

# A300-600 & A310 technical support providers

There are about 458 A300-600s & A310s in operation with airlines around the world. A survey of major technical support providers is given.

**T**his survey summarises the major aftermarket and technical support service providers for the A300-600/A310 family. It is grouped into seven sections covering the different categories of technical support offered by each of the providers:

- Engineering management and technical support (see table, page 29).
- Line and light maintenance (see table, page 30).
- Base maintenance (see table, page 30).
- Engine maintenance (see table, page 31).
- Spare engine support (see table, page 31).
- Rotables logistics (see table, page 32).
- Heavy components maintenance (see table, page 32).

In some cases, the providers of technical support are listed in most or all of the seven sections, and such organisations can loosely be referred to as

one-stop-shop service providers for the A300-600 and A310 families. This means that they provide most, if not all the technical support services that an operator would require, including: engineering management; line and light maintenance; base and heavy airframe checks; interior refurbishment; stripping and repainting; engine maintenance management; engine shop visits; repair; overhaul of major components; and rotatable inventory supply and management services. In addition to these, spare engine leasing support services are also provided.

## Third-party market share

The survey tables show that the providers able to offer a complete range of services for the A300-600 and A310 families include American Airlines, Air Canada Technical Services, Air France Industries, GAMCO, Lufthansa Technik, and THY Technic.

By far the largest proportion (52%) of A300-600/A310 airframe maintenance checks is undertaken in house by the maintenance department of the host airline operator.

According to the Aircraft & Fleet Analytical System (ACAS) database, which records actual maintenance contracts on an airframe-by-airframe contract basis, the remaining 48% are outsourced to third-party providers. Of these, the biggest provider of airframe-overhaul outsourcing 'touch labour' is ST Aviation Services (SASCO) of Singapore, which has 21% of all contracts awarded. This is followed by another ST Aero subsidiary, San Antonio Aerospace, located in Texas, which has 9% of the C-check market.

Lufthansa Technik, which has possibly the largest international maintenance and repair operations (MRO) network, covering most commercial aircraft types, is close behind, while other significant providers listed according to actual C check contracts logged in ACAS include, in descending order: TAP Maintenance & Engineering, Air Canada Technical Services (ACTS), GAMCO, China Airlines, Sabena Technics, THY Technic, JorAMCo, Gameco, Monarch Aircraft Engineering and Air France Industries.

With heavy checks (4C and intermediate layover (IL) checks), the ranking according to ACAS is slightly different. As before, most shop visits are undertaken in house by a maintenance department affiliated to the host operator. This accounts for 32% of heavy checks in this case, and is a lower proportion than for C checks.

The third-party provider with the highest ranking of contracts is, unsurprisingly, SASCO with 13%. This is followed closely by American Airlines with 12%. American still has the largest fleet of A300-600s in passenger service, and therefore possesses a significant in-house capability for the type.

In third place is ST Aero's San Antonio Aerospace TX airframe facility. In descending order of contracts awarded, the remaining rankings include (but are not limited to) the following third-party providers: Lufthansa Technik, Thai Airways International, GAMCO, TAP Maintenance & Engineering, ACTS, MASCO, Shanghai Airlines, China



*Leading providers of heavy airframe maintenance for the A300-600 and A310 are ST Aerospace, Lufthansa Technik, GAMCO and THY Technic.*

Airlines, Sabena Technics, THY Technic, JorAMCo, Monarch Aircraft Engineering, SIA Engineering Company, Air France Industries, and Egyptair Maintenance & Engineering.

The biggest recipient of third-party contracts for engine overhaul is Pratt & Whitney Engine Services' Cheshire Engine Center with 17% of all A300/A310 outsourced engine overhaul work. The same company's Asia Pacific operation, Eagle Services Asia in Singapore, is in second place with 14% of contracts. In third place are in-house contracts with engine operator maintenance departments, which account for 13% of engine shop visits.

Other engine overhaul contracts ranked in descending order include the following providers: MTU Maintenance Hannover, Lufthansa Technik, GE Caledonian, GE Engine Services, KLM Engineering & Maintenance, Alitalia Maintenance Systems, Mitsubishi Heavy Industries, Air France Industries, GAMCO, Air India, and GE Engine Services Wales.

