser, Managing Director of Regional Aircraft. "Coming on top of the recent lease transactions with the airlines of Lufthansa Regional, this latest deal with SN Brussels Airlines ensures that the BAe 146/Avro RJ will remain in front-line service with key European carriers for many years to come."

**At two events in May, Regional Aircraft senior executives spelled out their vision of how the support business of Regional Aircraft is going to develop from one that continues to serve its legacy aircraft customers with excellence to one that combines that commitment with a growing expansion of service offerings to win new business and also to cover different third party aircraft types.**

Speaking to a media gathering on London on May 20, Rob Hearn, Customer Services Director spelled out that Regional Aircraft was almost unique in the market in being able to provide the lease and management of aircraft with an Integrated Support Package.

This support offering extends to spares, logistics and flight hour packages, spares pool access, technical services, maintenance planning, technical records and customer training.

Sales of these combined support products were growing, he said, and it was no surprise that regional airlines with their focus on cutting costs in the face of severe competition from the Low Cost Carriers were turning more to outside organisations to provide these specialist support services.

Hearn added that it was therefore Regional Aircraft's strategy to leverage its skills into new support offerings and to grow organically into adjacent markets. This is already starting to happen through response to customer demands and the first example is the design and certification by Regional Aircraft of a QAR installation on the Dash 8 Q400 in response to a request from FlyBe (see details elsewhere in Regional Skies.)

This will develop into an increase in the proportion of business won by Regional Aircraft on 3rd party aircraft. Existing customers are now being canvassed to ascertain their interest in Regional Aircraft taking on more work from them to cover non

BAE Systems aircraft types, including such areas as flight hour support agreements and technical records.

This strategy will serve not only to increase business, but to retain and develop Regional Aircraft's core capabilities which, in turn, will help to continuously improve the quality of support on Regional Aircraft's products and to 3rd party aircraft.

Earlier in the month, Ian Cockerton, Regional Aircraft's Head of Marketing gave a tantalising glimpse of the longer-term future in a paper delivered at the Airline Purchasing Expo in London. Entitled "The changing role of the OEM" Cockerton argues that OEMs have to change in order to compete to provide the sort of service levels that airlines now expect and which they are able to purchase on the open market from independent support organisations.

Historically, aircraft OEMs have struggled to deliver the level of aftermarket support service the airlines have demanded resulting in the OEMs steadily losing aftermarket business to independent service providers who were more agile and responsive. Times are changing however, and, as in other industries, the importance of the aftermarket to both customers and their own futures is now well understood and the OEMs are restructuring to deliver the products and services the market now demands.

If the OEMs can continue these improvements in aftermarket performance and offer a competitive, flexible service the broader long-term relationships with the customers will follow, and progressively they will win back business lost to the independents through a variety of different strategies, particularly through delivering Integrated Support Solutions. This, Cockerton argues, is a great opportunity for the future and particularly in the regional airline sector.

For a copy of Ian Cockerton's paper please contact (ian.cockerton@baesystems.com)



Rob Hearn

The immediate and longer term support strategies being followed by Regional Aircraft were spelled out by Rob Hearn and Ian Cockerton in May.



Ian Cockerton

## West Air Sweden Leases Another ATP Freighter to Bring Fleet to 13 Aircraft...



West Air Sweden and Emerald Airways both operate ATP Freighters on European networks.

**Regional Aircraft's programme for the conversion of passenger ATP turboprops into freighters equipped with the Large Freight Door (LFD) continues to gather momentum. Launch customer West Air Sweden recently signed a lease for its fourth LFD ATPF and this aircraft was delivered to the airline from the Romaero conversion facility in Baneasa, Bucharest in April.**

Following this delivery West Air Sweden is now installing its own E Class bulk freight interior ready for entry into service later this summer. This will bring the West Air Sweden ATPF fleet to 13 aircraft (nine bulk loaded E Class freighters without the LFD and four LFD versions).

## ...As Emerald Airways Starts E-Class Operations

**Meanwhile UK airline, Emerald Airways is now operating an ATP freighter equipped with its own certificated E-Class interior. This aircraft is being offered to the regional air cargo market in Europe. Emerald is the largest regional freight operator in Europe with a fleet of 11 Shorts SD360 freighters operated alongside 11 BAe 748s and ATPs operated in both the cargo and passenger roles.**

There is also growing interest in North America where Regional Aircraft is an active member of the Regional Air Cargo Carriers Association (RACCA). In particular, Regional Aircraft is supportive of the RACCA initiative with the FAA to get the payload limit for Part 135 operators increased from the current 7,500lbs to 18,000lbs.

