

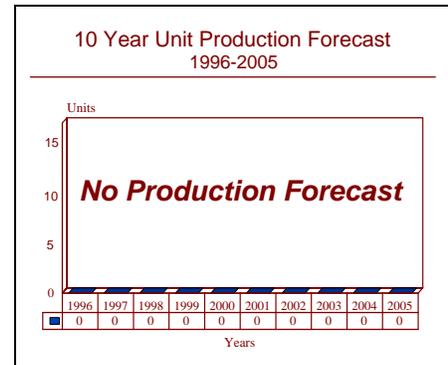
# ARCHIVED REPORT

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## USAF/US Navy Joint Primary Aircraft Training System (JPATS)

### Outlook

- Raytheon Aircraft Company's Beech Mk II, a PC-9 derivative, has been chosen as the JPATS winner.
- See the Pilatus PC-9 report for a forecast of the PC-9 Mk II.



### Orientation

**Description.** Primary/intermediate military flight training aircraft requirement of the US Air Force and US Navy. Will replace Air Force/Cessna T-37 and Navy/Beech T-34 trainers.

**Sponsor.** US Air Force Aeronautical Systems Center, Wright-Patterson AFB, OH, USA, and the US Naval Air Systems Command, Washington, DC, USA.

**Contractors.** Raytheon Aircraft Company, Wichita, KS, USA.

**Status.** Raytheon's Beech Mk II, a derivative of the Pilatus PC-9, was selected as the JPATS winner in June

1995. Planned procurement totals are 372 new trainers for the Air Force and 339 for the Navy.

**Total Produced.** Not applicable.

**Application.** Primary/intermediate flight, navigation, and weapons training.

**Price Range.** The JPATS manufacturing development, production, and initial support program has been budgeted at \$7.0 billion. However, it is anticipated that the final program cost will be less than this amount.

### Technical Data

**Design Features.** Not applicable. The Beech Mk II was ultimately selected from a multitude of candidates, including turboprop-, turbojet-, or turboprop-powered aircraft.

**Crew.** Two, in tandem arrangement with ejection seats.

### Variants/Upgrades

Not applicable.

## Program Review

**Background.** The US Air Force/US Navy Joint Primary Aircraft Training System (JPATS) program had its origin in the USAF/Fairchild T-46 Next Generation Trainer. Following an Air Force decision to terminate the T-46 program in 1986 due to affordability and technical problems, Congress ordered the service to conduct a competitive fly-off between the T-46, the existing T-37, an upgraded T-37, and other suitable aircraft. However, a fly-off in this format was never held, and the T-46 was killed for good in 1987.

The Air Force, meanwhile, still needed a new primary trainer. Its trainer program became the Primary Aircraft Training System (PATS), which was redesignated in 1989 the Joint Primary Aircraft Training System to reflect Navy participation. USAF decided to acquire an off-the-shelf aircraft to fill the role and, in the meantime, initiated a T-37 Service Life Extension Program (SLEP) to keep existing T-37s flyable until JPATS deployment. The T-37 SLEP consisted of the refit of five structural components,

with over 500 aircraft being upgraded. All reworked T-37s have been redelivered to the Air Force.

US Navy Enters the Program. In 1989, the US Navy joined the PATS effort, having its own replacement requirement for some 340 Beech T-34C Turbo-Mentor training aircraft. The program became a joint effort and thus JPATS was born.

JPATS Competitors. The main elements driving the JPATS program were affordability and low risk. The US Air Force and Navy were not concerned with the type of propulsion used on the JPATS winner as long as it met the program requirements; thus the appearance of turboprop-powered aircraft along with the majority of jets among JPATS contenders. The turboprop-powered PC-9 and EMB-312H, with missionization, could both meet the services' requirements.

At least 25 aircraft were originally identified as JPATS candidates. The leading contenders (with US prime contractors listed) were as follows:

<b>Firm (US Prime)</b>	<b>Aircraft</b>	<b>Engine</b>
AerMacchi (Lockheed Martin)	MB.339	RB.582
Agusta (Northrop Grumman)	S.211A	JT15D-5C
AMC (Vought)	Pampa 2000	TFE 731
Cessna	CitationJet	FJ44
DASA (Rockwell)	Ranger 2000	JT15D-5C
EMBRAER (Northrop Grumman)	EMB-312H	PT6A-68
Pilatus (Beech)	PC-9 Mk II	PT6A-68

In late 1994, the US Air Force informed Vought that the service had dropped the Pampa 2000 from the JPATS competition. USAF cited "technical deficiencies" as the reason for its action.

