

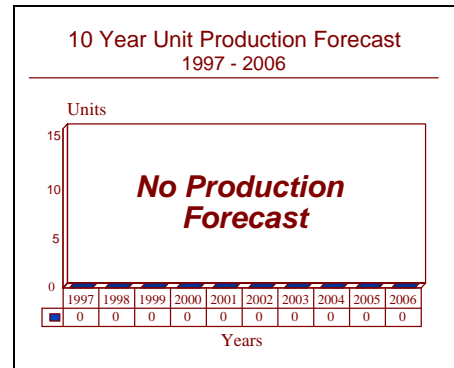
ARCHIVED REPORT

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Agusta/SIAI-Marchetti S.211 - Archived 2/98

Outlook

- No further production
- Philippine air force looking at more modern, more capable aircraft and unlikely to convert S.211 options



Orientation

Description. Single turbofan-powered, tandem seat, intermediate/advanced military training aircraft.

Sponsor. The S.211 is privately sponsored and supported by Agusta.

Contractors. Gruppo Agusta, Sesto Calende Works, Sesto Calende, Italy.

Licensees. Singapore Aircraft Industries, with some components provided by Singapore Aerospace Manufacturing. Philippine Aerospace Development Corp.(14 of 18). Grumman Aerospace, Bethpage, New York, USA (For JPATS).

Status. Production of S.211 completed in 1990. S.211A (USAF/USN JPATS candidate) modified by Grumman and Agusta in unsuccessful bid for JPATS contract.

Total Produced. 58 S.211s were produced. Two S.211 prototypes modified by Grumman and SIAI-Marchetti for the USAF/USN JPATS competition.

Application. Intermediate/advanced pilot, navigation, and armament training.

Price Range. S.211 unit flyaway cost estimated at \$4.5 million; S.211A unit flyaway estimated at \$3.85 million; both in 1994 US dollars.

Technical Data

(S.211 Basic)

Design Features. Shoulder-wing design, supercritical airfoil section was developed with computer. Design goals included overall small dimensions, low fuel consumption and high performance.

Dimensions	Metric	US
Length overall	9.31 m	30.54 ft
Height	3.8 m	12.47 ft
Wingspan	8.43 m	27.66 ft

Weight

Weight, empty	1,850 kg	4,078 lb
Max gross weight, "clean"	2,750 kg	6,063 lb
Maximum payload	660 kg	1,455 lb
Internal fuel	622 kg	1,371 lb
External fuel	390 kg	860 lb

Performance

Max speed, 7,620m (25,000 ft)	667 km/h	361 kt
Service ceiling	12,190 m	40,000 ft
Range, internal fuel at 9,145m (30,000 ft)	1,668 km	900 nm
Ferry Range, external fuel 270 kts, 30,000 ft alt.	2,483 km	1,340 nm

Propulsion

S.211	(1)	P&WC JT15D-4C non-afterburning turbofan rated 2,500 lbst (11.12 kN).
S.211A (JPATS)	(1)	JT15D-5C turbofan rated 14.25 kN (3,190 lbst).

Armament. Four underwing hardpoints. Total stores capacity, 660 kg (1,455 lb). Ordnance includes four single or twin gun 7.62 mm machine gun pods, four 12.7 mm gun pods, two 20 mm cannon pods (inboard only), Matra F2, LAU-32, or AL-6-80 rocket launchers,

four bombs or practice bombs up to 150 kg each, or (inboard only) two 300 kg napalm or standard bombs, four 74 mm cartridges launchers.

Crew. Two, seated in a stepped tandem cockpit.

Variants/Upgrades

S.211 Advanced. Forecast International provisional designation for a planned stretch of the aircraft including an uprated engine, in which configuration it would offer a limited close air support capability. Aircraft would be developed only if the S.211A were selected for the USAF/USN JPATS.

