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MSQ-103(V) (Teampack) - Archived 9/96

Orientation

Description. The MSQ-103(V) TEAMPACK SYSTEM is a mobile emitter identification and location system used for signals intelligence (SIGINT).

Sponsor

US Army

Communications-Electronics Command

Ft. Monmouth, NJ

Contractors

ESCO Electronics Corp

St. Louis, MO

(production)

Analytics Inc

Willow Grove, PA

(engineering and technical support)

Bunker Ramo

Westlake Village, CA

(development)

Hughes Aircraft Co

P.O. Box 3310

Fullerton, California 92634

(714) 732-4631

(714) 732-0674 fax

(frequency extension kits)

ROLM MIL-STD Computers Inc

San Jose, CA

(UYK-19 computer)

Status. In service, upgrades and on-going support.

Total Produced. An estimated 95 MSQ-103A/B and 15 MSQ-103C units have been produced.

Application. The MSQ-103, or TEAMPACK, is a mobile electronic monitoring system designed to locate and identify the signals transmitted by surveillance, air defense and mortar/artillery locating radars on the battlefield.

Price Range. \$1.5 million is the unit cost in FY86 dollars.

Technical Data

Characteristics

Frequency Range: 500 MHz to 40 GHz

Design Features. TEAMPACK replaced the US Army aging MLQ-24 system, which only operated up to 10.7 GHz. Components of TEAMPACK include a printer, IF/Video unit, frequency control, power supply and RF test set. The system antenna is rapidly deployable and the MSQ-103 includes a built-in UYK-19(V) ruggedized computer. The antenna system includes a protective covering called Limb Guard.

System data is sent to division level command centers via secure data links. It is one of the inputs to the All Source Analysis System (ASAS).

Operational Characteristics. The MSQ-103(V) features system netting; processing and display for agile emitters; an integrated, automatic north-seeking gyro; frequency extension; and NBC protection. A built-in ruggedized minicomputer processes detected signals. Each TEAMPACK ESM system is independently operated with secure voice and wide band data link to the Forward Control and Analysis Center (FCAC).

The system is designed to operate with the ULQ-14 ground element at MULTEWS and the TSQ-109

AGTELIS system. TEAMPACK systems are fielded at the division level.

Variants/Upgrades

The variants are enhanced systems with improvements to performance, reliability and crew protection. They also operate in a netted system.

The **MSQ-103B** is mounted on an M35 utility truck or light armored vehicle. It is deployed with light forces.

The **MSQ-103C** is housed in a ballistically protected shelter and mounted on an XM-1015 tracked vehicle and deployed with heavy forces to forward locations.

Program Review

Background. R&D efforts for TEAMPACK were accomplished under Program Element 64711A, Project D906, General Support Electronic Warfare Systems. Bunker Ramo was awarded an initial production contract in January 1976 for 10 MSQ-103 production units.

In October 1979, the Army awarded a contract to Emerson (now ESCO) for production of 37 TEAMPACK sets. Emerson completed the first production units of the improved MSQ-103A in September 1982. Emerson subsequently received an Army Electronics Warfare Laboratory contract in August 1983 to perform engineering development of a netted, enhanced MSQ-103A TEAMPACK.

Production of the basic TEAMPACK was completed in 1984. A Product Improvement Program (PIP) for the MSQ-103 began that same year.

Army Modernization Plan. In January 1993, the US Army released its *Modernization Plan*, a 17-volume document which lays out the Army's plan for re-shaping and re-equipping its forces for the future battlefield. Annex I highlighted the plan for Intelligence and Electronic Warfare (IEW) and how it will support the Army's five modernization objectives and the Vision of LAND FORCE DOMINANCE. The IEW Annex outlined the details and rationale for the major programs that are key to achieving the Modernization Vision. These efforts will support:

- Winning the Information War
- Protecting the Force

- Conducting Precision Strikes
- Dominating the Maneuver Battle

Based on lessons learned in Operation Desert Storm, the Army found that its IEW force lacked versatility and balance. Processing and communications capabilities are inadequate, and deployability is limited. Sensor technology is 15 to 25 years old and does not have the needed frequency range, a precise targeting capability, and can not exploit many modern modulation techniques. The platforms are also very support/maintenance intensive and the number needed to support field forces can be a strain on available air and sea lift capacity.