It is also worth looking at the trends for maintenance of auxiliary power units (APUs). In this category, by far the largest single APU overhauler, with 58% of all business, is the original equipment manufacturer (OEM), Honeywell, which has overhaul facilities in Phoenix, Arizona, USA; Raunheim, Germany; and Singapore. Other significant players include Revima APU, Lufthansa Technik, THY Technic, TAP Maintenance & Engineering, Air France Industries, and Triumph Air Repair.

## Aftermarket perspectives

Importantly, as the OEM, Airbus still expects to be providing A300/A310

operators with assistance in the future, as its product-support department transitions to an in-service-only mode for the first time in its history, following the delivery of the last A300 in July 2007.

"This will be the first time that we continue to support an aircraft without a production organisation inside Airbus," says Doug Carlile, A300/A310 programme director customer services at Airbus.

Although the A300/A310 fleet will gradually decline in numbers, Airbus could be supporting the aircraft until 2050 according to some forecasts. Carlile believes that a more realistic expectation would be 35 years, however, as the normal length of service for the majority of the fleet. In short, he expects that more than 350 A300-600/A310s will still be in service in 10 years' time, and more than 200 by 2025. "We are learning how to keep the availability of spares and the knowledge," says Carlile.

On the subject of spares, it is fair to say that the distribution of the A300-600, A310 fleet is now very fragmented, but there is a viable customer base where extreme flexibility in support is vital to optimise operational cost efficiencies. Contract rates are still high however, as the re-certification cost of components is now approaching the fair market value. According to AJ Walter (AJW), an independent spares supplier, there have been, "no significant developments regarding the A300-600/A310 spares market recently, and AJW continues its support of the major MROs on an ad-hoc basis."

"Overall, the A300-600 and A310 market is not growing, but AJW is actively pursuing business for this type of aircraft and its comprehensive support platform will adjust to changing demand,

which is not expected to increase in the short or medium term," says Lexy Driver, spokesperson for AJW.

Regarding engine OEM support, Robin Salisbury at Pratt & Whitney explains that its global service partners provide a full suite of engine overhaul, part repair and replacement solutions, line maintenance and lease engines to support the PW4000 94-inch and JT9D engines powering A300 and A310 aircraft.

"These engines are overhauled at the company's two overhaul centres in Cheshire, Connecticut, USA and in Singapore. These overhaul centres are supported by a worldwide network of 18 part repair facilities, providing affordable, high-quality repairs," notes Salisbury.

Pratt & Whitney also repairs composite material components, particularly for nacelle parts. "We offer repairs for nacelle inlets and thrust reversers for PW4000 and JT9D configurations with exchange material available to support operators' needs," adds Salisbury.

In February 2006, FedEx selected Pratt & Whitney to provide an off-wing Fleet Management Program (FMP) as part of a 20-year exclusive contract for the operator's fleet of PW4000-94 engines.

The agreement includes the overhaul and repair of 135 PW4000 engines operating on FedEx's fleet of MD-11s, A300-600s and A310s, with the option to include any PW4000-equipped aircraft added to its fleet throughout the life of the contract. The engines will be maintained within P&W's global service partners' restoration and repair network.

In undertaking this contract, P&W will manage the performance of the PW4000 fleet using its advanced

## A300-600 & A310 ENGINEERING MANAGEMENT & TECHNICAL SUPPORT

	Outsourced engineering service	Maint records service	DOC & manuals manage	Maint prog manage	Reliability stats	AD/SB orders manage	Check planning	Config & IPC manage	Total tech support
Air Canada Technical Services (ACTS)	Yes	~	Yes	~	~	~	~	~	~
Air France Industries	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Airbus	~	~	Yes	~	Yes	~	~	Yes	~
American Airlines	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Avborne Heavy Maintenance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GAMCO	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HAECO	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SAA Technical	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sabena Technics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIA Engineering Company	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ST Aviation Services (SASCO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TAP M&E	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VEM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	~	Yes

## A300-600 &amp; A310 LINE &amp; LIGHT MAINTENANCE SUPPORT

	Maint operations control	AOG support	Line checks	A checks	Engine QEC changes	Engine changes	Landing gear changes	APU changes	Thrust reverser changes
Air Canada Technical Services (ACTS)	~	Yes	~	Yes	~	Yes	Yes	Yes	Yes
Air France Industries	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Air India	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Airbus	~	Yes	~	~	~	~	Yes	Yes	Yes
Alitalia Maintenance Systems	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ameco Beijing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
American Airlines	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Avtrade	~	Yes	~	~	~	~	~	~	~
GA Telesis	~	Yes	~	~	Yes	Yes	~	~	~
GAMCO	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GE Engine Services	~	~	~	~	Yes	Yes	~	~	~
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KLM Engineering & Maintenance	~	~	~	~	Yes	Yes	~	~	~
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SAA Technical	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sabena Technics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIA Engineering Company	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SR Technics	Yes	Yes	Yes	Yes	Yes	Yes	~	Yes	Yes
TAP M&E	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thai Airways	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
THY Technik	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
VEM	Yes	Yes	Yes	Yes	~	Yes	Yes	Yes	Yes

