

A330-200/-300 technical support providers

There are about 530 A330s in operation and are based on all continents. This survey summarises the technical support services available.

This survey summarises the major aftermarket and technical support service providers for the A330-200/-300 series. It is grouped into seven sections covering the different categories of support offered by each of the providers:

- Engineering management and technical support (see table, page 34).
- Line and light maintenance (see first table, page 35).
- Base maintenance (see second table, page 35).
- Engine maintenance (see first table, page 36).
- Spare engine support (see second table, page 36).
- Rotables and logistics (see first table, page 38).
- Heavy components maintenance (see second table, page 38).

Some of 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 A330-200/-300. This means they provide most, if not all, of 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 the above, spare engine leasing support services may also be provided.

There are about 530 A330s in operation, and there are several technical support providers that offer one-stop-shop services for the aircraft. Major support providers include Abu Dhabi Aircraft Technologies, Air France Industries, Ameco Beijing, Lufthansa Technik and Turkish Technik.

Third-party market share

The survey tables show the providers that are able to offer a complete range of base maintenance services, comprising airframe heavy maintenance as well as engine maintenance, repair and overhaul (MRO), for the A330 series. These providers include: Abu Dhabi Aircraft Technologies (formerly GAMCO), Air France Industries, AMECO Beijing, Evergreen Aviation, KLM Engineering & Maintenance, Lufthansa Technik (LHT); SIAEC/SAESL, and Turkish Technik. It is noteworthy that LHT is the only one of these providers capable of overhauling all engine types, if its 'N3' venture with Rolls-Royce is included.

According to Flightglobal's ACAS database, which records actual maintenance contracts on an airframe-by-airframe contract basis, by far the largest proportion (22%) of A330 airframe maintenance checks is undertaken in-

house by the maintenance department of each airline operator. The remainder are outsourced to third-party providers. Of these, the biggest provider of airframe heavy checks for the A330, according to ACAS, is HAECO. The rest, in descending order are as follows: Air France Industries; TAECO; SR Technics; Gameco; Lufthansa Technik Philippines; Abu Dhabi Aircraft Technologies; Evergreen Aviation; SIAEC; AMECO Beijing; Lufthansa Technik; Air Canada Technical Services (ACTS); LTU Technik; Sabena Technics; ST Mobile Aerospace (MAE); TAP M&E; EgyptAir Maintenance & Engineering; SR Technics (Ireland); Malaysia Airlines; Turkish Technik; Iberia; and MASCO. The tables list additional A330 airframe heavy maintenance providers which were not logged by ACAS.

The biggest recipient of third-party contracts for engine overhaul is HAESL, with 18% of all A330 outsourced engine overhaul work, in this case for the Trent 700 turbofan.

The next biggest slice of work is undertaken by in-house airline engine shops. In descending order the remainder are as follows: P&W Cheshire Engine Center (PW4100); Rolls-Royce Aero Engine Services (Trent 700); GE Engine Services (CF6-80E1); SAESL (Trent 700); KLM Engineering & Maintenance (CF6-80E1); SR Technics (PW4100); Jet Turbine Services Australia (CF6-80E1); Abu Dhabi Aircraft Technologies (CF6-80E1 and Trent 700); MTU Maintenance Hannover (CF6-80E1); GE Engine services Malaysia (PW4100); Ameco Beijing (PW4100); GE Caledonian (CF6-





80E1); Evergreen Aviation (CF6-80E1); N3 Engine Overhaul Services (Trent 700); Lufthansa Technik (CF6-80E1 and PW4100); and Eagle Services Asia (PW4100).

It is also worth looking at the maintenance of auxiliary power units (APUs). In this category, the largest single APU overhauler, with 58% is the original equipment manufacturer (OEM), Honeywell, which has overhaul facilities in: Phoenix, Arizona, USA; Raunheim, Germany; and Singapore. Other significant APU overhaulers include: Revima APU; Abu Dhabi Aircraft Technologies; Iberia; Epcor APU; Lufthansa Technik; THY Technik; TAP Maintenance & Engineering; Air France Industries; and Triumph Air Repair.

