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MARCH 2019 | VOLUME 21 ISSUE 1

North American focus

AAR, AJW Technique, GA Telesis, Ontic, STS

Practice of evolution
A330 maintenance

Kazakh can do
Air Astana

Reputable regional
GE Aviation CF34

(photo: AJW Technique)

Canadian phoenix

AVIATION WEEK MRO AMERICAS

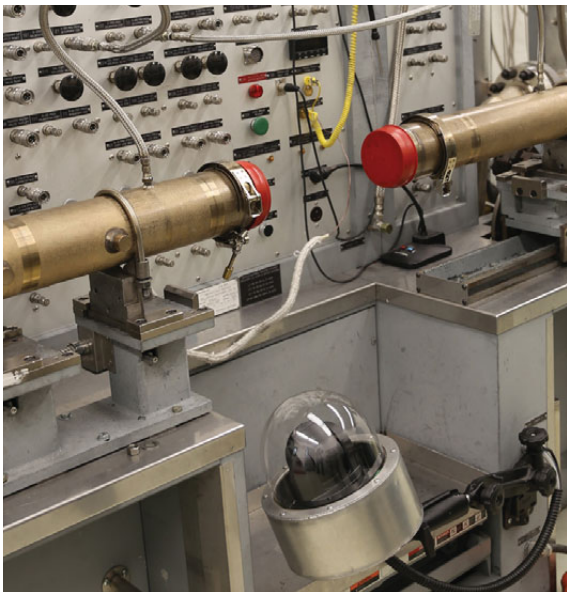
AJW Technique has emerged from the ashes of Air Canada Technical Services and Aveos to become an important player in the international component repair market. **Ian Harbison** reports from Montreal

After Air Canada entered bankruptcy protection in 2003, it was acquired the following year by ACE Aviation Holdings, which split Air Canada Technical Services (ACTS) from the airline business. In September 2008, after ACE Aviation sold 70% of the company to two US private equity funds, ACTS was rebranded as Aveos. Unfortunately, this was followed by a financial crisis and a downturn in the airline industry. While it staggered on for a while, the company was eventually liquidated in March 2012.

AJW Group (then called A J Walter Aviation) had been working with Aveos for several years, both as a customer for component repairs and as a partner, managing inventory. After evaluating whether bits of Aveos could be salvaged, the company ended up taking itover completely in September 2012. Gavin Simmonds, General Manager (and, since July 2017, COO of AJW Group), says this mainly consisted of the building, next to Montréal–Pierre Elliott Trudeau International Airport, without fixtures and fittings. Financial help was provided by the Fonds de solidarité FTQ, a development capital fund that invests in small- and medium-sized businesses, while the International Association of Machinists and Aerospace Workers (IAMAW), a necessary partner in highly unionised Quebec, were very supportive, he adds.

Faced with an empty 15,420m^2 building, there was an opportunity to maximise efficiency from the very start. There are no offices (even sales, buying and HR are on the shop floor) and a very flat management structure, from Simmonds to Allan Pennycuick, Vice President Operations, and Guy Salicco, Production Manager (the first two employees of the company) and then to the individual leaders of the 14 production cells. Salicco and the lead IAMAW representative work closely and in cooperation with each other.

While the 6S philosophy is used, along with PDCA (plan-do-check-act) for continuous improvement, technicians have been given responsibility with accountability, and produce many of the ideas for efficiency gains. This is important as the facility is



(left) Pressures of 700psi in the pneumatic test cell require strict safety precaution. The item to be tested is mounted in the gap between pipes and monitored by the remote camera in the bubble underneath

(right) Quantum Control lists the product qualifications of every technician. It also lists if they have Expert status, enabling less experienced technicians to quickly find someone to consult if they have a problem *(photos: Ian Harbison)*

not just the North American base for AJW Group; it is now the centralised hub for the company's global repair supply chain, supporting more than 1,000 airlines, aircraft manufacturers and component OEMs, especially those operators with PBH contracts.

Those most closely involved with the Montreal facility include local Air Transat, Delta and Allegiant Air, the latter signing a fixed price Airbus A320 component repair agreement last year covering 150 part numbers, supporting up to 100 aircraft by 2020.