## A300-600 &amp; A310 BASE MAINTENANCE SUPPORT

	C checks	IL & D checks	Composites	Strip/paint	Interior refurb
Aeroframe Services	Yes	Yes	Yes	Yes	Yes
Air Canada Technical Services (ACTS)	Yes	Yes	Yes	Yes	Yes
Air France Industries	Yes	Yes	Yes	Yes	Yes
American Airlines	Yes	Yes	Yes	Yes	Yes
Avborne Heavy Maintenance	Yes	Yes	Yes	~	Yes
China Airlines	Yes	Yes	Yes	~	Yes
Egyptair	Yes	Yes	Yes	Yes	Yes
Emirates	Yes	Yes	Yes	Yes	Yes
GAMCO	Yes	Yes	Yes	Yes	Yes
Goodrich Aviation Services	Yes	Yes	Yes	Yes	Yes
HAECO	Yes	Yes	Yes	Yes	Yes
Japan Airlines International	Yes	Yes	Yes	Yes	Yes
JorAMCo	Yes	Yes	Yes	Yes	Yes
Korean Air	Yes	Yes	Yes	Yes	Yes
Kuwait Airways	Yes	Yes	~	~	Yes
MASCO	Yes	Yes	Yes	Yes	Yes
Monarch Aircraft Engineering	Yes	Yes	Yes	~	~
Olympic Airways Services	Yes	Yes	Yes	Yes	~
Sabena Technics	Yes	Yes	Yes	Yes	Yes
San Antonio Aerospace	Yes	Yes	Yes	Yes	Yes
SIA Engineering Co	Yes	Yes	Yes	Yes	Yes
ST Aviation Services	Yes	Yes	Yes	Yes	Yes
STARCO	Yes	Yes	Yes	Yes	Yes
TAP M&E	Yes	Yes	Yes	Yes	Yes
Thai Airways	Yes	Yes	Yes	Yes	Yes
THY Technik	Yes	Yes	Yes	Yes	Yes
VEM	Yes	~	~	Yes	Yes

diagnostics and engine management (ADEM) system, which is a web-based, automated tool.

Meanwhile, Jim Stump, GE Aircraft Engine's marketing spokesperson, explains that for the CF6-80A engines of A310s and the CF6-80C2 engines of A300-600s and A310s, GE Aviation Services offers diagnostic monitoring throughout the flight envelope, comprehensive overhaul and repair, component repair, accessory services, and on-wing support in the case of aircraft on ground (AOG) and other unscheduled needs.

Moreover, engine leasing and exchange programmes enable continued operations during downtime of an engine. GE Aviation Services also provides full spare parts support and access to the world's largest inventory of serviceable used parts and components.

To ensure maximum accessibility and minimum response time, facilities are located throughout the world. Further, GE Aviation Services' 'OnPoint' programme is based on flexible implementation of the service organisation's capabilities. GE stresses its commitment to continued support of the nearly 600 engines currently in service with 37 operators worldwide. To that end, GE is prepared to accommodate an anticipated 40% increase in shop visits over the next five years.

SR Technics is another leading independent provider of technical solutions, and offers engine maintenance, line and light maintenance support for