As Nigel Benson, Director Sales for Regional Aircraft explained: "There are a growing number of Part 135 operators who fly for the major integrators and we see further demand for these carriers to be allowed to fly up to 18,000lbs or 8 tonnes payload which is why we are supportive of RACCA's efforts."

BAE Systems' own E-Class design is nearing certification and with that completed, the company anticipates announcement of further ATPF customers.

## Aircraft Trading and Management Services Places Two More Airbus A320s

**The successful and growing BAE Systems Aircraft Trading and Management Services team has scored another win with the placement on operating lease of two Airbus A320s with leading UK charter and scheduled carrier Monarch Airlines.**

This placement comes only a few months after the team won the mandate from a consortium of European banks and investors confirming their position as one of the leading aircraft remarketing and lease management organisations in the world.

The team provides remarketing, lease management, asset administration and advisory services to third party owners and lessors of commercial aircraft. It currently manages some 75 aircraft on behalf of third party owners/lessors. Aircraft types successfully remarketed and managed include the Airbus A320 family, Airbus A300-600s, Avro RJs, Boeing 737s and Boeing 757s.



Another success for the BAE Systems Aircraft Trading and Management Services team as Monarch sign leases for a further two Airbus A320s.

## Atlantic Airways, Romavia and Asian Spirit Take on More BAe 146s

**In addition to the SN Brussels and Lufthansa Regional transactions, three more airlines have added BAe 146s to their fleets in the first half of 2005.**

Atlantic Airways of the Faroe Islands has leased one BAe 146-200 from Regional Aircraft to add to the three Series 200 it already operates on scheduled international flights linking the Faroes with Copenhagen, Billund, Reykjavik, Aberdeen and Stavanger. Seasonal flights are also carried out to Oslo and London.

The need for the fourth aircraft is that the airline has increased frequencies considerably to Copenhagen, Billund and London and widened its involvement in charter operations in support of the oil industry.

The BAe 146 is particularly well-suited to the difficult approach and short runway at Vagar Airport in the Faroes and Atlantic Airways started operations with an initial BAe 146-200 in March 1988. Over the years the BAe 146 fleet has grown as the airline has expanded operations and on the back of the BAe 146 the

airline has been consistently profitable over the past ten years.

Also in Europe, Regional Aircraft has continued its steady penetration of the growing regional airline market in Central and Eastern Europe with the lease of a BAe 146-200 to Romavia of Romania.

This lease builds upon recent successes for the BAe 146 in the region. In Bulgaria, Hemus Air operates three BAe 146s and in Albania, Albanian Airlines also flies three BAe 146s.

Romavia is fully owned by the Romanian State and commenced operations in 1991. As well as operating chartered and scheduled passenger flights to destinations such as Casablanca and Malta, Romavia also performs state and governmental flights for the Romanian Presidency and Government. The BAe 146 is configured with 84 seats and will be used for regional charter flights from Romania.

In the Asia-Pacific region, Asian Spirit of the Philippines has chosen the BAe 146 as its first

jet equipment with a lease deal for two Series 100s and two Series 200s. Delivery of the first Series 100 took place in late January with the second to follow later this year. The two Series 200s will follow in 2006.

Asian Spirit previously transacted with Regional Aircraft in late 2003 for two ATP regional turboprops. As part of this new BAe 146 deal, the airline has the right to return the in-service ATP upon the delivery of the fourth BAe 146 in 2006. However, Asian Spirit is happy with the performance, reliability and economics of the ATP and may decide to continue its leasing.

The ATP has provided valuable service to the airline and built up traffic as it replaced a proportion of older 60-seat Japanese built YS-11 turboprops. The arrival of the BAe 146s will accelerate this process and provide a competitive response to other airlines with high frequency, cost-effective BAe 146s. The BAe 146 also has the potential to serve smaller airfields to provide new jet services.

## First BAe 146 Airtanker in Conversion

**Regional Aircraft and a team of international companies that are working to develop an airtanker version of the BAe 146, have started the conversion of the first aircraft.**

This follows the flight trials of a BAe 146-100 in September 2004 in which Regional Aircraft worked with Tronos Canada Inc., an owner, lessor and MRO of BAe 146s and Minden Air Corporation, an established airtanker converter and operator. A series of flights demonstrated the capabilities of the aircraft to members of the fire-fighting operator community in the Western USA, as well as representatives of the US Department of Agriculture Forest Service and Bureau of Land Management.

The trials were designed to show the suitability of the BAe 146 family for this very demanding operation as an airtanker and they were extremely successful. A total of nine sorties were flown from Minden Air's base in Nevada using an instrumented and ballasted aircraft. The aircraft was flown on typical firefighting flight profiles to demonstrate the performance and handling in this environment and to gather the resulting loads data.

