

# ARCHIVED REPORT

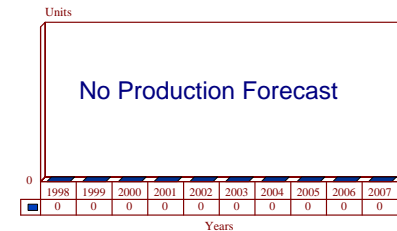
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## GSG-10(V) - Archived 6/99

### Outlook

- Series production completed in early 1980s
- Very limited maintenance support thereafter
- Replacement in service by AFATDS began in 1997

10 Year Unit Production Forecast  
1998-2007



### Orientation

**Description.** Tactical fire direction (TACFIRE) computer system.

**Sponsor**

US Army  
Communications-Electronics Command (CECOM)  
Ft. Monmouth, New Jersey (NJ)  
USA

**Contractors**

Litton Industries  
Data Systems Division  
29851 Agoura Road  
Agoura Hills, California (CA) 91301  
USA  
Tel: +1 818 991 9660  
Fax: +1 818 706 4402  
(Prime: development & production)

**Status.** Production is complete.

**Total Produced.** Estimated production was in excess of 75 systems.

**Application.** Artillery fire control.

**Price Range.** Based on the last production contract, the price was about US\$2.7 million in FY79 dollars.

### Technical Data

**Design Features.** The GSG-10(V) TACFIRE is an integrated on-line computer system, composed of a 6-ton system mounted on a 2½-ton truck and trailer. Its main objective is to automate the computational requirements of artillery fire, on known targets, to assure a first-round hit. Data on all relevant target characteristics gathered by the GSG-10, such as coordinates, degree of protection, movement, etc., are entered into the GYK-29 Battery

Computer System (BCS). The fire direction officer (FDO) then decides on alternative computer solutions for the fire mission.

The TACFIRE system interfaces with the Firefinder weapons-locating system (see the TPQ-36 and TPQ-37 reports) and the GYK-12 computer. The system was first successfully integrated with the UMQ-7 Meteorological Data Sounding System used for weather information.

## Variants/Upgrades

**LTACFIRE.** Light TACFIRE (LTACFIRE) is a light-weight, compact tactical data system developed by Litton for equipping US Army light infantry divisions. LTACFIRE adds computing capabilities to already existing TACFIRE hardware, but keeps the original TACFIRE software. LTACFIRE incorporates all the functions of the GSG-10(V) except technical fire control, which is carried out by the division's GYK-29 BCS. It replaces TACFIRE's awkward procedures with a format that reduces the time needed for operations by displaying

only the proper responses to computer queries. All the soldier then has to do is put his finger on the display screen to select the solution he desires to a particular fire control problem.

The LTACFIRE fire direction center easily fits into the Army's HMMWV, and power is provided by the vehicle's electrical system. Primary components of the LTACFIRE are the PYC-1 Battlefield Command Terminal (BCT) and the PSC-2 Digital Communications Terminal (DCT). Fielding of LTACFIRE was completed in 1993.

## Program Review

**Background.** R&D activities relating to the TACFIRE system took place under PE#23626A in the early 1970s. The Army received US\$33.2 million in FY78 for 11 GSG-10 systems and US\$85.8 million in FY79 for 31 units. However, both houses of Congress canceled the Army's proposed US\$94.8 million procurement program for FY80 and left the Army US\$18.2 million to terminate the program. Nonetheless, in the FY81 RDT&E budget, a new line item appeared called TACFIRE Modular Improvements Program with a budget of US\$3.5 million. As a result, a contract for the communication subsystems improvement was awarded and system software modifications were initiated to allow the TACFIRE program to accommodate the communication system improvement. In 1985, E-Systems, St. Petersburg, FL, was awarded a subcontract by Litton for production of digital plotter spares and replacement for the Army's TACFIRE pro-

gram. Subsequent TACFIRE activity centered upon maintenance to support the system in the field.

The US Army deemed that TACFIRE, with its first-generation technology, would be unable to meet the data processing needs of a fire support system for the 1990s and beyond. TACFIRE's disadvantages include the need for large vehicles, shelters and power-generation equipment, as well as extraordinary training for operators to remain proficient. An additional problem is the great amount of heat that TACFIRE generates, which means that it presents a large infrared signature for heat-seeking weapons. TACFIRE also lacks a secure, reliable communications network that has an adequate transmit/receive capacity. Although most light divisions do not ordinarily field an automatic fire-control system, the sheer bulk of TACFIRE precludes its use by light forces. The system's replacement, AFATDS, entered service in 1997.

## Funding

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No funding identified.

## Recent Contracts

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The last known contracts for this program are the following:

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Litton Systems	0.7	Feb 1988 – GSG-10 Field maintenance support for TACFIRE (DAAB07-88-C-E217).
Litton Systems	0.3	Feb 1989 – GSG-10 support services (DAAB07-88-C-E217).

## Timetable

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<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1974	Development initiated
	1978	Litton awarded procurement contracts
early	1980s	System production complete
	1993	Fielding of LTACFIRE complete
	1997	Replacement of GSG-10 by AFATDS began
	2007	AFATDS fielding expected to be complete

## Worldwide Distribution

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The GSG-10(V) TACFIRE system was unique to US Army artillery formations.

## Forecast Rationale

Since the completion of procurement, the GSG-10 TACFIRE has remained in active use within artillery units assigned to US Army heavy divisions, only to face retirement by the fielding of the Advanced Field Artillery Tactical Data System (AFATDS). Designed to modernize artillery fire control support command, control and coordination systems, AFATDS began to replace the older

system in 1997, not only in heavy division formations and nondivisional artillery brigades, but in light infantry divisions as well.

Production of the GSG-10(V) was completed at least 15 years ago, with only limited maintenance indicated in the late 1980s. No production is forecast, and the report will be dropped next year.