



Wales Selected as the First GP7000 Shop

Facility will service GP7200® engines

The Engine Alliance has named the GE Services facility in Wales as the first in a network of worldwide service centers for the new GP7200 engine that will power the Airbus A380®. The GE Wales facility was chosen for its extensive experience with GE90® engine work and for the geographic convenience it offers GP7200 customers.

“The Engine Alliance is unique because it can call on the best resources of both Pratt & Whitney and General Electric to support customers worldwide,” says Lloyd Thompson, former president of the Engine Alliance. “Our goal is to not only provide an excellent engine for the A380 but to back it up with reliable, cost-effective overhaul and repair.”

Karl Fessenden, managing director of GE Wales, says: “Wales selection as the OEM GP7200 overhaul shop is a true testament to the capabilities of the shop, as well as a

great opportunity for the shop going forward as it introduces this new product line. With our extensive experience with the GE90 architecture—a major building block and inspiration for the GP7200—we feel we will be able to bring world-class overhaul best practices to the table as we establish new capabilities. We are also already familiar with many of the GP7200 customers, which will help the Engine Alliance as we support the A380 customer base.”

In addition to the Wales shop, the Engine Alliance is working to incorporate other facilities into an approved worldwide network to manage aftermarket services for the GP7200 engines, as well as full maintenance, repair and overhaul work.

The Engine Alliance is a 50/50 joint venture between GE Transportation, Aircraft Engines and Pratt & Whitney. It was formed in 1996 to develop, manufacture, sell and support a family of engines for new high-capacity, long-range aircraft.



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An Outside Look—In: Borescoping

Aircraft engines rotate at very high speeds, extreme temperatures, pressures and in varied environments. Because of these stresses, engines must be inspected regularly. The borescope is one way this can be done without disassembling the engine. It permits inspections at scheduled intervals depending on the engine and customer program requirements.

Borescope inspections determine engine condition and performance over a period of time. Unscheduled borescope inspections are necessary when any other type of non-normal event occurs,

like bird ingestion, foreign object damage, or temperature, vibration or speed excesses. Issues found with engines as a result of a borescope inspection are the number one reason an engine may be removed from wing before a scheduled maintenance shop visit.

A lot of borescope equipment was derived from the medical industry. Main differences are in length, diameter, cost, measurement capabilities, and whether it's fixed or flexible. Inspectors look through a lens or at a screen to view what the scope is seeing. This can be done while the engine is usually still on wing. However, this inspection process is also common in shops, assembly and test environments.

There is still a lot of older equipment that is non-measurement capable but of very high quality. But, borescopes that offer measurement capabilities allow the inspector more confidence when determining damage sizes and allowable limits/out-of-service limits.

Newer types of equipment take videos or pictures of damage, make dimensional measurements and submit findings to customers or OEM engineering departments for evaluation.

The newest type of borescope is capable of boroblade blending. This is an on-wing repair done with a borescope equipped with a grinding tip to make repairs as it finds defects. Currently, this is available on CFM® and CF6® engines. As engines mature and this technology is more widely accepted, expect to see more of these on-wing repair technologies come to market.

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Staying in Step with FADEC Upgrades

CD-based training available for CFM customers

In order to simplify training methods for updating engine control software and maintain time on wing, CFM International® has developed a new CD-ROM-based program for customers. Working closely with the Working Together Team (WTT), CFM has prepared a comprehensive package to allow airlines and other customers to more easily reprogram their electronic engine controls with the engine still on wing. Currently, the training material is available for the CFM56-7 family, but similar systems for other CFM engines are in production.

Full Authority Digital Electronic Control (FADEC) is an integral part of every CFM56-7 engine. As updates become available, it's critical to get them installed on every engine in the fleet as quickly as possible. Due to the complex nature of the updates, customers sometimes experienced delays. So, the CFM Customer Support Team was looking for a way to



Exceeding Expectations Not Budgets

Workscoping keeps costs in line

As leasing aircraft and engines becomes more popular, operators are always looking for ways to spend as little as possible to maintain their engines and still meet minimum return requirements set by the lessors. Recently, the GE Wales facility worked with a major U.S. carrier and addressed this issue by customizing its engine overhaul workscope, a practice available at all GE service shops.

The idea behind this approach is to allow airlines and engine operators to have:

- Pricing schedules for the module/sub-module level
- Use of genuine OEM parts and repairs
- Access to GE's extensive stock of used, serviceable materials.

The benefit is to reduce material replacement costs while maintaining high OEM-material standards. This service will be very valuable to customers who lease engines and must manage lease requirements including maintenance reserves.

The above mentioned carrier is one of the first to take full advantage of this approach on one of its CFM56-3 engines. The engine shop visit was completed ahead of schedule and under budget, with extra EGT margin beyond the customer's expectation. This service contributed to the airline's ability to manage its overhaul repair costs, lease return conditions and cash flow.

Customizing engine overhaul workscope is available to other CFM56-3 operators worldwide and may be rolled out to other engine families in the future.



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help customers avoid delays and simplify the updates. The thing the team learned was the most cumbersome was not the actual process, but the importance of completing the steps in the exact order. The training CD ensures the process follows the correct chronological order to expedite and simplify the updates. The CD is programmed using interactive technology and allows the viewer to start and stop so they literally can follow the step-by-step process as they perform the engine software update.

There are several approved methods of electronic engine control programming but CFM recommends the use of Demo Systems LLC PDL-615 or PMAT2000. Both are self-contained portable field units for easy use. More than 100 of the CDs have been distributed to customers to date. CDs are available by contacting a CFM Customer Service representative.

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CWC PRODUCTIVITY TIP

Take advantage of time-saving tools on the CWC

Often, customers place repeat orders through the CWC. A tool is now in place that allows orders to be named and saved to facilitate easier reordering. In the example below, the CWC shows how a group of packings that are ordered frequently can be saved and then quickly identified in the future.

- > Spare parts
- > Buy
- > Save order
- > Name for future reference
- > Use previous order and select specified PO name for future ordering

To reuse PO, use this option.

The screenshot shows the CWC interface with several annotations:

- An arrow points to the "Use Previous Order" option with the text: "To reuse PO, use this option."
- An arrow points to the "Current Order" dropdown menu with the text: "Select from saved POs to place new order."
- An arrow points to the "Part Number" column in the table with the text: "For new order enter different PO number. To add a line item for an existing PO, enter that PO number."
- An arrow points to the "Order Name" field with the text: "Name the order for future reference."

| Line No. | Part Number | Qty | Unit Price | Ext. Price | Priority | Requested Ship Date (YYYY-MM-DD) |
|----------|-------------|-----|------------|------------|----------|----------------------------------|
| 1 | 2441 | 25 | \$1.44 | \$36.00 | Routine | 2004/10/31 |
| 2 | 2442 | 25 | \$1.70 | \$42.50 | Routine | 2004/10/31 |
| 3 | 2443 | 25 | \$1.93 | \$48.25 | Routine | 2004/10/31 |
| 4 | 2444 | 25 | \$1.50 | \$37.50 | Routine | 2004/10/31 |

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