Now Regional Aircraft has forged a collaborative venture with Tronos Canada, Inc., which has provided the first BAe 146 - a Series 200 - for conversion. Also part of the collaborative team is Minden Air, which is working to develop the Supplemental Type



Another role for the versatile BAe 146 - aerial firefighting.

Certificate (STC) with support from J2 Engineering, which is providing the detailed design and engineering conversion expertise. The conversion programme is being performed by Minden Air and work started at Minden, Nevada in January 2005.

Under this programme Regional Aircraft - as OEM for the aircraft - is providing engineering data packs and technical support to the conversion and will provide in-service support to the operation. Initially Tronos will provide aircraft from its portfolio. However, it is anticipated that as the programme develops some aircraft could be sourced from the older

aircraft within the Regional Aircraft leasing portfolio.

The first aircraft is scheduled to be completed and flown in 2005, with testing and approvals cleared prior to entering service early in the 2006 US fire season. Regional Aircraft and Tronos have identified further aircraft that can be made available for conversion.

Whilst the BAe 146 Airtanker is being developed initially for the US market, the aircraft will offer a capable and economic solution to large-scale firefighting requirements worldwide.



Asian Spirit and Romavia are new customers for the BAe 146, while Atlantic Airways has added to its fleet that it has operated successfully for 17 years.

## July 2005 - Dedicated Operator's Conference for Customer Chief Pilots Called

**Regional Aircraft is to hold two Operator's Conferences at Woodford on July 21 and August 23 for customer Chief Pilots which will be dedicated to a detailed explanation and update of the new Flight Crew Operating Manual (FCOM) and Aircraft Flight Manual (AFM) for the BAe 146/Avro RJ.**

After considerable investment in finance, time and expertise Regional Aircraft is close to rolling out a single 'global' AFM to replace the myriad previous AFMs that have evolved over the years with different variants of the aircraft. The revised structure, content and format of the new AFM will improve the document consistent with changing regulatory requirements and intended use.

However, the new AFM will not be the primary source of information on the flight deck; that role is taken by the new FCOM, which is intended to replace the Manufacturers Operations Manual (MOM).

Regional Aircraft believe that both the AFM and FCOM will be 'benchmark' publications for the aviation industry, Regional Aircraft believes. Both documents have been written by pilots for pilots and feature extensive use of colour illustrations and photographs for improved clarity. All current AFMs and MOMs have been reviewed and rationalised and the consolidated information is being put into the new publishing system. The first completed parts of the new AFM and FCOM have now started the approval process.

The FCOM has been created to provide the framework for a JAR OPS Operations Manual Part B, thereby offering customers a cost effective 'off the shelf' solution to a potentially expensive and burdensome requirement. Customised services specific to operators' requirements will also be offered.

FCOM will be the first of Regional Aircraft's publications to be made available via the Internet through a standard pdf format accessed through the Customer Portal. Printed copy and CD formats will also be available.

There will be a phased delivery of the new manuals, starting in early 2006 and Regional Aircraft will shortly be contacting customers to agree a delivery plan to ensure a smooth transition to the new manuals.

## Jetstream 32 Sales/Leases Leap Ahead



Jetstream 32s continue to prove popular in a variety of roles across the world.

Regional Aircraft completed a successful year in 2004 placing 25 Jetstreams and is now well on its way to meeting its 2005 goal of 30 aircraft transactions with the following new deals announced in May.

All these transactions from a wide variety of customers in different parts of the world and for a variety of uses, emphasise the versatility of the aircraft.

Among the transactions are:

- **Proflight** of Zambia, has become a new Jetstream 32 customer with the purchase of one aircraft (824) that was delivered in May. Established in 1991, Proflight has been flying an all piston fleet using Piper Chieftains for its tourist schedules in the safari industry. The addition of a new shareholder last year prompted the formation of Proflight Commuter Services, a turbine scheduled operation. While a number of aircraft types were evaluated, the Jetstream 32 was selected for its operating economics. The 19-seater was refurbished at Corporate Flight Management in Smyrna, Tennessee.

"Proflight's Jetstream 32 will be the first of its type in Zambia, and we hope that we will see more J32s in Central Africa soon", said Tony Irwin of Proflight.

- **Tamir Aviation**, the first Israeli operator of the Jetstream, has bought and accepted a Jetstream 32 (860) in May. The 19-seater is being used by Tamir for both domestic and short distance overseas flights.