The facility can now process 20,000 units a year across nearly 5,600 separate Airbus and Boeing part number lines, as well as supporting ATR, Bombardier and Embraer repairs. These cover 80% of ATA chapters and include avionics, hydraulics/pneumatics, fuel, galley, IDG, electromechanical and lighting, and safety, while support functions include calibration and rework/cleaning.

Calibration services are provided for Lockheed Martin Commercial Engine Solutions, originally Kelly Aviation Center and another spin off from the liquidation of Aveos. AJW Technique has recently started overhauling GE Aviation CF34 main fuel control units for Air Wisconsin under a sub-contract from Lockheed.

The rework section contains lathes, mills and drills, and can manufacture its own tooling for new products. There are two paint booths as well. A centralised, semi-automatic cleaning facility is used across a wide range of components.

As the facility is at the heart of the Montreal aerospace cluster, which includes names such as Bombardier, Pratt & Whitney, Rolls Royce and Lockheed Martin, there are enough specialist shops in the area that can be contracted to carry out work that requires expensive processes, such as NDT, grinding, plating or rewinding of electric motors. This extends to chemical management, where an outside contractor, Justrite, works across several of the big companies, and so has better purchasing power. It carries out checks every two weeks and replenishes where necessary, including time expired items. Once material has been removed, it is the responsibility for each cell to manage its stocks through weekly checks.

Conversely, AJW Technique was awarded Transport Canada Civil Aviation (TCCA) Design Authorised Organisation (DAO) status in June 2013, enabling it to develop its own repair schemes.

DAO status was part of a fast ramp up, the company having received TCCA Approved Maintenance Organisation status (also recognised by the FAA) in February 2013 (allowing it to start work on its first component, a coffee maker), and a month later becoming an EASA Part-145 Approved Maintenance Organisation.

Since that time, there has been about $8 million of investment to steadily extend capabilities and increase part number coverage.

For example, in late 2017, a new fully automated test stand for pilot and crew oxygen masks was added. This simulates flight critical emergency oxygen flows so that common failure modes, such as leaks and regulator malfunctions, can be rectified. In fact, test equipment is one of the major capital expenditure items.

The safety section handles slides for the Airbus A320 Family, A330, Boeing 767 and the Embraer E-Jet family, handling over 80 units a month. One of its major contracts is management of slides for the Air Canada fleet, with discussions being held to add the 787. ▶

(left) Work in progress is shown on large screens in each cell

(right) Where it all started – a coffee maker was the first component to be overhauled *(photos: Ian Harbison)*

Slides have fixed service intervals, and one of the management requirements for Air Canada is to ensure that slides are delivered with the maximum service life available. Equally, careful monitoring allows them to be removed close to the limit. A daily plan is received from the airline, with deliveries up to a month in advance.

Under an agreement signed three years ago, the cell has been nominated by UTC Aerospace Systems (now Collins Aerospace) as the designated maintenance centre for the Boeing 767 latch release and snubbing actuators on the escape slide door assembly.

This is part of a strategy of working directly with the product's OEM to negotiate competitive sub-assembly pricing combined with full technical support. This ensures CMM conformance as well as repeatable quality. Simmonds says these relationships are extremely important, and agreements are in place with 12 OEMs, including Honeywell, Liebherr, Rockwell Collins (now Collins Aerospace), Safran and Thales. He adds that, while they can offer unmatchable prices for the repair of some components, they recognise that companies like AJW Technique needed support for older aircraft, especially as production rates ramp up for new models.

This cell also provides a good example of the technicians developing their own solutions. While a slide deploys in a few seconds, it is hard physical work to repack them, so there is a 15 minute warm up session at the start of each shift, and a combination of carpet and foam underlay across the area to reduce strain on the knees. Similarly, the galley section recently underwent a reorganisation to accommodate oven repairs, the new layout being designed by the staff for improved efficiency.