A330 MRO market and forecast

David Stewart, principal at AeroStrategy management consultants, calculates the worldwide A330 airframe heavy maintenance market today, for C and D checks, to be worth about \$174 million annually, growing at a rate of eight per cent per annum through to \$383 million in 2017. He notes that for the A330, the average cost per event is increasing due to the greater proportion of non-routine work as the aircraft age. "We recorded about 300 C and D check events in 2007, and because the number of deliveries is increasing, we will see a growing number of events, such that there will be approximately 700 in 2017," says Stewart.

The A330 fleet is predicted to grow to about 1,100 units. Requirements for technical support will grow with the fleet. The current number of annual base checks for the fleet is about 300, but this is expected to grow to about 700 by 2017.

Stewart has calculated that the engine overhaul market for the CF6-80E1, Trent 700, and PW4100 was worth \$634 million in 2007, and expects this to rise to \$1.47 billion in 2017. This is equal to an annual growth rate of nine per cent.

The biggest suppliers for the CF6-80E1 are GE and KLM. For the PW4100 the main providers are SRT and P&W. As for the Trent 700, Stewart notes that most overhauls are undertaken by Rolls-Royce and its joint ventures including: SAESL in Singapore; HAESL in Hong Kong; and TAESL in the US. 'N3', Rolls-Royce's engine MRO venture with LHT, will also add significant capacity to the market in the coming years.

"There are a limited number of suppliers of A330 engine maintenance. This is because it is undertaken primarily by the OEMs, their joint ventures, or by SRT (for PW4100s) plus KLM (for CF6-80E1s). In particular, there are also relatively few events on the CF6-80E1 at the moment because it is a youthful fleet."

Overall, Stewart observes that with the increased delivery profile of the past five years there will be numerous first-time events coming through the system. In terms of engine events for all three engine types, AeroStrategy recorded 225 events in 2007, which will grow to 575 events in 2017.

"The chances are that over the next 10 years the market will require more

A330-200/-300 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
Abu Dhabi Aircraft Technologies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Air Canada Technical Services	Yes	-	Yes	-	-	-	-	-	-
Air France Industries	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Airbus	-	-	Yes	-	Yes	-	-	Yes	-
GA Telesis	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
Lufthansa Technik Philippines	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Messier Services	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
SAS Component	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SAS Technical Services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SR Technics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TAP Maintenance & Engineering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

A330-200/-300 LINE & 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
Abu Dhabi Aircraft Technologies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Air Canada Technical Services	-	Yes	-	-	-	Yes	Yes	Yes	Yes
Air France Industries	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Airbus	-	Yes	-	-	-	-	Yes	Yes	Yes
Ameco Beijing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Austrian Technik	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Europe Aviation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Evergreen Aviation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GA Telesis	-	Yes	-	-	Yes	Yes	-	-	-
GMF Aero Asia	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
LTU Technik	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik Philippines	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Messier Services	Yes	Yes	-	-	-	-	Yes	Yes	-
Sabena Technics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SAS Technical Services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Shanghai Technologies (STARCO)	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	Yes
TAP Maintenance & Engineering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Turkish Technic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

sources of supply for the CF6-80E1 which is currently rather limited," says Stewart. "Rolls-Royce operators will benefit from the N3 facility. Moreover, PW4000-94 overhaulers will gradually move out of that type and more into the PW4000-100 that powers the A330. In short, there will be more suppliers, especially for the CF6-80E1."

Asia Pacific

The majority of A330 airframe heavy maintenance providers are located in the Asia Pacific region, reflecting the large installed base of A330 fleets based there. These providers include: AMECO Beijing; Evergreen Aviation (Taiwan); Gameco; GMF AeroAsia; HAECO; Lufthansa Technik Philippines; Malaysia Airlines; Shanghai Technologies (STARCO); SIA Engineering Company; ST Aviation Services (SASCO); and TAECO Xiamen.