- **Vertical Aviation**, a company based in Sanford, Florida, operating a fleet of helicopters, is growing its fixed wing fleet with a fourth Jetstream 32 (895). Last year Vertical Aviation contracted with Regional Aircraft for three Jetstream 32s. The company which specializes in helicopter research, design and manufacturing, operates charter flights for oil companies in Colombia and Venezuela.
- **Direktflyg** of Sweden has again expanded its Jetstream fleet contracting recently for three more aircraft (854, 855, 857) that were delivered in April. An operator of eight Jetstream 32s, the airline also purchased four of its fleet (841, 844, 846, 848) in early 2005.
- **Eastern Airways** of the UK agreed to purchase three of its leased Jetstream 32s (842, 845, 847). The Humberside-based airline operates a fleet of 13 Jetstream 41s and 12 of the smaller Jetstream 31/32 aircraft on an extensive network and is the largest fleet operator of Jetstreams outside of the United States.
- **Kystfly**, a 100% owner of Coast Air of Norway, has accepted a Jetstream 32 (856) and contracted for a second aircraft (864) for delivery in May. Established in 1975 Coast Air flies four Jetstreams for small charter groups.
- **O'Connor Airlines** of South Australia has purchased the three Jetstream 32EPs (851, 853, 859) that it has operated for a number of years and which it uses on scheduled routes from its base Mt Gambier to Adelaide and Melbourne and from Adelaide to the industrial centre of Whyalla.

- **SARPA** (Servicios Aereos Panamericanos S.A.) of Colombia received two Jetstream 32s in May (849, 905) and will take delivery of a third aircraft (870) in October. For over 25 years SARPA has enjoyed exclusive helicopter charter arrangements with the oil industry in Medellin, Colombia and today SARPA operates from five satellite locations offering both fixed wing and helicopters. Besides the oil contracts SARPA has branched out to serve other industries in the country and already has five Jetstreams in its fleet.
- **Corporate Flight Management** (CFM) of Smyrna, Tennessee is leasing an additional Jetstream 32 (862) to fly a US Government contract for the Federal Aviation Administration based out of Atlantic City, New Jersey. The aircraft is configured with 14 airliner seats.

CFM also recently reached agreement with BAE Systems to lease purchase another Jetstream 32 (874) in 12-seat configuration. Scheduled for delivery in October, CFM plans to lease and sell the aircraft to a Christian music group called the "Newsboys". The aircraft will be used to transport the group and its instruments throughout the southeastern United States while on tour.

Operating a total of 18 aircraft, including eight Jetstreams, Corporate Flight Management is the largest Jetstream fleet operator outside the airline environment offering a variety of corporate shuttle services.

## Jetstream 41 Remarketing Campaign Launched at RAA Convention

For many years the Jetstream 41 leasing portfolio has been very stable with aircraft operating on a long-term basis with a number of carriers. However, this is set to change with a number of aircraft coming back off-lease during 2005. Therefore, Regional Aircraft used its participation at this year's RAA Convention in May to launch a Jetstream 41 remarketing campaign.

Several of these cost-effective 29-seaters are available for customer inspection at Regional Aircraft Services, a fully operational JAA/FAA approved repair station located at Mesaba's 126,000 square-foot hangar facility in Hebron, KY, close to Cincinnati Airport. During the convention interested parties were taken to see the aircraft.

Strong market interest is expected for the aircraft in its traditional passenger role and this was emphasised with the announcement in May that South African Airlink has agreed lease extensions on two of its 15-strong Jetstream 41 fleet (msn 41034, 42035).

However, recognising the ample supply of '30-seaters' already in the marketplace, Regional Aircraft is broadening its marketing activities.

Among these is a study of the aircraft a freighter. Given the continued market interest in freighters with a payload of 7,500 lbs, Regional Aircraft is assessing the market interest in the 8,000lbs payload Jetstream 41 in the E Class freighter role and looking at the capability of the aircraft for such a conversion.

Also, with a potential supply opportunity now assured, Regional Aircraft is actively engaged in a number of studies for the Jetstream 41 as a Multi Mission Surveillance Aircraft, building upon its in-service record in this role with the Hong Kong Government Flying Service. The aircraft offers vastly superior range and speed than comparably priced new aircraft and the benign duty cycle in the MPA role means that 40 years service duty can be offered before a life extension. It is a low cost, high-performance package with a choice of mission systems to suit role and budget.

Currently, two mission systems are on offer - the Selex Seaspray 7000E radar and Titan 385EO turret and the Telephonics RDR-1500B radar and FSI Star Safire, both designed to meet emerging opportunities worldwide.



One of the Jetstream 41s now available at Cincinnati



The Jetstream 41 could make a very cost-effective turboprop freighter

## Growing Success of Regional Aircraft's 3rd Party Engineering

Regional Aircraft has won significant new design engineering work on both commercial and military aircraft from third party companies. This new work on the Airbus A380, Airbus A400M and the Lockheed Martin F-35, together with growing involvement in Unmanned Air Vehicles adds to the existing substantial workload on Nimrod MRA4.