Acting as a global hub, supply chain management is extremely important. There are good air links through the nearby airport and the facility is approved by TCCA as an Authorised Cargo Representative, simplifying customs and security procedures. In addition to custom designed boxes slides and IDGs, foam is injected into other packages to protect the contents in transit. Demand is such that up to six pallets can be dispatched in a day to AJW Group in the UK.

Working in the opposite direction, the facility recently accepted two slides from Singapore, the customer taking advantage of a five day turnaround time for overhaul to meet their programme requirements.

The facility runs the Quantum Control MRO and Logistics software from Component Control to track repairs and overhauls down to the component level but, typically, the internal IT department developed analytic tools that allow every component to be tracked and traced throughout the work process, including the personnel working on the item, with work in progress shown on large screens in each cell. At a management level, the status of work can be analysed by each customer and the system also provides financial forecasts.

Another tool lists the product qualifications of every technician – most are trained across a range of components and can be shifted to meet workload requirements. It also lists if they have Expert status, enabling less experienced technicians to quickly find someone to consult if they have a problem.

Forecast

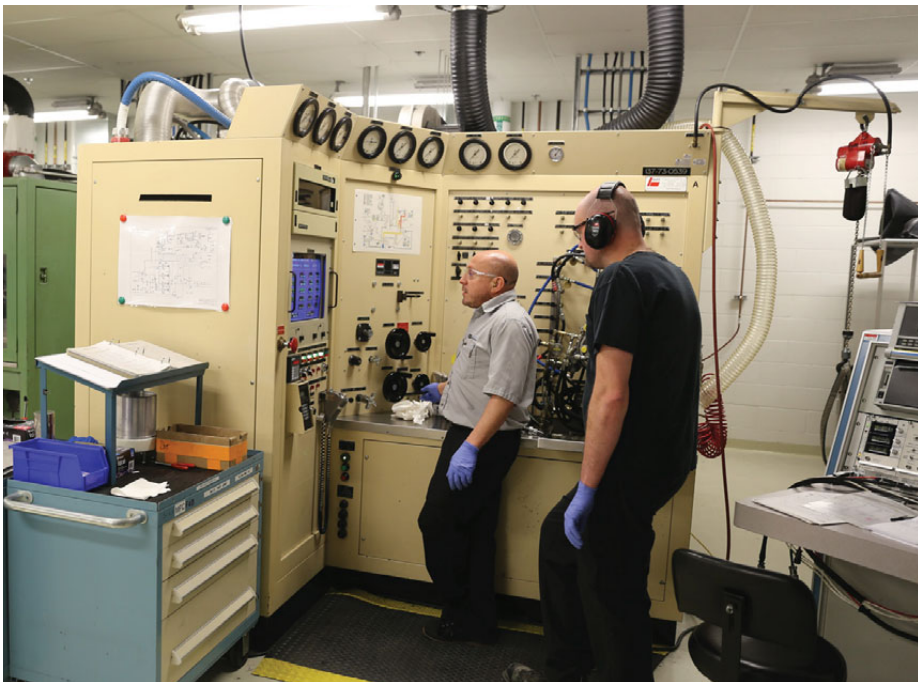
Simmonds notes that the company is a global player, with approvals from Brazil, China, Hong Kong, Indonesia, Japan and Singapore, in addition to EASA and TCCA/FAA. However, the worldwide MRO market varies. PBH is more popular in Europe than North America, where

low cost start-ups tend to look for a one stop shop solution. Asia is mixed, with South Korea pushing to become more self-sufficient in MRO.

However, the shop is full with good forward loading. About 65% of the work is for AJW Group and is not limited to customer repairs. The parent has just purchased a Boeing 777-200LR airframe for teardown, and all components will be recertified in Montreal.

He says the plan is to double throughput in the next three years, although no increase in footprint will be required. The facility currently runs a day shift and a small evening shift so the increase will be accommodated by extending working hours and increasing staff. The latter could be a challenge, comments Salicco. The company has invested in training but the local airlines are always on the lookout for technicians.

Given the unhappy history of the facility, it is significant that 70% of the current staff worked for Aveos. Clearly, there is faith in the new owner. ■



The fuel systems test rig – equipment of this sort requires significant investment *(photo: Ian Harbison)*