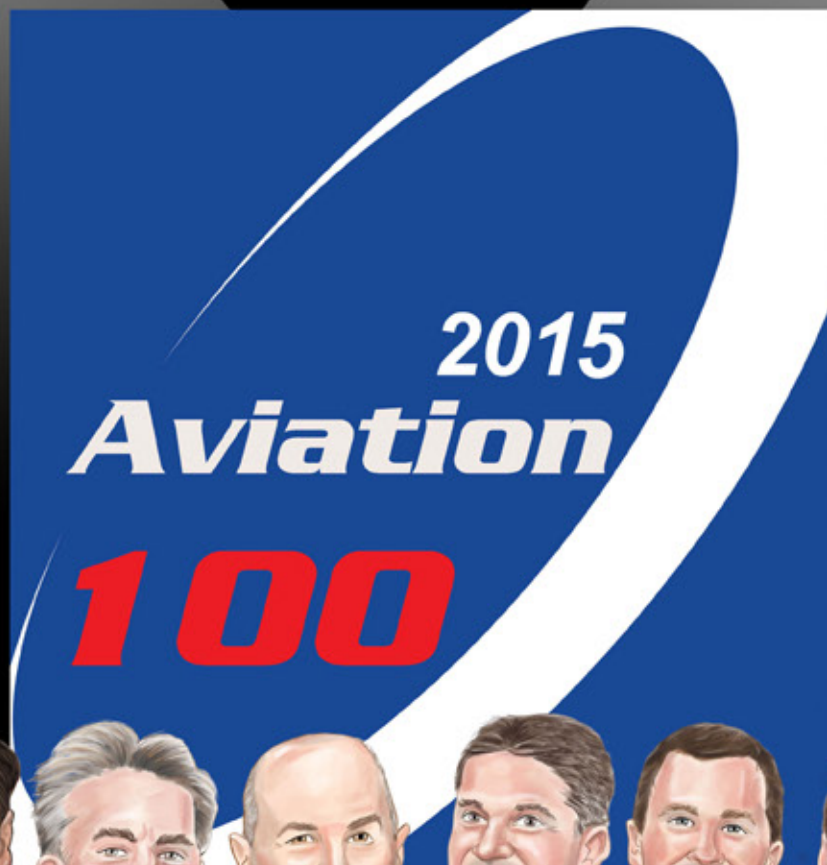


# **Airline Economics**

THE LEADING GLOBAL PUBLICATION FOR OPERATORS OF AND INVESTORS IN AIRCRAFT AND ENGINES





# A380 Support Infrastructure Matures

Doric's Maurick Groeneveld looks at what maintenance support is currently available for A380 operators.

**A**fter over seven years of A380 operation and with more than 150 A380s in service, service providers for the various types of A380 maintenance and support have emerged and become established. This

not only benefits the current A380 operators which usually have significant in-house capabilities, it will also benefit follow-on operators with limited in-house capabilities who will need third-parties organizations to support their A380 operations. Maurick Groeneveld,

Director Aircraft Management with Doric, looks at what is currently available to support A380 operators.

## LINE MAINTENANCE

Virtually all cities to which A380s currently fly have at least one line





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maintenance provider for the aircraft type. But also cities which do not yet have A380 services, such as Pointe-à-Pitre and Rio de Janeiro, already have companies offering line maintenance support. It can be expected that the number of cities with A380 line maintenance

support and the number of providers at a particular airport will grow further over the next years: this is not only because the number of A380s is growing (with the number of aircraft on order) and the number of cities being served by A380s, but also because the A380

is becoming a more common aircraft. Although line maintenance support is offered by large organizations affiliated with A380 operators in many cases (for example by Lufthansa Technik, Air France Industries and BA Engineering), independent organizations not linked





(Singapore) and GAMECO (Guangzhou, China). Also the STTS Group has a paint facility for A380s which is located in Toulouse, France.