The new design work won by Regional Aircraft includes:

- **Airbus** - Regional Aircraft is providing specialist engineering expertise to Airbus UK on a range of aircraft including the A380, A400M and also continuing work on the A320 family and A340. This specialist work includes systems engineering and safety engineering, fuel systems, fuel systems

design analysis, certification and compliance reports. Regional Aircraft's comprehensive large transport aircraft design expertise is also being used on the development of the A400M cabin interior and for certification work;

- **Lockheed Martin F-35 (JSF)** - working under contract to BAE Systems Air Systems, Regional Aircraft is involved in detailed design of the composite structure. A design team is currently based at Samlesbury, Lancashire, for this purpose and a satellite design office is to be established at Regional Aircraft's Woodford facility, near Manchester.
- **Unmanned Air Vehicles (UAVs)** - Regional Aircraft's certification experience and approvals, its whole aircraft design capability and its ability to integrate equipment and sensors, is proving to be of interest to

companies and consortia that are developing UAVs and Regional Aircraft is involved in a number of programmes.

Regional Aircraft's continuing and substantial design engineering work on the Nimrod MRA4 covers the airframe design and systems engineering, together with flight test support for the two development aircraft including ground vibration test to provide flutter clearance.

In total, third party engineering business is worth £20 million a year to Regional Aircraft and the company is seeking further opportunities to increase the portfolio and value of third party business.

## New Jetspares and Macro Business Announced as Regional Aircraft Looks to Extend Service to Other Aircraft Types



The Spares Logistics Centre at Weybridge is the nerve centre of Regional Aircraft's spares distribution service.



**Regional Aircraft has won new business worth in excess of \$30 million for its JetSpares and MACRO rotatable 'spares by the hour' businesses.**

JetSpares applies to the BAe 146/Avro RJ and MACRO (Material and Component Repair and Overhaul) is a similar programme for the Jetstream 31/32/41 and ATP aircraft. Both are individually customised support programmes, designed to allow an airline to concentrate on its operations while Regional Aircraft takes care of spares inventory, logistics and repairs. The priority is to keep the airline's business running smoothly by providing a first-class spares support service at a fixed monthly cost.

Regional Aircraft is an acknowledged leader in providing such flight hour spares support agreements and has accumulated in excess of 2.5 million flight hours on all its programmes. It is now investigating the potential of extending this provision to cover other aircraft types.

The new business is:

- **National Jet Systems (NJS)** of Australia has signed a three-year contract covering 17 aircraft (16 BAe 146 and 1 Avro RJ). This

programme provides for the flexibility that NJS requires as it operates aircraft for Qantas Jetlink and Australia air Express as well as for its own service requirements;

- **CityJet** of Ireland has added an additional three BAe 146 aircraft to its current JetSpares programme. This takes the number of BAe 146s in the CityJet fleet that is supported by JetSpares to 17 aircraft. These three aircraft were previously supported through a competing organisation;
- **Asian Spirit** of the Philippines has signed a five-year JetSpares contract covering its planned fleet of four BAe 146s that are in the process of being delivered during 2005/6. This is in addition to the MACRO contract already in place for Asian Spirit's ATP;
- **South African Airlink** has signed a three-year MACRO contract covering its fleet of 15 Jetstream 41 turboprops;
- **Malmö Aviation** of Sweden has signed a five-year extension to its existing JetSpares contract covering its fleet of nine Avro RJ100s;
- **Atlantic Airways** of the Faroe Islands has added one BAe 146 on to JetSpares.

In the past six months Regional Aircraft has added an additional 31 aircraft to its JetSpares programme, bringing the total of BAe 146/Avro RJs covered by the programme to 153 aircraft worldwide.

The addition of the 15 SA Airlink Jetstream 41s to the MACRO programme brings the total of Jetstream and ATP aircraft on to the programme at 83 aircraft with ten operators.

Rob Hearn, Customer Services Director said today: "Both our JetSpares and MACRO programmes are highly regarded in the market. Existing customers are happy to extend contracts, new customers among the operator community are being won over, and new leasing business won by our asset management team invariably brings with it either a JetSpares or MACRO follow-up contract.

"In addition, we are now starting to look at the possibility of extending our JetSpares and MACRO offerings to our customers' other aircraft types."

## Regional Aircraft Considers Re-Launch of BAe 146QT Freighter Conversion Programme

**Regional Aircraft is currently assessing the viability of a BAe 146QT (Quiet Trader) passenger to freighter conversion re-launch programme and aims to make a firm decision by the end of 2005.**

A competitive conversion price is the key to the success of the programme and up to eight engineering centres/conversion houses are being assessed for both kit manufacture and aircraft conversions, all have been asked to provide outline pricing details at this stage.