In its plan, the Army noted that during the next decade military forces in many regions will increase their combat capability by acquiring increasingly sophisticated weapons and communications equipment. US forces must be prepared to face a broad array of systems and capabilities. As a result, the Army will have to upgrade older systems or add new, leading edge systems to its inventory.

The major improvements in EW/SIGINT capability are envisioned to be fielded during FY96 through FY99. The new systems will have an open architecture and modular design. Precision and capability will be significantly improved; as will mobility, deployability, balance, and supportability. Keys to this will be fielding the Guardrail Common Sensor, Advanced Quick Fix, and Ground Based Common Sensors, as well as TACJAM-A.

In its annual plan update, the Army continues to maintain EW modernization and system replacement as a priority.

Funding

Funding for ongoing support is included in Operations and Maintenance accounts.

Analysis. The Persian Gulf War proved the importance of signals intelligence. Prior to the start of the ground war, EW specialists had used ELINT and SIGINT assets to thoroughly map Saddam Hussein's electronic order of battle. Once the war started, destructive measures and

jamming effectively shut down Iraqi communications links. Some field units were completely cut off from higher commanders. The high-speed ground war revealed the inadequacy of this and similar equipment. The tracked vehicles suffered breakdowns and did not have

the mobility or speed to keep up with the fast-moving combat forces.

In September 1991, the Army awarded a contract to ElectroSpace Systems Inc to develop the Intelligence and Electronic Warfare Common Sensor (IEWCS). This will be a standardized, interoperable, and interchangeable system capable of signal interception, direction finding and jamming. IEWCS will integrate ground and airborne assets and is targeted for a 1996 completion.

The Ground Based Sensor of the IEWCS will leverage technology from TRAILBLAZER, TEAMMATE, TACJAM, and TEAMPACK systems. The GBS will share common components architecture and software with Advanced QUICKFIX. The ground and air systems will be totally interoperable. Once fielded, the Ground Based Common Sensor (Heavy) will begin to replace individual TRAILBLAZER units.

Recent Contracts

There are no recent contracts over \$5 million recorded.

Timetable

	1975	Development began
Jan	1976	Bunker Ramo received production contract for 10 units
Oct	1979	Emerson won production contract for 37 sets
	1979	Marine Corps abandoned procurement plans for unit
	1984	Production of basic version completed
	1984	Emerson won production improvement contract
	1988	Production of improved version began
Sep	1993	GBCS-L/ONS customer test
Oct	1993	Start GBCS ONE production
Mar	1994	GBCS independent government tests, deliver first ECM subsystems
Jul	1994	Complete development & test of Advanced QUICKFIX/GBCS
Aug	1994	Complete TACJAM-A tests
Sep	1994	Field initial BGCS ONS system
Oct	1994	Award contracts for procurement of GBCS subsystems, award contract for Advanced QUICKFIX engine upgrade
Mar	1995	Initiate GBCS/AQF production
	FY95	Begin planned upgrades to GBCS/AQF
Sep	1996	Complete integration
	FY02	Production end
	FY08	Complete upgrades to GBCS/AQF

Worldwide Distribution

This is a US only program.

Forecast Rationale

With the US Army's new IEWCS equipment, as well its EW Modernization plans, five individual systems will be replaced by the standardized Electronic Vehicle Fighting

System. TEAMPACK support will continue through the initial fielding of the new equipment. After that time, support will fall rapidly as MSQ-103s are retired.

Ten-Year Outlook

No further production expected.