

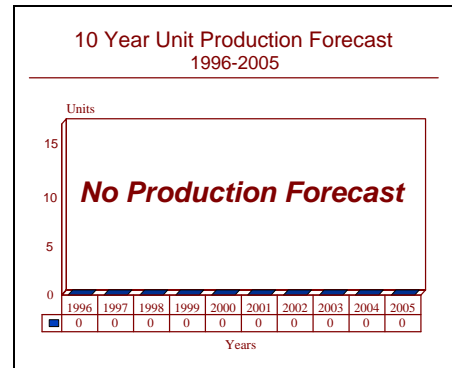
ARCHIVED REPORT

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ERWE - Archived 9/97

Outlook

- Production for Tornado ceased in 1991
- Possibility that it would be used as RWR for German EF-2000 now eliminated



Orientation

Description. Passive radar-warning system designed to provide warning of hostile radar surveillance, tracking and fire control systems and to alert the Tornado crew to radar lock-ons.

Sponsor

Bundesamt für Wehrtechnik Beschaffung (BWB)
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Contractors

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Virginia, VA 22209
USA
Tel: +1 703 276 8300
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Litton Applied Technology
1636 NW Washington Boulevard
Grants Pass
Oregon 97526
USA
Tel: +1 503 479 3331
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Licensee. No production licenses have been granted.

Status. In service.

Total Produced. 212 ERWE systems have been installed on German Air Force Tornado IDS aircraft and a further 35 systems have been acquired for the Tornado ECR. The German Navy operates 112 ERWE-equipped Tornado IDSs, giving a grand total of 359 systems. Overall production probably totals about 400 systems.

Application. The ERWE system was evolved to provide warning of hostile radar surveillance, tracking, and fire-control systems and to alert the Tornado crew to radar lock-ons. Since the combat environment of Western Europe can expose the Tornado to simultaneous illumination by over 1,000 hostile radar, the system obviously requires extreme efficiency.

Price Range. Comparison with the known costs of comparable systems indicates that ERWE has a unit price of approximately US\$400,000.

Technical Data

Design features. ERWE was developed by Litton Industries/ITT Avionics for installation on Luftwaffe/Marinenflieger Tornado strike aircraft. The system includes a fully programmable, digital threat processor and three receiver elements for C-D, wide-band E-J and narrow-band E-J coverage. A crystal video receiver is used for rapid, wide-open detection, while a super-

heterodyne receiver provides high sensitivity and selectivity. The system uses an Itek computer for data collection, sorting, analysis, and priority assignments. A cockpit alphanumeric display is provided to indicate threat priorities. An emitter library is included and is accessible from the cockpit for threat updating. Coproduction arrangements exist with AEG.

Variants/Upgrades

A continuous program of improvements is under way to ensure that the Luftwaffe Tornado force remains viable in the face of increasingly competent air defenses.

Program Review

Background. The original intention was that all variants of the Tornado IDS should carry a standard electronic fit. It quickly became obvious that differences in operating philosophy, electronic warfare techniques, and combat environments made such standardization impractical. Italy, Germany, and the UK have subsequently gone in separate directions and evolved EW fits optimized to their own requirements and budgets. ERWE was developed in Germany between 1979 and 1984 and entered service during that year. It has subsequently been installed on all German Tornado IDS aircraft. ERWE has successfully entered service with the German Air Force and German Navy on board the Tornado IDS. Finally, it joined the German Air Force as part of the avionics fit of the Tornado ECR variant.

The last German Tornado aircraft left the production line in 1991. ERWE production ceased at that time. During late 1992, the German Government attempted to withdraw from the European Fighter Aircraft program on the basis of the excessive costs of that aircraft. This decision was

rescinded following intense political pressure and a major review of the EFA program. As a result, the project was recast as the Eurofighter 2000 (EF-2000) with the consortium members being given the option of replacing cost-intensive onboard systems with less expensive variants. In Germany's case this included replacing the ECR-90 radar with the APG-65, substituting the existing ERWE radar warning system for the EURODASS EW complex and deleting many other options for an estimated 30-percent cost saving. In addition, the Germans would be reducing their buy from 240 to 120 aircraft. In spite of this, the German MoD failed to make its due payments to the EF-2000 development program. This problem was eventually resolved in July 1995 but the entire project remains in extreme jeopardy.

In spite of this, the German Defense Ministry elected in 1996 to purchase the Eurodass defensive aids system for its EF-2000 aircraft on the basis of being a customer rather than a co-developer. This eliminates the last hope of production for a version of ERWE.

Funding

ERWE is a German government-funded program.

Recent Contracts

No contractual information is currently available.

Timetable

Aug	1974	First Tornado prototype flight
Mar	1979	Grumman teams with Panavia for USAF ETF program

Jun		First production aircraft rolled out
Aug		First ADV version rolled out
Oct		First flight, ADV
	1980	First production aircraft delivered to TTTE
Jan	1981	Fourth batch (162) ordered
Aug	1982	Fifth batch (171) ordered
Jan	1984	Sixth batch (155) ordered
		ERWE entered service
May	1986	Seventh batch (124) ordered
May	1990	Eighth production batch canceled
	1991	ERWE production terminated

Worldwide Distribution

ERWE is only in service with the **German** Luftwaffe and Marinenflieger. It is not available for export.

Forecast Rationale

In 1991 the production life of the ERWE system was prematurely terminated as a result of Tornado production cuts related to the changing political circumstances in Europe. RAF and Luftwaffe procurement of Tornado was cut back, both as a result of these developments and due to the lower than expected attrition rate of the aircraft reducing the demand for replacement airframes. The Tornado is scheduled for mid-life updating and modernization programs over the next five to 10 years,

and the system is likely to be continuously improved and enhanced during this period.

Although Germany was projecting the installation of ERWE on its EF-2000 aircraft, our belief that this would not take place has been confirmed and Germany will procure the Eurodass for its EF-2000 aircraft. As a result, we have zeroed out all ERWE production, and this report will be deleted next year.

Ten-Year Outlook

No production is forecast.

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