An initial 10 aircraft programme is being considered. Following further discussions it is envisaged that the selection of a conversion centre and a firm contract award will be made by the turn of the year with the first aircraft to be placed into the programme early in 2006.

The BAe 146 is fully capable of meeting Stage 4 noise limits so a long life as a freighter is assured. The programme would be suitable for older BAe 146 aircraft where residual values have reached a level to support the economics of conversion. It is anticipated that there will be a good demand for a 10-12 tonne freighter over the coming years.

Regional Aircraft worked closely with Pemco World Air Services of Dothan, Alabama in the



The BAe 146QT has proven to be a very strong, robust conversion

mid-late 1980s under which Pemco designed a large upward-opening freight door 131 inches wide by 76 inches high in the rear fuselage. This door installation together with the roller floor and associated cargo handling equipment was built into around 30 BAe 146QT (Quiet Trader) freighters that were converted as new-build aircraft off the production line.

Most of these aircraft remain in service, the biggest operators being TNT Express, which uses a large fleet on an intensive overnight

freight network across Europe and Australian Air Express, which uses three aircraft on overnight operations linking key centres in eastern and southern Australia.

Pemco has elected not to pursue its own BAe 146QT conversion programme, but is working closely with Regional Aircraft to ensure a smooth transfer of knowledge and expertise.

## Regional Aircraft Upgrades BAe 146 Flightdeck With LCD Flight Panel Modification

**Regional Aircraft is introducing a significant upgrade to earlier-build analogue BAe 146 aircraft with a modification package to replace some electromechanical indicators on the flight deck with LCD Flat Panel electronic displays.**

This modification has been designed and engineered by Regional Aircraft in response to customer demand. The upgrade package also will be certificated and then installed by Regional Aircraft working parties - a totally comprehensive modification offering which is now available to BAe 146 operators.

The first customers for this modification are Eurowings of Germany and Air Dolomiti of Italy - both part of the Lufthansa Regional concept. The selection of this upgrade by these Lufthansa Regional airlines builds upon the recently-announced major lease deal by the carriers for 11 BAe 146-300s.

A total of nine BAe 146s will be converted for the two airlines (three Air Dolomiti and six Eurowings), all of which are pre-EFIS build standard. It is anticipated that certification of the system will be completed by the end of 2005, with installations commencing in 2006.

In engineering this modification Regional Aircraft has selected the Collins FPI-920 as the recommended display unit. This is an established product, which has been retrofitted to many 'classic' aircraft including the Boeing 727, 747-200, DC-8, DC-9, DC-10 and Airbus A300B.

The installation involves the removal of the two electromechanical Attitude Director Indicators (ADI), two electromechanical Horizontal Situation Indicators (HSI) and two Radio Altitude Indicators (RAI) from the Captain's and First Officer's panels and installation of five ATI Flat Panel Instruments (FPI) in their place, primarily using adaptor wiring harnesses.

The resulting installation will be a simpler, more cost-effective and modern alternative to the 'Phase 1' Cathode Ray Tube (CRT) EFIS which was fitted to new-build BAe 146s between 1989-1994, but never retrofitted to in-service aircraft.

As a result some 138 earlier BAe 146 aircraft are eligible to be upgraded to the new LCD Flat Panel Display standard and the Modifications Group at Prestwick are pursuing further upgrade opportunities with customers.

From an operational point of view this new installation provides most of the advantages of EFIS, but at a fraction of the cost. It will provide a modern flight deck with a significant improvement in unscheduled removal rates over electromechanical units and CRT EFIS displays anticipated.

## More Modifications Business Won by Regional Aircraft...



Malmö Aviation is just one of the customers who have chosen Regional Aircraft for its modifications upgrades.

**Regional Aircraft continues to win significant new orders for its modifications business. In the past nine months 11 operators/organisations have placed orders valued in excess of £4 million covering a wide range of both mandatory and enhancement modifications.**

Currently, the modifications team receives over 800 customer modification requests a year. The team provides a total service package that embraces everything from initial evaluation of

the design concept through to full co-ordination of design modifications, project and vendor management, kit procurement and delivery and the capability to offer repair and inspection parties and JAR145 embodiment working parties.

