



FACT SHEET

NATO Airborne Early Warning & Control Force

E-3A COMPONENT, Public Information Office

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The NATO Airborne Early Warning & Control Force

In the early 1970's, studies directed by NATO's major military commanders showed that an airborne early warning (AEW) radar system would significantly enhance the Alliance's air defense capability. In December 1978, the Defense Planning Committee signed a Memorandum of Understanding to buy and operate a NATO-owned AEW system. With this decision the member nations embarked in NATO's largest commonly funded acquisition program.

The NATO Airborne Early Warning & Control (NAEW&C) Force was established in January 1980 and granted full NATO Command Headquarters status by NATO's Defense Planning Committee on 17 October 1980. Force Command Headquarters is located with Supreme Headquarters Allied Powers Europe (SHAPE) in Mons, Belgium. While the NAEW&C Force supports two major NATO commands – Allied Command Atlantic (ACLANT) and Allied Command Europe (ACE) – SHAPE exercises administrative control of the force.

The NAEW&CF mixed force consists of two operational elements (Components): the NATO E-3A Component at Geilenkirchen, Germany with 17 Boeing NATO E-3A aircraft and a second component, No. 8 (Airborne Early Warning) Squadron of the British Royal Air Force (RAF) at Waddington, United Kingdom, with 7 Boeing E-3D aircraft. The E-3D Component declared its Initial Operating Capability on 1 July 1992, bringing the NAEW Mixed Force Concept to reality.

The NATO E-3A Component is represented by international members from 12 nations (Belgium, Canada, Denmark, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, Turkey and the United States). The E-3As have been operating from the Main Operating Base (MOB) at Geilenkirchen, Germany, since February 1982. Forward Operating Bases (FOBs) are located at Trapani, Italy; Aktion, Greece; Konya, Turkey and a Forward Operating Location (FOL) at Oerland, Norway.

The E-3D Component, No.8 (AEW) Squadron of the RAF, is manned only by RAF personnel and its Main Operating Base (MOB) is RAF Waddington in Lincolnshire, United Kingdom.

When operating at an altitude of about 30,000 feet, an E-3A aircraft can continuously scan more than 312,000 km² of the earth's surface. Operating well within Western airspace, such aircraft can provide early warning about low-flying intruders into the NATO area as well as high altitude coverage extending deep into the territory of a potential aggressor. While the Force's principal role is air surveillance, it provides economical communications support for air operations, including counter-air, close air support, rescue, reconnaissance and airlift as well as surveillance and control. Aircrews can exchange information with ground- and sea-based commanders since the E-3As/E-3Ds can use maritime mode radar to detect and monitor enemy shipping.

The AEW radar is able to "look down" and separate moving targets from the stationary ground clutter that confuses other radar. It adds the ability to detect and track enemy aircraft operating at low altitudes over all terrain and to identify and give directions to friendly aircraft operating in the same area. In addition, the E-3A's mobility allows it to be deployed rapidly where it is most needed and makes it far less vulnerable to attack than ground-based radars.



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The E-3A Component

The E-3A Component is one of the two operational elements of the NATO Airborne Early Warning & Control Force. It is NATO's only operational unit, making it unique in military history.

The Component's mission is to provide aircraft and trained aircrews to deliver a surveillance and/or control platform whenever directed by the NATO Airborne Early Warning & Control Force Commander on behalf of the major NATO commanders: The Supreme Allied Commander, Europe (SACEUR) and Supreme Allied Commander, Atlantic (SACLANT).

The actual build-up of the E-3A Component started in January 1980; in October 1980 it was granted the status of a NATO International Military Headquarters by the NATO Defense Planning Committee (DPC). Flying operations began in February 1982 after delivery of the first E-3A aircraft. The Component was officially activated on 28 June 1982 and reached "Full Operational Capability" by the end of 1988.

The Component consists of five main functional areas: the Operations Wing, Logistics Wing, Base Support Wing, Training Wing and Mission Support Wing as well as other normal staff functions. Each of these major units is commanded by a colonel from a variety of NATO nations. The position of the Component commander alternates between a German and American Brigadier General. Overall integrated manning of the Component consists of about 2,500 multinational military and civilian personnel assigned with an additional 450 military and civilian personnel in support functions, like base civil engineering, national support units and morale and welfare activities.

Seventeen E-3A aircraft and three trainer cargo aircraft (TCA) are assigned to the Component. Normally, only a number of the E-3As is at NATO Air Base Geilenkirchen at any given time. The remainder deploys to the Component's Forward Operating Bases in Aktion, Greece; Trapani, Italy; and Konya, Turkey and its Forward Operating Location at Oerland, Norway or other allied airfields. Each of the forward facilities is located on a national installation, although the Component has about thirty personnel at each site. They are NATO personnel assigned to the Component, but all of them are from the respective host nations.

