NATO Airborne Early Warning & Control Force, E-3A Component, Public Affairs Office
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The NATO E-3A Aircraft

Primary function: Airborne surveillance, command, control and communications

Power plant: four TF33 Pratt & Whitney 100A turbofan engines

Thrust: 20,500 lbs. Each engine/9.523,5 kp each engine

Dimensions:

Aircraft
wingspan: 44.45 m / 145 ft 9 in
length: 46.68 m / 152 ft 11 in
height: 12.70 m / 41 ft 9 in

Rotodome
diameter: 9.1 m / 30 ft
thickness: 1.8 m / 6 ft
height: 3.35 m / 11 ft
rotation: once every 10 seconds

Speed: more than 800 kph / 500 mph

Operational altitude: above 9,150 m / 30,000 ft

Maximum take-off weight: 147,429 kg / 325,000 lbs

Fuel capacity: 89,610 liters / 70,371 kg
22,768 gallons / 148,000 lbs

Endurance: more than 10 hours
all E-3A aircraft are air-refuelable

Armament: none

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Aircrew:

Flight Crew
2 pilots
1 navigator
1 flight engineer

Mission Crew
1 tactical director
1 fighter allocation officer
2 weapons controllers
1 passive controller
1 surveillance controller
3 surveillance operators
1 communications technician
1 radar technician
1 system technician

Total number can vary for a specific mission.

Radar coverage:

One E-3A flying at 30,000 ft / 9,150 m has over 312,000 km^2 in its field of view. Three E-3As in overlapping orbits can provide complete coverage of Central Europe. An E-3A can detect low-flying targets within 400 km or 215 nautical miles and medium-altitude targets within 520 km or 280 nautical miles.

Prime contractor:

The Boeing Company, Seattle, Washington, United States.

Locations:

Main Operation Base (MOB)
Geilenkirchen, Germany

Forward Operating Bases (FOBs)
Konya, Turkey
Aktion, Greece
Trapani, Italy

Forward Operating Location (FOL)
Oerland, Norway.

Cost per aircraft:

70 million US dollars (June 1977)

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NATO E-3A Modernization Program

In 1987 NATO commanders accepted the proposal for a comprehensive modernization program for the NATO E-3A AWACS fleet. Several years later, the participating nations agreed to fund this program. The ongoing improvements to the communication, navigation, console and radar equipment started in 1991 and the NMT retrofit was completed in December 2008.

Dec 1978	NATO decision to acquire a fleet of 18 NATO E-3A AWACS aircraft
1979-1985	Establishment of the NATO E-3A fleet. (System technology of the mid–1970's)
1987	Major NATO commanders agreed to a NAEW System Improvement Plan (NASIP) containing near-, mid- and longterm operational requirements for the modernization of the NATO E-3A fleet
1990	NAPMO Programme nations agreed to fund the NATO E-3A near-term modernization program
1991-1999	Implementation of the nearterm programme: The first phase, consisting of computer memory upgrade, anti-jam UHF communications, operator consoles with coloured displays, new data link system (Link 16 and Electronic Support Measures (ESM) equipment, was completed in 1997 and the second phase, the Radar System Improvement Program (RSIP), was completed in January 2000
1994	Major NATO commanders and NAEW Force Command reassessed and prioritised the mid-term operational requirements
1997	Approval of the NATO E-3A Mid-Term Modernization Program by the NAPMO Board of Directors
1998-2007/8	Implementation of the Mid Term Modernization Program consisting of nine major projects: • improved human – machine interface • multi-sensor integration • automated digital communication switching • navigation system improvement (GPS/GINS) • wide spectrum VHF radios • UHF satellite communications • additional display consoles • new IFF transponder • new IFF interrogator
Dec 2008	NMT Modernization Program completed, including the retrofit of 17 E-3As and two Mission Simulators. Total cost: 1.6 billion US dollars.