Airbus to Air Tanker – "Voyager"
Geoff Winterbottom – Air Tanker Services

The speaker provided a comprehensive background to the RAF's refuelling aircraft developments from 1982 onwards. These included the staff requirements and the more recent 'Future Strategic Tanker Aircraft' (FSTA) requirement. In March 2008 the latter resulted in the award of a contract to the 'Air Tanker' consortium (jointly owned by Airbus (formerly EADS), Rolls Royce, Cobham, Thales and Babcock) for 14 Multi-role Tanker Transport (MRTT) aircraft, i.e. tanker, passenger and freight aircraft. The contract assures the Royal Air Force aircraft availability over 24 years, as if they were service owned and operated. This capability is provided by a unit at RAF Brize Norton run by Air Tanker Services, and is jointly operated by Air Tanker and RAF personnel. In terms of scale, it is equivalent to the 11th largest airline in the UK. This comparison is apt when one realises that the aircraft are both civil and military registered, and may be hired to civil operators.

The Airbus A330-200 'Voyager' is delivered as a standard 291-seat airliner, is then converted to a multi-role configuration, and put into service as an MRCOA (military registered civil owned aircraft)

Photograph courtesy of Air Tanker Services Ltd

The baseline aircraft is the Airbus A330-200. The aircraft is assembled at Toulouse and treated throughout as a civil airliner. The 14 aircraft are a part of the 1,300 or so A330/A340 airframes that have passed through the Airbus production system. They are a standard variant with the normal A330-200 tankage (this is tip-to-tip integral wing tanks, and includes the centre tank from the A340 variant): it provides a 111 tonne fuel capacity. The aircraft have Rolls Royce Trent 700 engines, which means that 45 per cent by value of the aircraft is UK-originated.

Each aircraft is assembled as a certifiable airliner by Airbus, and delivered as such to Air Tanker complete 291-seat cabin with galleys, toilets and a simple in-flight entertainment (IFE) system. The first task is to militarise the airframe. This is conducted at Gefafe, near Madrid in Spain over 9 months, and requires 100,000 man-hours of effort. One of the first tasks is stripping out of the cabin, then the airframe is jacked across nine points to relieve stress in the fuselage and wings, and access panels are removed. Conversion includes additional tank plumbing for flight-refuelling usage, the fitting of two underwing hose-carrying pods (attached at the same location as the A340's outboard engines), and insertion of a large hose-reel unit in the rear lower cargo hold, with a tunnel through the fuselage skin that allows a centre-line hose to be streamed behind the fuselage. This creates a three-point flight-refuelling tanker capable of greater transfer capacity at any equivalent range than could be achieved by two of the recently retired VC-10 tankers.

Additionally the aircraft is equipped with military communication systems, an array of external cameras, formation lights for night-time refuelling operations and a comprehensive defensive aid suite (DAS). The systems are all controlled from a console aft of the flight deck, and integrating the operation with the flight-crew. There is room for supernumerary crew members, but care has been taken to ensure that the basic two-place workstation concept of the Airbus A330 is embedded and remains unchanged.

Each aircraft has a military and civil registration allocated to it but only one is active at any one time. To change between from the military to the civil register each aircraft has to go through a 'role change' which involves removing all military equipment. When going from a civil to a military registration the reverse is the case. A typical example is the change from operating aircraft as tankers to a 291-seat passenger-carrying capability.

Under the auspices of military-registered civil-owned aircraft (MRCOA) regulations the aircraft is approved by military and civil authorities, and is useable on either military or civilian operations. To any air traffic management unit it is a standard A330-200, and can operate so under a UK civilian registration (G-VYGA to N allocated), or military (ZZ330 to ZZ343 allocated). The two registrations are carried on each aircraft, and can be taped-over/revealed as appropriate. Detailed other changes also take place: for example in civilian use the underwing pods are removed but the centre unit remains below the cabin. In principle, and under increasingly likely conditions as the full fleet is introduced into service, the airliner variant can be leased to commercial airlines.

By March 2014 there were 8 of the 14 aircraft in service, with expectation of the full fleet by September 2016. The Brize Norton base is self-contained, with a two-bay hangar, all supporting technical facilities, administration and training capability. The latter includes a full A330 flight-simulator.

A Tornado and Typhoons in formation with a 'Voyager'

Photograph courtesy of Air Tanker Services Ltd

To date tanker clearance has been achieved with Tornado, Typhoon, C130 Hercules, and E-3 Sentry. Forthcoming clearances will include F-35 Lightning II, F/A-18 Hornet (Spanish AF) and Airbus A400M

The speaker answered a wide-range of question for the audience. About 150 people attended, and Ivor Amos, acknowledging the speaker's presentation style, and the quality of the slide and video material he used, offered a vote of thanks.

Meeting notes by Mike Hirst