## A300-600 &amp; A310 ENGINE MAINTENANCE - CF6-80C2, JT9D-7R4 &amp; PW4000

	CF6-80A/ -80C2	JT9D-7R4	PW4000	Engine shop visits	On-wing engine maint	Parts repair schemes	Engine maint manage	Health monitor
Air Canada Technical Services (ACTS)	~	Yes	~	Yes	Yes	Yes	Yes	Yes
Air France Industries	Yes	~	~	Yes	Yes	Yes	Yes	Yes
Air India	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alitalia Maintenance Systems	Yes	~	~	Yes	Yes	Yes	Yes	Yes
Ameco Beijing	~	Yes	Yes	~	Yes	~	Yes	Yes
American Airlines	Yes	~	~	Yes	Yes	Yes	Yes	Yes
Bedek Aviation	~	Yes	~	Yes	Yes	Yes	Yes	Yes
China Airlines	Yes	~	Yes	Yes	Yes	~	Yes	Yes
CRMA	Yes	~	~	~	~	Yes	Yes	Yes
Eagle Services Asia	~	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Egyptair Maintenance & Engineering	~	~	Yes	Yes	Yes	Yes	Yes	Yes
GAMCO	Yes	~	~	~	Yes	Yes	Yes	Yes
GA Telesis	Yes	Yes	Yes	~	~	~	Yes	Yes
GE Engine Services	Yes	~	Yes	Yes	~	Yes	Yes	Yes
IASG	Yes	Yes	Yes	~	~	~	Yes	Yes
KLM Engineering & Maintenance	Yes	~	~	Yes	Yes	Yes	Yes	Yes
Korean Air	~	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kellstrom	Yes	Yes	Yes	~	~	~	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MTU Maintenance Hanover	Yes	~	~	Yes	Yes	Yes	Yes	Yes
P&W Engine Services	~	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SR Technics	~	~	Yes	Yes	Yes	Yes	Yes	Yes
Thai Airways	Yes	~	~	Yes	Yes	Yes	Yes	Yes
Total Engine Support	Yes	Yes	Yes	~	~	~	Yes	Yes
THY Technic	Yes	~	~	Yes	Yes	Yes	Yes	Yes
VEM	Yes	Yes	Yes	~	Yes	~	Yes	~

the A300-600 and A310 aircraft. To date more than 1,650 PW4000 engines (94-inch) have been refurbished in its Swiss engine-overhaul facility. Recent customers include Air Macau, which signed a five-year contract last year with SR Technics for engine maintenance and support for the PW4158 engines on the airline's A300-600 aircraft. Meanwhile, the line maintenance services provided for these aircraft range from daily checks to spare-parts handling. In addition, SR Technics provides on-call assistance as well as pre-flight, daily, weekly and any other line maintenance checks.

Also of note is MTU Maintenance Hannover, which has overhauled 2,500 CF6 engines to date, over 1,000 of which have been CF6-80C2s. According to Katia Diebold-Widmer, manager marketing, MTU Maintenance overhauls more than 80 CF6-80C2s per year, of which 10-12 are for the A300/A310.

Moving to airframe overhaul activity, ST Aerospace is the leading global independent C check and heavy check provider. It has facilities in both the US and Asia Pacific, which have extensive capabilities in A300-600 and A310 heavy

## A300-600 &amp; A310 SPARE ENGINE SUPPORT - CF6-80C2, JT9D-7R4 &amp; PW4000

	On-wing support	AOG services	Short- term leases	Med/long- term leases	Engine pooling
Air Canada Technical Services (ACTS)	Yes	Yes	~	~	~
Air France Industries	Yes	Yes	Yes	Yes	Yes
Ameco Beijing	Yes	~	~	~	~
American Airlines	Yes	Yes	Yes	Yes	~
Engine Lease Finance	~	~	Yes	Yes	Yes
GA Telesis	Yes	Yes	Yes	Yes	Yes
GAMCO	Yes	Yes	Yes	Yes	Yes
GE Engine Services	Yes	Yes	Yes	Yes	Yes
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes
P&W Engine Services	Yes	Yes	Yes	Yes	Yes
SAA Technical	Yes	Yes	~	Yes	Yes
TAP M&E	Yes	Yes	Yes	Yes	Yes
THY Technic	Yes	Yes	Yes	Yes	~
Willis Lease	~	Yes	Yes	Yes	~

## A300-600 &amp; A310 ROTABLES &amp; LOGISTICS

	Rotable inventory leasing	Rotable inventory pooling	Repair & doc manage	AOG support	PBH rotables support
Air France Industries	Yes	Yes	Yes	Yes	Yes
Airbus	Yes	~	~	Yes	~
AJ Walter	Yes	Yes	Yes	Yes	Yes
Avtrade	Yes	Yes	Yes	Yes	Yes
GA Telesis	Yes	Yes	Yes	Yes	Yes
GAMCO	~	~	Yes	Yes	~
Kellstrom	Yes	Yes	Yes	Yes	~
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes
Sabena Technics	Yes	Yes	Yes	Yes	Yes
TAP M&E	Yes	Yes	Yes	Yes	Yes
THY Technik	~	~	~	Yes	Yes

