

JOINT PRIMARY AIRCRAFT TRAINING SYSTEM (JPATS)



Joint AF/Navy ACAT IC Program

Total Number of Systems:	740
Total Program Cost (TY\$):	\$3937M
Average Unit Cost (TY\$):	\$5M
Full-rate production:	4QFY00

Prime Contractor

Raytheon Aircraft Company

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The Joint Primary Aircraft Training System (JPATS) is a set of primary flight training devices tailored to meet U.S. Air Force (USAF) and U.S. Navy (USN) aircrew requirements. The principal JPATS mission is to train entry-level USAF/USN student pilots in primary flying skills to a level of proficiency at which they can transition into an advanced pilot training track leading to qualification as military pilots, navigators, and Naval Flight Officers. JPATS is designed to replace the USAF T-37B and USN T-34C aircraft and their associated ground-based training systems (GBTS).

JPATS consists of the T-6A Texan II air vehicles, simulators and associated ground-based training devices, a training integration management system (TIMS), instructional courseware, and contractor logistics support. The Services will acquire common aircraft and the remaining components will be as common as possible. Logistics support will be tailored to each Service's maintenance concept.

The ground and air components of JPATS support the *Joint Vision 2010* objective of preparing joint warriors to meet the challenges of future battlespaces by ensuring that they are properly trained using a common training platform and curriculum.

BACKGROUND INFORMATION

In December 1990, the Joint Requirements Oversight Council validated the JPATS Mission Need Statement. Operational requirements were subsequently codified in the JPATS Operational Requirements Document (ORD). JPATS was designated a Defense Acquisition Pilot Program in the 1994 Federal Acquisition Streamlining Act, becoming the first aircraft program to be selected.

An EOA was conducted during the Source Selection Flight Evaluation from July-October 1994 at Wright-Patterson AFB. Seven candidate aircraft were evaluated, each completing 13 flights. Milestone II was held in August 1995, and the Raytheon Corporation was awarded contracts for Lots 1 and 2, with additional priced options through Lot 8 in February 1996. A Milestone II TEMP was approved in July 1995. The ORD was updated in December 1996 and is currently in revision. Following a source selection process conducted by Raytheon, the GBTS subcontract was awarded to the Flight Safety Services Corporation in April 1997.

Aircraft tests including developmental testing by Raytheon, qualification test and evaluation (QT&E) addressing joint-service requirements, and Federal Aviation Administration (FAA) certification, commenced in June 1996 and will continue through at least August 2000. In March 1997, DOT&E approved a plan for a three-phase OA during QT&E. The first phase of the OA was completed in May 1997. It focused on four key areas: effectiveness and suitability; programmatic voids; program documentation; and the ability to support the aircraft Multi-Service Operational Test and Evaluation (MOT&E). Flight assessment consisted of ten flights and 16 flight hours, conducted from April 22-May 1, 1997, in a non-production representative prototype aircraft. A human factors ground assessment, conducted from May 6-7, 1997, involved 13 Air Force and 15 Navy pilots. Both assessments were conducted at Raytheon Aircraft Company.

Phase II of OA flight testing began in January 1998, with four of ten planned flights completed in the prototype aircraft. Production delays on the EMD article delayed the first flight until July 1998. The remaining six flights of phase II were deleted due to prototype unavailability.

TEST & EVALUATION ACTIVITY

An updated TEMP was approved in January 1999. The TEMP was revised to reflect changes in the ORD, delays in the development and production schedules, and updated GBTS information following selection of a GBTS contractor. That revision contained a more detailed plan for testing the requirements of all GBTS components and the full range of air vehicle missions described in the ORD. The TEMP is currently in revision to support the Milestone III scheduled for September 2000.

The FAA awarded Raytheon a Type Certificate for the Model 3000 aircraft (a variant of the T-6A) in July 1999. However, delays in achieving FAA certification resulted in a breach of the Acquisition Program Baseline schedule so the program was re-baselined in February 1999. At that time, the Milestone III date was moved from January 2000 to June 2000. Subsequently, it was further delayed to September 2000 because of engine anomalies. The start of MOT&E was moved correspondingly.

Phase III of the OA was completed in April 1999. The T-6A aircraft was determined to be potentially operationally effective and suitable. However, four critical deficiencies were identified which require correction prior to the start of MOT&E. These deficiencies involved the environmental control system, canopy, automatic airstart, and flight/maintenance manuals. Corrective actions for three additional deficiencies involving the power control lever, the nosewheel steering, and the ejection seat should be completed prior to initial delivery to the Aerospace Education and Training Command.

In September 1999, the PEO certified the T-6A as ready to begin MOT&E. AFOTEC's acceptance of the PEO certification is pending resolution of aircraft engine problems thought to be resolved last summer but recurring after certification. A combined AFOTEC/OPTEVFOR test team is in place at Randolph AFB. Maintenance and pilot training have been suspended during analyses of the engine problems. MOT&E will commence after resolution of the engine anomaly and government acceptance of the aircraft.

Developmental testing of the aircraft by Raytheon and QT&E by the Air Force and Navy have also been temporarily suspended. Acceptance of the first production aircraft, originally targeted for February 1999, is now scheduled for February 2000.

TEST & EVALUATION ASSESSMENT

MOT&E of the aircraft is now planned between February 2000 and August 2000. Formal acceptance of the first production aircraft remains a prerequisite to the start of MOT&E testing. GBTS MOT&E is currently intended to have two phases: a short in-plant MOT&E in summer 2000 and a six-month on-site MOT&E at Randolph AFB in early 2001. At this time, only the brief initial evaluation of GBTS will be complete before the aircraft Milestone III in September 2000.

Significant progress has been made this year in resolving deficiencies that have delayed the start of aircraft MOT&E. For example, the flight manuals are now in a state of maturity that allow for safe operation of the aircraft. The full operational envelope has been cleared for automatic airstarts, which will be evaluated by the operational testers. Concerns regarding canopy opening and closing will be reexamined during MOT&E.

The environmental control system is still an issue. Adequate cooling of the cockpit has not been fully evaluated with a production representative system by the operational community in typical operational environments nor does it meet system specifications. Cockpit temperatures near 100 degrees farenheight have been recorded. In addition, contractor testing will not be complete prior to the start of MOT&E. Remaining contractor testing will involve an icing transition demonstration that would clear the aircraft to fly through 5000 feet of light rime ice and wet runway operations.

A System-Level Formative Evaluation (SLFE) of the integrated GBTS components is scheduled to start in December 2000. As stated in the TEMP, the SLFE will evaluate, for the first time, whether a suite of JPATS GBTS components have the capability to operate as an integrated system. A dedicated period of MOT&E is planned to be conducted at Randolph AFB in conjunction with the SLFE. This will represent the first opportunity to evaluate, in part, the integrated JPATS, including the aircraft and GBTS, from an operational perspective.

An additional concern of DOT&E is the development and test schedule of GBTS, notably the TIMS component, in relation to the Milestone III decision date. GBTS is currently in the early stages of

development. Planned DT&E of aircrew training devices will extend at least until May 2000, with emphasis on testing of individual components. In-plant MOT&E of GBTS is planned for June 2000. It will consist of an over-the-shoulder assessment conducted on a non-interference basis at the contractor's plant during DT&E. Since the SLFE and the dedicated MOT&E will occur after Milestone III, a supplemental DOT&E B-LRIP report will be sent to Congress after GBTS MOT&E.