Notably, STARCO is driven by its parent fleet, China Eastern. Gameco looks after the fleet of China Southern, as well as some A330s from China Eastern. Meanwhile Air China's A330 fleet is overhauled by AMECO Beijing. LTP is LHT's main presence in Asia, and it overhauls A330s from Philippine Airlines, Qantas, and Hi Fly. Although HAECO has long been associated with Cathay Pacific and overhauls that carrier's aircraft including A330s, it also overhauls those of Air Calin, Qantas, and Dragonair. TAECO in Xiamen China also overhauls A330s from Cathay Pacific

A330-200/-300 BASE MAINTENANCE SUPPORT

	C checks	IL & D checks	Composites	Strip/paint	Interior refurb
Abu Dhabi Aircraft Technologies	Yes	Yes	Yes	Yes	Yes
Aeroframe Services	Yes	Yes	Yes	Yes	Yes
Air Canada Technical Services	Yes	Yes	Yes	Yes	Yes
Air France Industries	Yes	Yes	Yes	Yes	Yes
Ameco Beijing	Yes	Yes	Yes	Yes	Yes
Austrian Technik	Yes	-	-	Yes	Yes
Egyptair Maintenance & Engineering	Yes	Yes	Yes	Yes	Yes
Evergreen Aviation	Yes	Yes	Yes	Yes	Yes
GAMECO	Yes	Yes	Yes	Yes	Yes
GMF Aero Asia	Yes	Yes	Yes	Yes	Yes
HAECO	Yes	Yes	Yes	Yes	Yes
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik Philippines	Yes	Yes	Yes	Yes	Yes
LTU Technik	Yes	Yes	Yes	Yes	Yes
Malaysia Airlines	Yes	Yes	Yes	Yes	Yes
MASCO	Yes	Yes	Yes	Yes	Yes
Monarch Aircraft Engineering	Yes	Yes	Yes	Yes	Yes
Sabena Technics	Yes	Yes	Yes	Yes	Yes
Shanghai Technologies (STARCO)	Yes	Yes	Yes	Yes	Yes
SIA Engineering Company	Yes	Yes	Yes	Yes	Yes
SR Technics	Yes	Yes	Yes	Yes	Yes
ST Aviation Services	Yes	Yes	Yes	Yes	Yes
ST Mobile (MAE)	Yes	Yes	Yes	Yes	Yes
TAECO	Yes	Yes	Yes	Yes	Yes
TAP Maintenance & Engineering	Yes	Yes	Yes	Yes	Yes
Turkish Technic	Yes	Yes	Yes	Yes	Yes

A330-200/-300 ENGINE MAINTENANCE - CF6-80E1, PW4100 & TRENT 700

	CF6-80E1	PW4100	Trent 700	Engine health monitor	Engine maint manage	On-wing engine maint	Engine shop visits	Parts repair schemes
Abu Dhabi Aircraft Technologies	Yes	-	Yes	Yes	Yes	Yes	Yes	Yes
Air France Industries	-	-	-	Yes	Yes	Yes	-	-
Ameco Beijing	-	Yes	-	Yes	Yes	Yes	-	-
Eagle Services Asia	-	Yes	-	Yes	Yes	Yes	Yes	Yes
Evergreen Aviation	Yes	-	-	Yes	Yes	Yes	Yes	Yes
GA Telesis	-	-	-	Yes	Yes	-	-	-
GE Aviation Engine Services	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Jet Turbine Services	Yes	-	-	Yes	Yes	Yes	Yes	Yes
HAESL	-	-	Yes	Yes	Yes	Yes	Yes	Yes
IASG	-	-	-	Yes	Yes	-	-	-
Iberia Maintenance	-	-	-	Yes	Yes	Yes	-	-
KLM Engineering & Maintenance	Yes	-	-	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik Philippines	-	-	-	Yes	Yes	Yes	-	-
MTU Maintenance Hanover	Yes	-	-	Yes	Yes	Yes	Yes	Yes
Pratt & Whitney Eagle Services	-	Yes	-	Yes	Yes	Yes	Yes	Yes
Rolls-Royce Engine Services	-	-	Yes	Yes	Yes	Yes	Yes	Yes
SAESL	-	-	Yes	Yes	Yes	Yes	Yes	Yes
SR Technics	-	Yes	-	Yes	Yes	Yes	Yes	Yes
TAESL	-	-	Yes	Yes	Yes	Yes	Yes	Yes
Total Engine Support (UK)	-	-	-	Yes	Yes	-	-	-
Turkish Technic	Yes	-	-	Yes	Yes	Yes	Yes	-