Thirty multinational aircrews from 12 of NATO's 19 nations are assigned to the Component's three operational flying squadrons to fly the aircraft and operate its sophisticated surveillance system. The Aircrew Training Squadron and Trainer Cargo Squadron are also flying squadrons but are part of the Training Wing.



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The E-3A Component's emblem

The distinctive NATO Airborne Early Warning & Control Force Command's E-3A Component insignia is composed of a NATO star, three lightning bolts emanating from an E-3A aircraft silhouette, super-imposed over a fortress wall on a blue background.



The NATO star symbolizes the Component's multinational members who operate and support NATO's first and only multinational flying unit. The E-3A aircraft silhouette depicts an operational flying unit on airborne station performing critical surveillance early warning duty. The silver lightning bolts portray the rapid dissemination of early warning information to the Alliance's major commands.

The fortress curving across the horizon represents NATO's defensive forces, constantly on alert to maintain and strengthen the free world. The blue sky illustrates the operational element where NATO Air Force members serve and fly the NATO E-3A. The entire insignia exemplifies NATO's resolve to cooperate and maintain NATO's military strength.



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History of NATO Air Base Geilenkirchen

Home of the NATO Airborne Early Warning & Control Force Command's E-3A Component, NATO Air Base Geilenkirchen is located four kilometers west of Geilenkirchen, the Federal Republic of Germany, adjacent to the Netherlands border.

The Component's Main Operating Base (MOB) was handed over to NATO from the host nation on 31 March 1982.

Surrounded by farmland and a natural woodland preserve, the base was originally built by the British Royal Air Force after World War II. Known as RAF Geilenkirchen (or Flugplatz Teveren by the local population), the British used the facilities as a fighter installation for various RAF fighter squadrons from May 1953 until January 1968.

Flying operations at Geilenkirchen ended in January 1968, and the installation was handed over to the German Air Force in March 1968. In August 1968 it became the home of the German Surface-to-Surface Missile Wing Number 2 equipped with Pershing missiles and supported by the U.S. Army's 85th Field Artillery Detachment.

After the decision to make the base the E-3A Component MOB, a major construction programme began in 1980 to modify operational and support facilities to accommodate the E-3A unit. Since then the majority of the buildings on base have been renovated to present day standards, and a number of new buildings have been erected.

Major construction on base, that covers 620 hectares/1,530 acres, included a new 3,4 kilometer/10,000 feet runway that is 45 meters/150 feet wide, aprons and taxiways, a control tower, the Mission Support Wing building (which also houses the flight and mission simulator facilities), bachelor's quarters and major renovations to the four existing hangars.

In January 1980 the first Component personnel started arriving at the base. By the end of 1981, the German Pershing Wing had left the base and moved to Niederheid, north of Geilenkirchen while the U.S. Army's 85th Detachment remained on base until being de-activated in July 1991.



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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:	<i>Aircraft</i> Wingspan: 44.45 m / 145 ft. 9 in. Length: 46.68 m / 152 ft. 11 in. Height: 12.70 m / 41 ft. 9 in. <i>Rotodome</i> 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 kmph/ 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 Surveillance Control Officer
1 Passive Detection Controller
3 Surveillance Operators
1 Communications Operator
1 Communications Technician
1 Radar Technician
1 Computer Display 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 km² 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 at 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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The NATO Trainer Cargo Aircraft (TCA)

NATO's Trainer Cargo Aircraft - known as the TCA - is a modified Boeing 707-320C. The pilot's station is almost identical to the E-3A. The aircraft is capable of conducting air refueling training but cannot be refueled in the air for extended flying. The aircraft can be quickly changed from all passenger to all cargo configuration but is usually operated in a combined configuration carrying both cargo and passengers.

Primary function:	Pilot training, cargo and passenger transport support.
Power plant:	Four Pratt & Whitney JT-3D-7 turbofan engines.
Thrust:	19,000 lbs. / 8,837 kp each engine.
Dimensions:	<i>Aircraft</i> Wingspan: 44.45 m / 145 ft. 9 in. Length: 46.68 m / 152 ft. 11 in. Height: 12.70 m / 41 ft. 9 in.
Speed:	More than 966 kmph/ 600 mph.
Operational altitude:	Above 9,150 m / 30,000 ft.
Range:	More than 11,000 km / 7,000 miles.
Maximum take-off weight:	152,727 kg / 336,000 lbs.
Fuel capacity:	89,610 liters/ 70,371 kg
Endurance:	More than 12 hours.
Aircrew:	2 Pilots, 1 Flight Engineer.
Location:	Main Operating Base (MOB) Geilenkirchen, Germany.