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PT6A MISSING DIFFUSER TUBE OPERATION

A customer recently inquired about repair prospects for a compressor diffuser tube in a PT6A-34AG engine found at hot inspection. The pipe was cracked/broken beyond the manufacturer's maintenance manual limits. The normal is to purchase a "CLAMPED IN" replacement diffuser pipe and install per the P&WC maintenance manual appropriate to your engine. These folks were in South America and did not want to wait for parts. What are the options?

The PT6A-27/28 Maintenance manual allows for operation of that engine with some missing compressor diffuser tubes! See manual Section 72-32-41, Par. B, Page 202. Consultation with 'P&WC Technical Support' informed us that the missing diffuser tube information will be included in the -34 maintenance manuals in the next revision cycle and that they had no objection to the use of the PT6A-27 maintenance manual for reference of the subject. Pratt's Technical Support was careful to point out the "durability penalty" that the maintenance manual addresses-it goes like this: "Operating with missing diffuser pipes may lead to accelerated hot section deterioration. If the engine is kept in service, perform borescope inspections of the hot section and combustor at 200 hrs after discovery and subsequent 400 hr intervals (Ref. Periodic Inspection). Cracking of diffuser pipes may be associated with vibrations. The vibration's source should be identified and corrective action taken to reduce it. Frequent sources of vibration are propellers and out-of-balance accessories." Check with P&WC or a P&WC Affiliate Service Center if you are considering such a repair on your engine. I guess the saying still holds true - "There isn't anything free in this world!"