During the past nine months orders have been won from the following customers:

- **National Jet Systems** - has placed orders for the Class D to Class C fire extinguishing system in the BAe 146 baggage bay and also EGPWS;
- **TNT Express** - has ordered the Class D to Class C fire extinguishing system for its fleet of 19 BAe-200/300QTs. TNT has also ordered EGPWS and Mode S;
- **Eurowings** - placed orders for EGPWS, ELT and Mode S and Regional Aircraft working parties completed the fitment of these at Nuremberg;
- **Swiss** - continues to place significant orders with Regional Aircraft for its Avro RJ fleet. Its latest purchases have been the GNLU 910 Flight Management System, Mode S and DFGC upgrades;
- **Ansett Engineering Services** - has ordered

EGPWS, the Class D to Class C modification and the Enhanced Security Flight Deck Doors for BAe 146-300s;

- **SN Brussels** - has placed further orders for Mode S and RVSM packages for its Avro RJ/BAe 146 fleet;
- **Malmö Aviation** - has ordered Mode S, ELTs and GPS antennas for its Avro RJ fleet;
- **Bahrain Defence Force** - has ordered GNLU 910 and EGPWS;
- **British Airways CitiExpress** - has ordered Mode S;
- **Lufthansa Cityline** - has ordered QARs and DFGC upgrades;
- **Emerald Airways** - placed orders for ATP conversions and mandatory modifications

It is this total service package that is proving very attractive to customers, many of whom possess significant design and engineering skills in their own right. The fact that so much of this business has been won against stiff competition from other providers is a testimony to the regard in which the customer community holds the product integrity and competitiveness of the Regional Aircraft solutions.

## RACAP Starts to Deliver Reduced Costs for Operators

**Regional Aircraft 's RACAP programme is starting to deliver measurable operating cost reductions to customer airlines across both the BAe 146/Avro RJ and ATP fleets.**

RACAP was started 18 months ago with a remit to work with operators, vendors and the airworthiness authorities to identify operating cost savings ideas that could be investigated and then rolled out to all fleet operators on a continual basis.

Various working groups have been established and notable airline participants have included Air Wisconsin, Mesaba, NJS, Swiss, Cityjet, FlyBe, British Airways CitiExpress and TNT representing the BAe 146/RJ operator community and West Air Sweden, SATA and Emerald Airways from the ATP operators.

A wide range of issues have been investigated ranging from overhaul costs and overhaul practices of specific components to life extensions of items; from revisions of manuals and simplification of inspection practices to new procedures to improve component reliability and the introduction of cost-saving modifications linked to improved despatch reliability.



The support of customers and vendors has been crucial to getting success out of RACAP

To date, some \$11 million of accumulated benefit across the operator community has been identified with just under half of that delivered in cost benefits. Specifically, on the BAe 146/Avro RJ around a \$6 per flight hour cost reduction has been delivered with a further \$10 per flight hour identified. On the ATP a \$10 per flight hour cost reduction has been identified and delivered.

Another key cost reduction driver is the maintenance optimisation programme for both the BAe 146/RJ and the ATP. Under this

programme maintenance intervals will be revised to reflect in-service experience. Maintenance data is being collected from a cross-section of the world fleet to create a reliability database. The revised maintenance programme will be presented to the Maintenance Review Board for operator and airworthiness authorities approval. Approval of the revised programme in January 2006 will deliver direct maintenance costs reductions of up to \$16 per flying hour on the BAe 146 and \$9 for the Avro RJ and up to \$33 per flying hour for the ATP.

Rob Hearn, Customer Services Director of Regional Aircraft said: " Operators are now beginning to see the benefits of the RACAP initiative. They realise that it is a long-term project, but one that is now starting to deliver and we are grateful to those participating for their invaluable help. The support of our vendors is also important as we aim to ensure the long-term competitiveness of our products."

## ...As Supplemental Type Certificate For Quick Access Recorder Installation on Dash 8 Q400 is Received

**Building on its already successful modifications business Regional Aircraft has achieved its first modification/upgrade success on third-party aircraft with the award of a Supplemental Type Certificate (STC) for the installation of a Quick Access Recorder (QAR) on the Bombardier Dash 8 Q400 turboprop airliner.**

Leading UK carrier FlyBe approached Regional Aircraft for an engineering solution covering a QAR installation across its fleet of both BAe 146s and Dash 8 Q400s.

Using lean management processes sponsored through Scottish Enterprise, Regional Aircraft was able to engineer a highly cost-effective solution to meet FlyBe's needs. As a result, FlyBe has ordered modification kits from Regional Aircraft for its Dash 8 Q400 fleet and the certificated installation is now available to all operators of Dash 8 Q400s.

Under JAR airworthiness requirements European airlines have had to implement a Flight Data Monitoring (FDM) programme from 1 January, 2005. This requires Flight Data Recorder (FDR) data to be downloaded on a regular basis as part of an accident prevention and flight safety programme. However, current FDR download procedures can take many hours, rendering them an impractical solution.