A330-200/-300 SPARE ENGINE SUPPORT - CF6-80E1, PW4100 & TRENT 700

	On-wing support	AOG services	Short-term leases	Med/long-term leases	Engine pooling
Abu Dhabi Aircraft Technologies	Yes	Yes	Yes	Yes	Yes
Air Canada Technical Services	Yes	Yes	-	-	-
Air France Industries	Yes	Yes	Yes	Yes	Yes
Ameco Beijing	Yes	-	-	-	-
Engine Lease Finance	-	-	Yes	Yes	Yes
GA Telesis	Yes	Yes	Yes	Yes	Yes
GE Engine Services	Yes	Yes	Yes	Yes	Yes
HAESL	Yes	Yes	-	-	-
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik Philippines	Yes	Yes	-	-	-
Pratt & Whitney Engine Services	Yes	Yes	Yes	Yes	Yes
Rolls-Royce	Yes	Yes	Yes	Yes	Yes
Snecma Services	Yes	Yes	Yes	Yes	Yes
SR Technics	Yes	Yes	Yes	Yes	Yes
TAP Maintenance & Engineering	Yes	Yes	Yes	Yes	Yes
Turkish Technic	Yes	Yes	Yes	Yes	-
Willis Lease	-	Yes	Yes	Yes	-

Austrian Technik; Iberia Maintenance; Lufthansa Technik; LTU Technik; Monarch Aircraft Engineering; Sabena Technics; SR Technics; and TAP M&E.

Air France Industries, in addition to overhauling its host carrier's A330-200s, also has contracts with XL Airways (France), Monarch Airlines, KLM Royal Dutch Airlines, Corsairfly, Yemenia, and Air China. Iberia overhauls Iberworld's A330s, and LHT overhauls Lufthansa's, bmi British Midland's and also those of the operator Livingston.

Meanwhile, Sabena Technics has two main locations in Brussels and Dinard. At the latter, Aer Lingus's A330s are overhauled, while Brussels handles the A330s of Brussels Airlines, Cyprus Airways, and Hi Fly.

SR Technics' two main bases are in Dublin and in Zurich. At the latter facility, the following carriers' A330s are overhauled: Swiss; Eurofly; Air Caraibes; Gulf Air; Edelweiss Air; Qantas; and Monarch. Meanwhile, the Dublin facility has contracts with Air Greenland, Corsairfly, SAS, and Air Europa. In addition, TAP M&E and LTU both overhaul their respective host airlines' fleets.

Engine shops in the region include: Air France Industries (CF6-80E1); GE Aviation Engine Services, Wales (CF6-80E1); KLM Engineering & Maintenance (CF6-80E1); Lufthansa Technik (all three engine types if N3 is included); MTU Maintenance Hannover (CF6-80E1); Rolls-Royce Engine Services (Trent 700); and SR Technics (PW4000).

Airways and Dragonair.

Engine shops in the Asia-Pacific region include: AMECO Beijing (PW4000); Eagle Services Asia (PW4000); Evergreen Aviation (CF6-80E1); Jet Turbine Services, Australia (CF6-80E1); HAECO's associate 'HAESL' (Trent 700); Lufthansa Technik

Philippines (CF6-80E1); and SIAEC's associate 'SAESL' (Trent 700).

Europe

The next largest geographical region for A330 overhaul is Europe with at least nine providers: Air France Industries;

A330-200/-300 ROTABLES & LOGISTICS

	Rotable inventory leasing	Rotable inventory pooling	Repair & doc manage	AOG support	PBH rotables support
Abu Dhabi Aircraft Technologies	-	-	Yes	Yes	-
Air France Industries	Yes	Yes	Yes	Yes	Yes
Airbus	Proprietary parts	-	-	Yes	-
AJ Walter	Yes	Yes	Yes	Yes	Yes
AvTrade	Yes	Yes	Yes	Yes	Yes
GA Telesis	Yes	Yes	Yes	Yes	Yes
Kellstrom	Yes	Yes	Yes	Yes	-
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik Philippines	Yes	Yes	-	Yes	Yes
Messier Services	Yes	Yes	Yes	Yes	Yes
Sabena Technics	Yes	Yes	Yes	Yes	Yes
SAS Component	Yes	Yes	Yes	Yes	Yes
SAS Technical Services	Yes	Yes	Yes	Yes	Yes
SR Technics	Yes	Yes	Yes	Yes	Yes
TAP Maintenance & Engineering	Yes	Yes	Yes	Yes	Yes
Triumph Group	Yes	Yes	Yes	Yes	Yes
Turkish Technic	-	-	-	Yes	Yes