### ENGINE MAINTENANCE

For Rolls Royce Trent 900-powered A380s, engine shops are available with SAESL in Singapore and with N3 Engine Overhaul Services in Arnstadt, Germany. Both engine shops are joint ventures with Rolls Royce. In the case of SAESL, both HAESL (a joint venture between Rolls Royce and HAECO, Cathay Pacific's MRO), and SIAEC, Singapore Airlines' MRO, are involved. In the case of N3 Engine Overhaul Services, Lufthansa Technik is the other joint venture partner. Under the Total Care agreements with Trent 900 customers, Rolls Royce subcontracts engine maintenance activities to one of these facilities; about 75 % of the Trent 900 workload is done by SAESL. This means that Trent 900 customers have no option but to see their engines go to one of these engine shops and, effectively, Rolls Royce controls the aftermarket for Trent 900 engines. The situation is different in the case of Engine Alliance GP7200-powered A380s as the GP7200 engines can be serviced at the GE (OEM) facility in Cardiff, United Kingdom or by the non-OEM engine shop of Air France Industries in Paris, France. Although still with a somewhat limited scope of activities, Emirates Engineering is another facility providing maintenance of GP7200 engines.

### APU MAINTENANCE

There is currently one repair station for the PW 980A APU in the A380. It is Revima APU in Caudebec-en-Caux, France.

### LANDING GEAR MAINTENANCE

Usually the nose, wing and body landing gears for an aircraft are all produced by the same manufacturer. This is not the case with the A380 whose nose landing gear is manufactured by Messier and wing and body landing gear is produced by UTAS. Both manufacturers will offer landing gear overhaul services. The first A380 landing gear overhaul will commence in 2015 under a sampling programme.

with an A380 operator are also offering support. These include Air Berlin Technik, Direct Maintenance and SR Technics. Up to now A380 cities are mostly found in Europe, North America and Asia, but major cities and future A380 destinations outside these regions also offer line maintenance support.

### BASE MAINTENANCE

In the meantime, SIAEC and Emirates have each accomplished a significant number of C checks and several 6-year structural inspections on their A380s. Lufthansa Technik has also performed such checks. Other A380 operator-related MROs which have performed base maintenance include GAMECO, Air France Industries and Korean Air. But also independent MROs have gained experience and are offering their A380 services. These organizations, which would probably

not have initially considered performing base maintenance, got a kick start through the Airbus-managed wing rib feet modification programme. They were able to accumulate considerable A380 experience in a short time as they were each receiving around a dozen outsourced Emirates' A380 aircraft under Airbus contracts. It can be expected that these organizations – Sabena Technics (Bordeaux, France), Elbe Flugzeug Werke (Dresden, Germany), ADAT (Abu Dhabi, UAE) and AMECO (Beijing, China) – will now aim to secure heavy maintenance work on the A380s, particularly 6-year structural inspections.

### AIRCRAFT PAINTING

Apart from the Airbus paint shop in Hamburg normally used for new A380s, A380 paint shops are available with Emirates Engineering (Dubai), SIAEC





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### COMPONENTS SUPPORT

Repair and access to the pool of A380 components is available via components support offered by Airbus (Flight Hour Services (FHS) Components) and Spairliners. Spairliners has been set up as a joint venture between Lufthansa Technik and Air France Industries to offer A380 components support for their affiliated A380 operators and other A380 airlines. Both component support providers essentially offer similar services by managing component repairs with different repair shops and making serviceable components available to their customers.

### ENGINEERING SUPPORT

So far engineering support for A380s is carried out by the operators and their affiliated technical organizations. However, if future A380 operators wish to outsource all or parts of such activities,

organizations such as Lufthansa Technik, SIAEC and Air France Industries could be used.

### FLIGHT SIMULATORS

There are sufficient locations around the world to train the flight crews of existing and new A380 operators. A380 flight simulators and training centres are available with Airbus, Lufthansa, Air France, British Airways, Emirates, Qantas and Singapore Airlines, amongst others.

### CONCLUSION

Although initially focused on supporting the A380s of existing operators via affiliated organizations, the A380 support infrastructure has developed over the past seven years to be able to support new A380 operators who rely on third-party services. As such the A380 support infrastructure is helping

to increase the A380 operator base.

Doric, based in Germany, the UK and the US, provides airline advisory services and pro-active, hands-on asset management and remarketing services to owners, investors, financiers and operators of aircraft and engines. Having a wide range of aircraft and engines under long term asset management (e.g. the Airbus A320 family, the A330/A340 family, the A380, the Boeing 777 and engines such as the CFM56-5, the Trent 500, the GE90-115 and the GP7200), Doric can offer its customers valuable first-hand experience and access to know-how not usually available elsewhere. Doric performs asset management and airline advisory services via dedicated project assignments such as remarketing of aircraft, aircraft redelivery support and RFP support, negotiation of aircraft purchase/lease agreements and maintenance contracts.