The Regional Aircraft solution is to use off-the-shelf equipment supplied by Avionica, a Miami-based aviation data-analysis company (Avionica miniQAR and secureLink wireless router) and integrate it into the Dash 8 Q400. This modification allows the seamless transfer of FDR data without human intervention. The data is initially saved in the miniQAR. Once the aircraft is on the ground the data is transferred to the secureLink wireless router and transmitted via antenna to the airline's computer network.

The miniQAR can collect and store up to 3,000 hours of flight data, is cost-effective, reliable, easy to install and lightweight. The secureLink wireless router can transfer half an hour of flight data per second.

For the BAe 146, Regional Aircraft offers both the miniQAR from Avionica and also a QAR from L3 to give a choice of QAR supplier to meet customers' fleet requirements.

Building on this Dash 8 Q400 success, Regional Aircraft is now looking to work closely with current customers to engineer modification and upgrade solutions through STCs to other regional and mainline airliner types that are operated alongside BAE Systems aircraft.

## Life Extension Programme Introduced for BAe 146



Still going strong, the Atmospheric Research Aircraft was the first BAe 146 produced in 1981. The Life Extension Programme will ensure an even longer service life for this and many airline operator's aircraft.

**Regional Aircraft is introducing a Life Extension Programme for the BAe 146 that will enable the aircraft to continue operations for at least another 20 years.**

This follows a sustained programme of investment by Regional Aircraft and analysis of the past 20 years of actual aircraft operations to derive improved maintenance programmes that validate continued operation.

The result is the introduction of two new manuals, one covering corrosion - the Corrosion Protection and Control Programme (CPCP), and one covering fatigue - the Supplementary Structural Inspections Document (SSID).

The CPCP is invoked when a particular airframe reaches 20 calendar years and introduces an indefinite calendar life.

The SSID is introduced when a particular airframe reaches 40,000-50,000 cycles (weight and variant dependent). The life is extended to 60,000 cycles immediately and will be further extended to 80,000 cycles shortly.

The Systems Life Extension work for both the BAe 146 and Avro RJ is complete. All BAe 146 and RJ systems (5,500 individual components) have been analysed by Regional Aircraft in collaboration with major equipment suppliers and the Civil Aviation Authority. The result is that with the exception of a few parts the life of all components has been de-limited.

Commenting on the BAe 146 Life Extension Programme, Rob Hearn, Customer Service Director said: " We have invested heavily in this programme as we believe there is a strong future for the BAe 146 as do our vendors, and we thank them for their support. We have also had tremendous support from operators of the BAe 146 lead fleet aircraft. Our overall aim is to keep the aircraft current and competitive and to ensure that operating costs are kept to a minimum. We look forward to a further 20 years of BAe 146 operations".

## 25 Years On - Jetstream 31 Still Going Strong

**The 25th anniversary of the first flight of the development Jetstream 31 regional turboprop took place on March 28th and was commemorated at Prestwick from where the aircraft first flew with a gathering of those involved on that fateful day a quarter of a century ago.**

At 1220 on Friday March 28, 1980 the Jetstream 31 (registered G-JSSD) took to the air for the first time. This aircraft had been converted from an earlier Handley-Page-built Jetstream 1 machine over an 18-month period, the major difference being the installation of the Garrett (now Honeywell) TPE 331-10 engines coupled to the new Dowty Rotol four-blade composite propeller.

The first flight was under the command of Test Pilot Len Houston and his team consisted of Co-Pilot Angus McVitie, Flight Test Engineer Andrew Eldred and Bob Baker, Engineering Test Pilot from the Garrett Engine Company, USA.

Lasting 1 hour 35 minutes, the first flight was entirely successful and included a broad spectrum of handling trials over varying speed ranges and also an air-to-air photographic sortie was carried out.

G-JSSD then undertook the bulk of the certification test flight programme, being joined by the first all-new built Jetstream 31 (G-TALL) in March 1982. Together these aircraft completed the flight test programme and the aircraft was awarded its Certificate of Airworthiness in late 1982.

Between 1982 and 1993 a total of 382 Jetstreams were built comprising 221 Jetstream 31s and 161 Jetstream 32s, with a more powerful engine (Garrett TPE-331-12).

The vast majority of these aircraft were delivered into the then buoyant 19-seat US market where the regional carriers were starting to affiliate with the Majors, feeding passengers into the main airport hubs. In this role the Jetstream 31 proved popular with its airliner build standards, stand-up headroom and passenger amenity.

As traffic growth on these routes outstripped the 19-seat aircraft, the Jetstream fleet in the USA was largely displaced from this role, but the aircraft has readily found new applications as executive or corporate shuttle aircraft. However, the 19-seat airline role continues with aircraft still in service in the USA and Canada, in Europe and Australasia and into new markets in Latin America and the Caribbean.



Still going strong. Len Houston celebrates the 25th anniversary of the development Jetstream 31 at Prestwick.

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