A330-200/-300 HEAVY COMPONENT MAINTENANCE

	Wheels tyres & brakes	APU test & repair	Thrust reversers	Landing gear	Landing gear exchanges
Abu Dhabi Aircraft Technologies	Yes	Yes	Yes	-	-
Air Canada Technical Services	Yes	Yes	-	-	-
Air France Industries	Yes	Yes	Yes	Yes	Yes
Ameco Beijing	Yes	-	-	Yes	Yes
EPCOR APU	-	Yes	-	-	-
HAECO	Yes	Yes	Yes	Yes	Yes
Honeywell Aerospace	-	Yes	-	-	-
Iberia Maintenance	Yes	Yes	Yes	Yes	Yes
Lufthansa Technik	Yes	Yes	Yes	Yes	Yes
Messier Services	Yes	-	-	Yes	Yes
Revima APU	-	Yes	-	-	-
Sabena Technics	Yes	Yes	Yes	Yes	Yes
SAS Component	Yes	-	Yes	-	-
SR Technics	Yes	Yes	Yes	-	-
SIA Engineering Company	Yes	Yes	Yes	Yes	Yes
ST Aviation Services (SASCO)	Yes	Yes	Yes	Yes	Yes
TAP Maintenance & Engineering	Yes	-	Yes	-	-
Triumph Group	-	Yes	Yes	-	-
Turkish Technic	Yes	Yes	Yes	Yes	Yes

Middle East

In the Middle East there are four main players: Abu Dhabi Aircraft Technologies (ADAT), formerly GAMCO; EgyptAir M&E; MASCO; and Turkish Technic. ADAT overhauls aircraft from Etihad and a few from Corsairfly, while MASCO handles A330s from Middle-East Airlines (MEA), and Turkish looks after its host airline's fleet.

According to ACAS, and based on contracts logged, the A330 engine overhaulers in the region include ADAT

(CF6-80E1 and Trent 700) and Turkish Technic (CF6-80E1).

Probably the most notable recent development in this region is the transformation of the former GAMCO into ADAT, which has begun constructing a dedicated single-bay maintenance hangar for Etihad, the UAE's national airline, as part of a \$500-million, five-year MRO contract between the two. Services to be provided will include airframe maintenance (A checks and C checks), technical, procurement and logistics, including 'total care APU'

support.

Developed to service Etihad's fleet of 14 A330s, as well as the carrier's nine A340s, six A320s and five 777-300ERs, the new hangar will be completed in July 2008. The re-launch of the company is part of a long-term strategy of targeting an \$800 million revenue stream by 2012.

North America

The region with the fewest number of A330 players is the US, which has only three providers: Aeroframe Services; Air Canada Technical Services (ACTS); and ST Mobile (MAE). ACTS is, without doubt, the largest MRO provider for A330 overhauls in the region, and its three largest A330 customers are Air Canada, ILFC, and Air Transat.

In terms of engine providers, the US has: GE Engine Services, Ohio; P&W Cheshire CT; and Texas Aero Engine Services (TAESL), a venture between Rolls-Royce and American Airlines.

Specialist services

In addition to the main airframe and engine support providers, there are specialist providers for spare engine leasing, heavy component repairs, and rotables support. Companies which specialise in rotatable support packages include AJ Walter, Avtrade, Triumph Group, and SAS Component. Of course, 'full service' providers such as SR Technics with its 'Integrated Component Solutions' (ICS), and Lufthansa Technik with its 'Total Material Operations' (TMO) provide a full spectrum of rotatable inventory and logistical services for third-party operators.

Aside from the engine OEMs, which all have divisions that handle engine leasing/finance, independent engine lessors include Engine Lease Finance, GA Telesis and Willis Lease. Examples of specialist heavy component repair providers are the OEM Messier Services for landing gear wheels and brakes, and Revima for APUs, which is the largest non-OEM provider of overhaul services. But the largest overhauler overall of the A330's GTCP331-350 APUs is the OEM, Honeywell. Honeywell has three strategically located facilities in Phoenix, AZ; Raunheim, Germany; and Singapore. Together these facilities mean that Honeywell handles at least 60% of all APU shop visits. Of these, its Singapore facility undertakes the most APU overhauls (reflecting the large number of A330s operating in the Asia-Pacific region), followed by Raunheim and then Phoenix. **AC**

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