S.211A JPATS. Basic aircraft specifically configured for the US Air Force/Navy Joint Primary Aircraft Training System (JPATS) program with higher fuel

capacity, a 3,190 lbst JT5D-5C turbofan, and a +7G/ -3.5 limit. Other modifications include the addition of 30 gallons of fuel for a total of 240 US gallons, single point refueling, two cockpit electronic flight information displays, and airframe and landing gear reinforcement to handle the increase in maximum takeoff weight from 6,944 to 7,716 lbs. Equipped empty weight is 4,453 lbs versus the S.211 standard 4,078 lbs. Full flap stall speed increases to 82 kt from 74 kt.

Program Review

Background. In the early 1970s, SIAI-Marchetti launched studies of a new basic trainer, and originally looked into re-engining its very popular SF.260 piston-powered trainer. The manufacturer subsequently opted for turbofan power, however, and displayed a scale model of its new proposal, designated S.211, at the 1977 Paris Air Show. A go-ahead was announced in mid-1979, and the first of two prototypes flew in April 1981.

Sales of the S.211 were slow to materialize, the largest to date being the 30-unit order by the Air Force of Singapore. Haiti acquired four and there have been reports of a modest sale to Somalia. The aircraft delivered to that country have since been reported as having been sold or transferred to Uganda. Neither sale has been confirmed.

In September 1988 Agusta announced that the Philippine air force had purchased 18 units (with options on 18 more), valued at approximately \$78 million. The contract committed Agusta to the transfer of aircraft component manufacturing technology to Philippine Aircraft Development Corporation (PADC). PADC assembled 14 of the 18 S.211s ordered, and delivered the last of these in 1991. The contract included options on an additional six kits slated for delivery to PADC in 1993, but this has not occurred in spite of four of the original 18 aircraft having been lost to attrition.

US Air Force/Navy Joint Primary Aircraft Training System. The S.211 was one of many aircraft offered for the USAF/USN Joint Primary Aircraft Training System (JPATS) requirement to replace USAF/Cessna T-37 and USN/Beech T-34 trainers. In October 1988, Agusta and Grumman signed a memorandum of intent covering

JPATS, with the S.211 the aircraft to be submitted by the new team. Grumman acted as system integrator, aircraft producer (Grumman was to build about 65 percent of a S.211 JPATS aircraft), and supplier of the entire training system including simulators, courseware,

and product support under the JPATS single-contractor acquisition process. GM Hughes Training Systems left the Lockheed/AerMacchi team in late 1991 and signed on with Grumman in May of 1992. The Beech/Pilatus PC-9 Mk II was selected as the JPATS finalist in 1995.

Funding

Italian government funding for the S.211 does not exist. JPATS total program cost is estimated at \$3 billion, of which \$300 million is for the ground based training system components.

Recent Contracts

None noted.

Timetable

Mid	1970s	Design initiated
Jun	1977	Scale model displayed at Paris Air Show
Late	1977	Design configuration finalized
Jun	1979	Go-ahead announced
Apr	1981	Prototype first flight
Nov	1983	Singapore ordered 30 aircraft
Nov	1984	Initial deliveries to Singapore
Sep	1988	Philippines ordered 18 aircraft with 18 on option
Feb	1989	Agusta signed accord with Grumman for USAF PATS requirement
Late	1989	PADC delivered first S.211
	1990	Final S.211 deliveries
May	1992	Hughes joined Grumman and SIAI-Marchetti on JPATS
Jul	1992	Grumman began USAF JPATS flight evaluations with the S.211A
Feb	1995	PC-9 Mk II selected as JPATS finalist

Worldwide Distribution

(As of October 31, 1996)

Singapore	29
Philippines	18
Grumman USA	2

Forecast Rationale

Having been unsuccessful in its JPATS bid, the S.211 now appears to be a dead issue. There has been periodic speculation that the Philippines would exercise options held on six more aircraft but this has not occurred and, in fact, the island nation has since turned its attention

toward acquiring Kfirs from Israel and/or used F-16s from the United States.

In light of the above, we are not forecasting further S.211 production.

Ten-Year Outlook

No further production.

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