## A300-600 &amp; A310 HEAVY COMPONENT MAINTENANCE

	Wheels, tyres & brakes	APU test & repair (GTCP 331-250)	Thrust reversers	Landing gear
Air Canada Technical Services (ACTS)	Yes	Yes	~	~
Air France Industries	Yes	Yes	Yes	Yes
Air India	Yes	Yes	Yes	Yes
Ameco Beijing	Yes	~	~	Yes
American Airlines	Yes	Yes	Yes	Yes
GAMCO	Yes	Yes	Yes	~
Honeywell Aerospace	~	Yes	~	~
Iberia Maintenance	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes
Messier Services	Yes	~	~	Yes
Revima (APU)	~	Yes	~	~
SAA Technical	Yes	Yes	Yes	Yes
Sabena Technics	Yes	Yes	Yes	Yes
SAS Component	Yes	~	Yes	~
SIA Engineering Co	Yes	Yes	Yes	Yes
SR Technics	Yes	Yes	Yes	~
ST Aviation Services (SASCO)	Yes	Yes	Yes	Yes
TAP M&E	Yes	~	Yes	~
Triumph Group	~	Yes	Yes	~
THY Technik	Yes	Yes	Yes	Yes
VEM	Yes	Yes	Yes	Yes

maintenance, upgrade and modification.

ST Aerospace's SASCO facility in Singapore, for example, has overhauled a large number of FedEx A300-600 and A310 freighters, as has its neighbouring competitor SIA Engineering Company. Meanwhile, STARCO, ST Aerospace's facility in Shanghai, is exclusive in supporting China Eastern Airlines' fleet of A300-600s, while SAS Component, its

facility in Copenhagen, specialises in PW4000 engine thrust reverser repair and overhaul.

Ken Zick, maintenance marketing at American Airlines, believes that operating the aircraft (American has the largest passenger fleet of A300s) gives them an advantage in being the best provider of maintenance support. "Since introducing the A300 aircraft, our staff have

continuously developed and implemented maintenance programmes and corrective actions, which have kept American's fleet operating very reliably." An important third-party customer at American's facilities is FedEx.

In Europe, Lufthansa Technik is a large provider of A300-600 and A310 overhaul services. Its customer list includes Kibris Turkish Airlines, the German Air Force, Belgian Air Component, Czech Airlines and, of course, Lufthansa itself. Sabena Technics, meanwhile, overhauls A300-600s and A310s for Eagle Aviation France, MAP Jet and Yemenia.

In the Middle East, the five big players are EgyptAir Maintenance & Engineering, GAMCO, JorAMCo, MASCO and THY Technic. GAMCO's A300-600/A310 customers include Onur Air, Air Atlanta Icelandic, Qatar Airways. EgyptAir M&E's customers include Libyan Arab Airlines and Midwest Airlines (Egypt). MASCO also overhauls aircraft from Onur Air and Air Atlanta Icelandic.

JorAMCo overhauls A310s and A300-600s. Recent contracts include one with the French operators Eagle Aviation, which renewed its contract for JorAMCo to provide heavy maintenance and technical support on two A300-600s operating under wet lease in Saudi Arabia. Another contract, this time for A310s, was recently completed for six heavy maintenance checks on Russian S7 A310-200s. Other JorAMCo A310 and A300-600 customers include Air India and Royal Jordanian.

TAP Maintenance & Engineering, with four-bay hangar facilities at Lisbon, has been maintaining TAP's Airbus fleet, which includes A310s that are now in the process of being phased out. TAP also maintains A300-600 aircraft for third-party customers, even though it does not operate the aircraft.

TAP is also expanding its activities in Brazil (Rio de Janeiro and Porto Alegre), where its acquisition of VEM's facilities has given it nine hangars capable of handling eighteen aircraft simultaneously. Several widebody bays are included in these facilities and TAP/VEM can overhaul A300-600 and A310 aircraft. VEM is starting contacts with a few customers, having received Federal Aviation Administration (FAA) certification in August 2007 to perform heavy maintenance for the A310 and A300-600. VEM is already certified by all major civil aviation authorities, including the FAA, the European Aviation Safety Agency (EASA) and the National Agency of Civil Aviation (ANAC), Brazil. **AC**

To download 100s of articles like this, visit:  
[www.aircraft-commerce.com](http://www.aircraft-commerce.com)