JPATS Requirements. The JPATS trainer must have a stepped tandem seating arrangement for student and instructor, thus eliminating all side-by-side trainers. It must be equipped with ejection seats, and a canopy that can withstand the impact of a 1.8-kilogram (4.0-pound) bird at 250 knots. The aircraft must demonstrate a consistent and predictable ability to spin and recover. A projected life-cycle of 20 years is required. (If an aircraft were offered with a 30-year life cycle, and was affordable, it could immediately have become a factor in the competition.)

The JPATS aircraft must have the ability to land in a crosswind of at least 25 knots. Pressurization was required. The aircraft must also be capable of an airspeed of 250 knots at an altitude of 500 feet.

The only differences between the Air Force and Navy aircraft will be the paint scheme and the ejection seat

handles (side pull for the Air Force; center pull for the Navy). The services were determined not to allow any changes that would force a difference in the production line.

In November 1991, the Air Force and Navy issued a Joint Service Operational Requirements Document, which generally contained no surprises for the potential competitors. The requirements emphasized the "joint" nature of the program.

The JPATS program's long-awaited initial draft request for proposals (RFP) was issued in March 1993, and was quickly followed by another draft RFP in July 1993. The final RFP was issued in May 1994.

In July 1993, Undersecretary of Defense for Acquisition John Deutch issued an Acquisition Decision Memorandum that directed the Air Force to assure that the JPATS system accommodate not less than 80 percent of the population of eligible women.

Ground-Based Training System. The JPATS effort is actually an overall training program composed of three main elements: the primary trainer aircraft itself, a ground-based training system (including simulators and courseware), and logistical support. Companies wishing

to supply the ground-based system compete for the award separately from the airframe competition. Candidates include McDonnell Douglas, CAE-Link, FlightSafety International, Hughes, Loral, and AAI.

## Funding

Recent and planned US JPATS funding is as follows:

	<u>US FUNDING</u>							
	<u>FY94</u>		<u>FY95</u>		<u>FY96 (Req)</u>		<u>FY97 (Req)</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
Procurement	-	-	3	92.7	3	55.0	12	109.1
RDT&E	-	3.2	-	40.4	-	49.6	-	80.1

All \$ are in millions.

**Analysis.** In June 1995, Raytheon Aircraft Company's Beech Mk II was announced as the winner of the JPATS competition. Under this program, Raytheon will produce 372 aircraft for the US Air Force and 339 for the US Navy. Production will extend through the year 2017. The initial flight of the first JPATS aircraft off the production line is scheduled for December 1998.

As the JPATS winner, the PC-9 Mk II will have a huge advantage over any competitor in the international military

trainer market. Many countries that have a trainer requirement have been waiting for the JPATS winner to be selected so that they could have the benefit of buying an aircraft produced in high numbers at low cost.

Cessna, Rockwell, and Lockheed Martin all protested the selection of Raytheon for the JPATS program. Lockheed Martin, however, has since withdrawn its protest. Rockwell's protest has been denied by the US General Accounting Office (GAO).

## Recent Contracts

None.

## Timetable

	1987	T-46 program canceled
Late	1987	USAF sought T-37 SLEP bids
	1989	Navy joined PATS; effort renamed JPATS
Nov	1991	JSORD issued to contractors
Mar	1993	Issuance of draft RFP
Jul	1993	Issuance of latest draft RFP
May	1994	Issuance of final RFP
Jun	1995	Beech Mk II selected as JPATS winner
Thru	1990s	Production for JPATS to continue beyond the year 2000

## Worldwide Distribution

Not applicable.

## Forecast Rationale

The US Air Force and Navy plan to purchase a total of 711 PC-9 Mk IIs. We are also anticipating several hundred additional aircraft to be sold on the international market. We have projected shipments to export customers to begin just after the turn of the century.

## Ten-Year Outlook

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See our forecast of the PC-9 Mk II in the Pilatus PC-9 report in this binder.