

Boeing advanced 747 as tanker

The year was 1977. The US Air Force opened a competition for an aerial tanker to replace the aging Boeing KC-135s. The USAF wanted an Advance Tanker/Cargo Aircraft (ATCA) that could provide multi-mission capability. McDonnell Douglas offered the DC-10 and Boeing offered the 747. Many of the issues then were the same as the KC-X program today.

The Air Force wanted a plane with cargo-carrying capability, longer range and more refueling capacity. Airfield performance, acquisition and operating cost, ramp footprint, technology and more were all considerations by the Air Force.

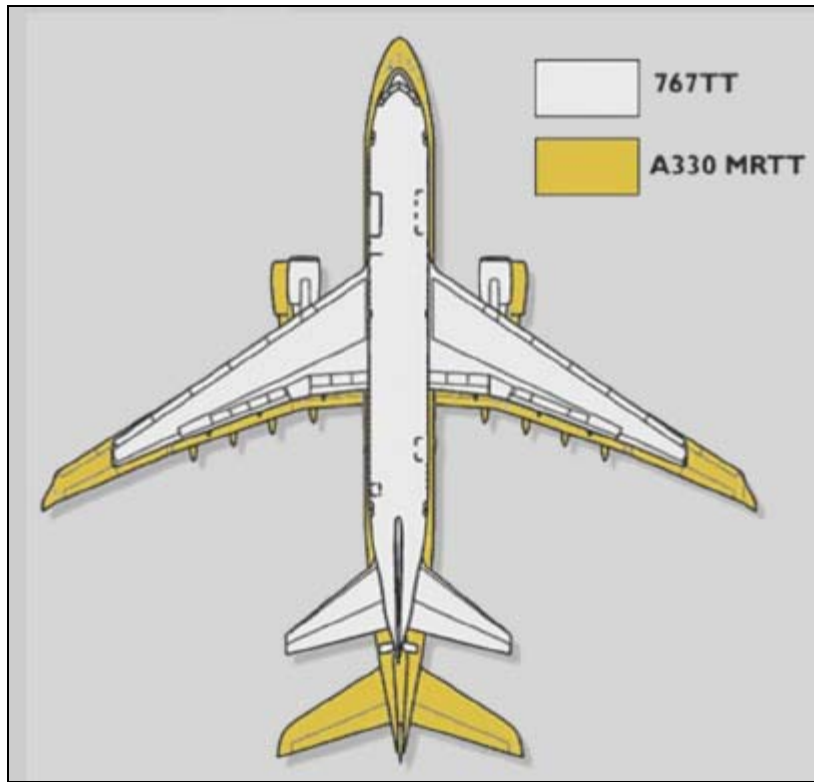
And politics were a part of the equation, too. McDonnell Douglas's DC-10 was struggling. After a crash outside Paris in 1974 of a THY Turkish Airlines DC-10, resulting from a blown aft cargo door that destroyed flight controls due to a design flaw, sales of the DC-10 plummeted. The ATCA contract would be a shot in the arm for the ailing DC-10 production. The California Congressional delegation lobbied hard for McDonnell Douglas to win the competition, and it did. The DC-10 was selected over the 747-200.

(Eerily, after 9/11, Boeing 767 sales dried up and Boeing's proposal for the KC-767 tanker would give the production line a boost, too.)

Among the reasons cited by the Air Force for the selection of the DC-10 was a smaller ramp footprint than the 747, a key point Boeing now advances in its competition for the KC-767 over the Northrop Grumman KC-30. The DC-10 has a wingspan of 165 ft., slightly larger than the 156 ft. of the KC-767; the KC-30 has a span of 197 ft., fractionally larger than the 747-200 span of 195 ft. 8 in. The length of the DC-10-30 is 182 ft; the 747-200 length is 232 ft. This compares with the KC-30 length of 193 ft. and the KC-767 length of 159 ft.

(For further comparisons of key aircraft in the Air Force fleet, the Boeing C-17 is 174 ft. long and has a span of slightly under 170 ft. The Lockheed C-5A dimensions are 222 ft wingspan and 247 ft. length.)

According to one post-procurement analysis, "the Air Force opted for the flexibility and affordability offered by the smaller DC-10 that could operate into smaller and thus more available airfields. In addition...the KC-10's...fly-away cost was less than that of [the 747]."



