

# NEWS

January 2012



TURBINE SUPPORT SERVICES

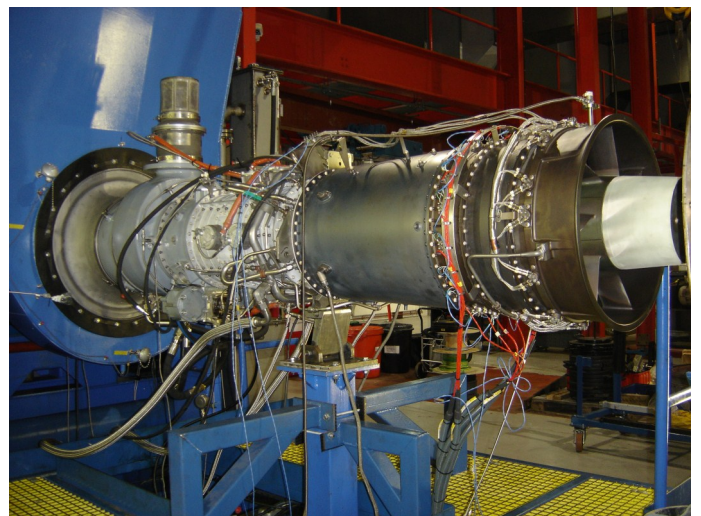
The 501K Service Centre

2011 saw TSS achieve a number of its business goals, with one of the most rewarding being the completion of its first 501-KB7 engine conversion repair and test.

What made this project particularly unique and interesting was that this engine was originally produced as one of the only two 501-KH7 engines ever manufactured and released by Rolls-Royce, (formerly Allison) factory, Indianapolis, USA. This engine initially saw service within a US Turbines package sited in Utah, USA, prior to its decommissioning.

TSS was tasked both with the repair and refurbishment of the core engine, as well as returning the completed engine configured as a 501-KB7C.

Both the engine and refurbished package are being installed and placed into service in a region of West Africa. Another unique aspect to this installation will see the engine running on a fuel source based



around liquefied petroleum gas. With aspects of the installation & commissioning process being undertaken by TSS Engineers, we hope to place the engine on line very shortly.

A dedicated article relating to this project will be released in a future edition.

## NON-OEM PARTS SHOW THEIR TRUE WORTH

Interestingly, 2011 also saw the first European based 501-KB5S engine achieving its OEM designed overhaul life. In itself there is nothing unusual in that, however, what makes this event a particular point of interest is that this engine achieved its overhaul design life whilst utilising non-OEM parts!

Prior to its removal from service, ASP1756 had been in operation at a UK based landfill site. With the last engine overhaul passing through TSS, it was particularly pleasing for us to see that finally a high-

temperature 501K engine could be equipped to achieve its OEM overhaul life expectations through the use and embodiment of non-OEM parts.

Even with today's quality driven component part manufacturing processes, employed by component parts suppliers to both OEM and non-OEM's alike, the question still hung over the ability of non-OEM parts being able to withstand the rigors imposed within a high-temperature engines, such as the KB5S/ KB7C & KB7D.

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## THE 501K SERVICE CENTRE

Although many organisations operating within the 501K market realised and begrudgingly acknowledged the commercial benefits that the employment of non-OEM parts could bring, there were always doubts cast and encouraged that non-OEM could not do the job, be this from a technical “fit for purpose” perspective.

Particular concern was always expressed over the integrity of turbine blades and vanes, which by their nature carry the largest cost and risk should they prematurely fail in service. There was also concern expressed toward non-OEM compressor blades prematurely failing in service.

Strangely enough it was not un-common to find non-OEM parts embodied with lower rated engines such as the 501KB and KB5, however, the gulf between the KB5 and the KB5S/KB7C&D had yet to be breached.

So the challenge to the non-OEM parts supplier was clear; the only way to prove conclusively to the market that their parts were “as good as” and “equal” to OEM parts, was to equip a high-temp engine with non-OEM parts, place it into service and then wait for 30,000. fired hours to be consumed in typically four years of service. Well thankfully those four years have now passed and we are pleased to say that we made it in one piece.

Many of the old concerns can now be put to rest.

With the global economic crises creating viability issues within the CHP industry alongside the costs imposed due to exhaust emission regulations, many existing 501K operators are desperately looking for ways through which their long and short term operating costs can be reduced without compromising equipment quality and durability.

In response mainly to USA market demands we now see non-OEM parts manufacturers making available a complete range of 501K unique parts, including;

- 1st stage DS turbine blades
- 2nd stage Mar-M turbine blades
- 501K combustion liners and transitions
- Main-line bearings
- 1st stage pin-fin TBC vanes
- 2nd & 3rd stage HCIB vanes
- 501K compressor blades & vanes

In parallel, given the heritage of the 501K product, many other engine parts needed during the overhaul and repair process are 100% common with the flight engine typically fitted to the C130 Hercules.

Given therefore that issues such as “fit for purpose” should no longer be seen as issues of concern, this now enables 501K engine operators to view parts on a level playing field with the only determining factor being the cost of purchase. The freedom of choice is now available.

### TSS LEASE ENGINES

To give support to 501K engine operators, TSS has evolved a fleet of 501K engines which are available for use as either short term engine rentals or on a long

term engine leasing basis. Our rental engines are intended to support operators that perhaps wish to defer an engine overhaul activity or simply wish to send their engine away to a facility for work and seek a rental engine .

When you rent or lease a TSS 501K engine you are not obliged to send your engine to TSS for work. Should you wish to send your engine to another engine shop, why not just enjoy our competitive per fired hour rental rates?.

For further details of services supplied by Turbine Support Services, please contact our team at :-

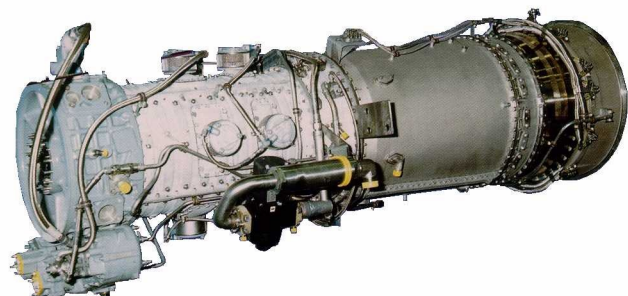
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