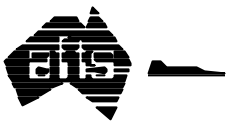

PROJECT TANGO CHARLIE :

Precis And Benefits Summary

References :

A. Project Tango Charlie Proposal to Re Engine of the RAAF Caribou Aircraft, (AFTS837/11/11/UP_001 of 07 January 2000 and related communications to Defence).
B. TEAM AUSTRALIA: Strategic Policy for Defence and Industry, initiated June 1998.
C. Recommendations in Interim Partnering Toolbox Report (IPT_R), dated November 1999.

Reference A is an unsolicited proposal for the re-engining of the RAAF Caribou aircraft. An integral part of the proposal is the recommendation for the formation of an Integrated Product Team (IPT) consisting of Defence and the Tango Charlie Team to validate the proposal's merits on an "open book" or transparent basis and, if found to be in line with Government Policy (eg. Reference B), to then develop the Proposal into an Industry/Government supported project. The principal behind this approach is cost effectiveness.

The Caribou has provided Australia with outstanding service for over 30 years. This capability continues to be successfully applied in East Timor and in support of Australia's Rapid Mobility Forces.

Though its calendar age puts the Caribou in what we term the "ageing aircraft category", it is young in accumulated flying hours, with a good 15 years of airframe life remaining, as determined in the two recently completed RAAF Supportability Studies which reinforce the advice provided at Reference A.

The Achilles' heel of the Caribou is its current power plant, the R-2000 radial piston engine. This engine is 1940's technology, developed from the Wasp engine which first flew in 1926. It has been out of production for some 30 years and is well up, what in engineering terms is called, the "backside of the bathtub curve"; meaning, simply, it is uneconomic to maintain and well into that phase of its life cycle where, inter alia, bogus parts become an issue. Moreover, the reliability has deteriorated significantly over the past 6 years, resulting in poor availability of aircraft and an increasing rate of engine failures. Maintenance and operation of the R-2000 is labour intensive and costly. The technology is from an era past, with the remaining support industry resolved to the general aviation and sport/enthusiast sector. The RAAF engine time before overhaul (TBO) is 1400 engine hours, which is rarely achieved (if ever).

Tango Charlie proposes to re engine the aircraft with the PT6A-67T turbo prop power plant (that has an achievable TBO of over 6,000 engine hours) available through the modification developed by our USA based teaming partner, Pen Turbo Aviation, Inc. As a Small Business (SME), Pen Turbo has very cost effectively developed this modification and is now making it available to the world Caribou fleet.

The PT6A-67T is one of the PT6 family of engines produced by Pratt & Whitney , Canada. These engines have in excess of 215 million operational hours on over 34,000 units, produced since 1963, in more than 100 applications for the military, corporate, commercial and general aviation sectors (fixed and rotary wing) as well as industrial and maritime sectors. They are used by aircraft manufacturers such as Beechcraft, Pilatus, Sikorsky, Agusta, Embraer, Piper, Socata, CASA, Cessna, and Boeing.

The merits/benefits, outlined in Reference A, that can be achieved to support our Defence Capability through adoption of the Tango Charlie initiative may be summarised as follows:

a. Better than 30% improvement in the maximum payload capacity of the RAAF Caribou aircraft.
b. More than 60% improvement on radial piston powered aircraft's maximum payload range.
c. Safety improvements to the plane's impressive Short Take Off & Landing (STOL) performance.

d. Over 10% increase in cruise speed and 30% reduction in time to climb to cruising altitude.

e. Higher cruising altitudes resulting in better efficiency and greater ferry range.

f. Increased aircraft availability on flight lines (Fleet has averaged 5 out of 14 over past 4 years).

g. Safer, more reliable, more flexible and more responsive operations of the Caribou aircraft.

h. More cost effective employment of the light tactical, total airborne rapid mobility capability.

i. Commonality in fuel with the rest of the ADF fleet of aircraft (AVTUR as opposed to AVGAS).

j. Commonality in satisfaction of training needs for engine operations and maintenance.

k. Commonality in engine maintenance support with commercial operators (aviation and maritime).

l. Product and services export opportunities for the Australian Defence Community.

m. Savings of better than AUD$1M per month on the current cost of operating the RAAF Caribou.

n. Potential for savings of AUD$2.5M per month (or AUD$300M over 10 years).

o. A revenue neutral conversion program within 3 to 8 years (with the actual timescale dependent on the level of savings achieved within current budgets).

Most of these benefits are already well understood and would be "a given" as a result of the Tango Charlie engine conversion. Some need further validation and development, such as l. and n. We feel the most cost effective way to do such validation and development would be together, as an IPT.

The IPT's first task would be to finalise the Business Case for moving forward (or not) with the engine conversion and the options available for doing so. Tango Charlie believes a PFI may be the most appropriate mechanism, however this is by no means a forgone conclusion. Being responsible for provision of the Defence capability and as the current, primary customer in Australia, the role of the RAAF in the IPT would include governance of this outcome.

Another important function of the IPT would be to enable the registration of inputs from all stakeholders in the Caribou and its whole of life support. To this end, the Tango Charlie Team recommends the IPT consist of representation from the operators, maintainers, logisticians, regulators, owners/capability managers, and service providers of the RAAF Caribou fleet.

Finally, if the Business Case is proven, then the IPT would set about the detailed planning and contracting/set to work activities. In keeping with Defence's planned restructure and desire for performance measurement, AFTS has suggested use of its Resource Attribution System (ARAS™) to aid in the resource tracking for these activities (including the efforts of Defence IPT members).

Budgetary estimates for these IPT activities have also been provided along with the recommendation that these be managed on the "open book" or "transparent" basis proposed in Reference A.

The Tango Charlie Team is currently awaiting advice on the review of its proposal from Defence and its suggested way ahead. In the meantime, we look forward to favourable consideration and support of what, hopefully, could be one of a number of such Team Australia initiatives within the Australian Defence Community.

Australian Flight Test Services Pty Ltd
13 April 2000