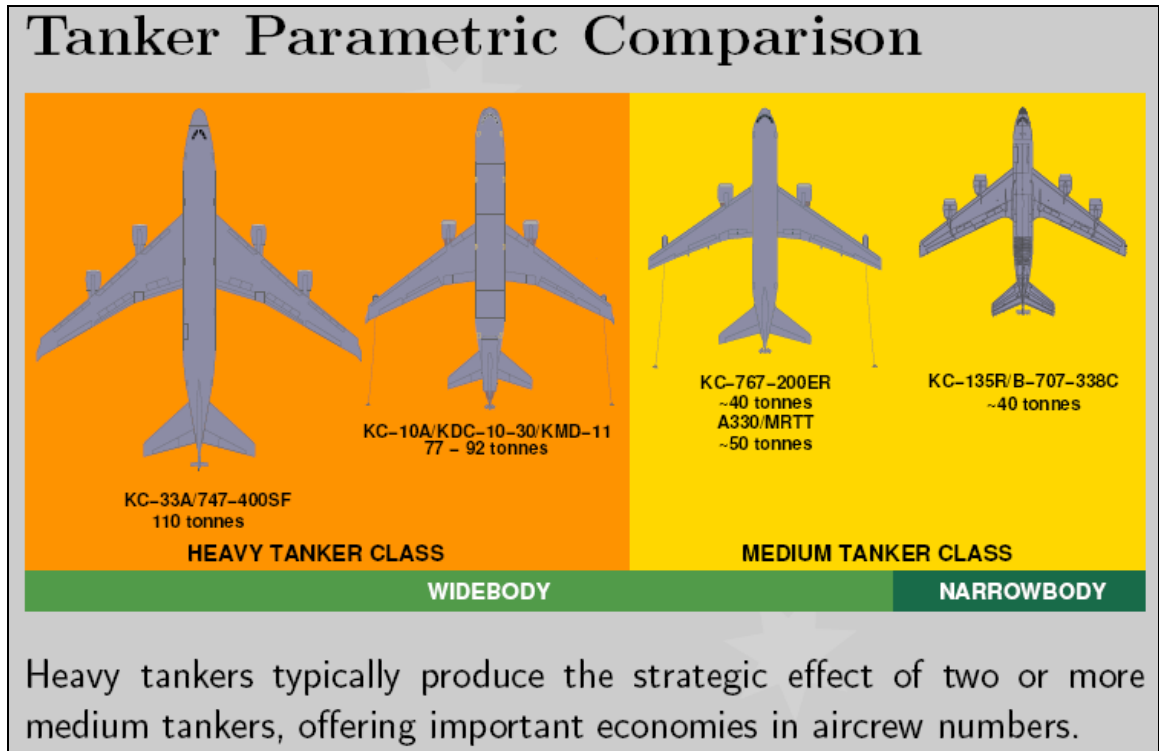
Boeing rendering via Royal Australian Air Force

News articles of the era describe the 747 as more capable than the DC-10 due to its higher cargo, fuel and troop-carrying capacity and more range (all part of the Northrop argument for its KC-30) as well as the 747's nose-loading ability over the standard cargo access via side-door on the DC-10. But technology was considered more advanced on the DC-10, which was designed only a short three years after the 747. Northrop makes the argument that the KC-30, designed 14 years after the 767, is more technologically advanced.

Boeing outfitted a 747 with a KC-135 refueling boom and tested it, and four 747 tankers were delivered to Iran prior to the Revolution. Thus then, as now, Boeing had a tanker program in testing against a new entrant into the aerial tanker refueling field. This is a key argument by Boeing in promoting its KC-767; testing is far advanced compared with the KC-30.



RAAF. KC-25 (B747) in refueling flight tests with a C-25.



RAAF

The RAAF analysis for its KC-135 tanker replacement (actually converted Boeing 707-338s) ultimately rejected the 747-400 conversion project advanced by Boeing as late as 2000 in favor of the Airbus A330 MRTT, also rejecting the KC-767 in the process. While the KC-767 is recognized as a one-for-one replacement of the KC-135, the A330 MRTT is more capable, the RAAF concluded, than the KC-767. A tanker the size of the 747, while having distinct advantages over the A330 or the KC-767, was too big for their requirements.

Overwhelming opinion: first delivery will be delayed

Boeing last week publicly expressed confidence that it will still make its May delivery date to All Nippon Airlines for the 787, but aerospace analysts aren't buying it.

None of the analysts sold off the stock—largely because delays of the first flight originally scheduled for August 27 have long been anticipated—they aren't panicking over the prospect of a delivery delay, either, as long as it is measured in weeks and not months.

An on-line survey at *Flight International* shows 74%-75% of the respondents believe there will be a delay. While not a scientific survey, the results are nonetheless indicative of the skepticism of Boeing's public statements.

We're told from within Boeing that the software issues with Honeywell are more serious than the temporary fasteners and documentation issues. With 6.5 million lines of code, finding and correcting errors is more than just a challenge (just ask Microsoft and its perpetual issues with Windows). Recall that the last time Boeing had serious software issues was with the introduction of the 747-400. Deliveries to launch customer Northwest Airlines were delayed for several months.

Boeing said on the conference call that the first flight of the 787 may come between mid-November and mid-December; we're already hearing that Christmas may be the new target date, but that the situation remains fluid. Representatives of All Nippon Airways are in Everett (WA), the assembly site, and won't be surprised if there are delivery delays, we're told.

Flight International on September 10 posted a quick-and-dirty analysis that concludes if Boeing doesn't get the 787 in the air by mid-December, it won't complete the flight test program on time for a May delivery.

You don't have to be local to appreciate this

Horizon Air, the sister regional airline to Alaska Airlines, produced this highly entertaining micro website. Be sure to click all the buttons along the highway.

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By Scott Hamilton, September 11, 2007