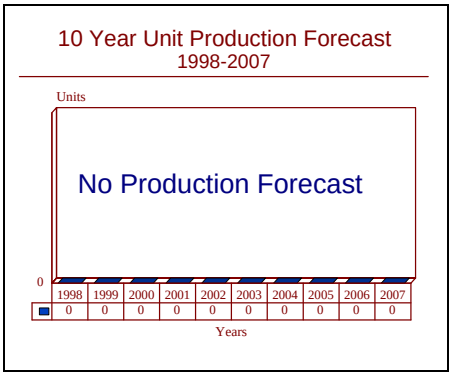
CEIEC MW-5 - Archived 6/99

Outlook

- Substantial number of systems believed to be in Chinese service
- Last export announced a decade ago, though others likely to have occurred
- Lack of publicity and limited market have contributed to zeroing of forecast



Orientation

Description. Mobile fire-control radar usually deployed with anti-aircraft guns.

Sponsor
China National Electronics Import and Export Corporation (CEIEC)
Electronics Building A23
PO Box 140
100036 Beijing
China
Tel: +86 106 829 63 09
Fax: +86 106 821 23 61

Contractors
China National Electronics Import and Export Corporation (CEIEC)
Electronics Building A23
PO Box 140
100036 Beijing
China
Tel: +86 106 829 63 09
Fax: +86 106 821 23 61

Licensee. No information on any production licenses is available.

Status. In service; production status uncertain.

Total Produced. A very roughly estimated 3,440 MW-5 radars have been produced.

Application. The MW-5, trailer-mounted and towed by truck, is tasked with providing target acquisition and fire-control facilities, typically for 57 mm anti-aircraft guns.

Price Range. Indeterminate.

Technical Data

	Metric	US
Characteristics		
Detection range	55 km	34 mi
Tracking range	35 km	22 mi
Tracking accuracy (range)	20 m	65.62 ft
Tracking accuracy (bearing)	1.6 mil	
Tracking accuracy (elevation)	1.8 mil	
Mean transmitter power	120-180 W	
Characteristics		
Operating band (search)	E/F-band	
Operating band (track)	I/J-band	

Design Features. The CEIEC MW-5 is a mobile anti-aircraft fire-control radar, the main elements of which are housed in a four-wheeled trailer-mounted cabin. A circular disk antenna for target search and tracking is mounted on the roof of the cabin. The E/F-band is used for target detection and acquisition. Designation is provided by a long-range 3-D air search radar, such as the JY-8 or JY-8A. I/J-band transmissions are then used for target tracking. ECCM features are incorporated to reduce the system's vulnerability to electronic warfare.

Operational Characteristics. The MW-5 operates in three modes. Mode 1 utilizes conical scanning in the E/ F-band (2-4 GHz) for automatic target acquisition. Mode 2 utilizes false monopulse transmissions for automatic target tracking in the I/J-band (8-20 GHz). In Mode 3 range is measured manually, using the E/F-band, while the angles of the noise source are automatically followed in the I/J-band.

Variants/Upgrades

MW-7-JB. This radar, a product of The Huanghe Machine Building Factory, is likely a variant of the MW-5: it is structurally similar, and possesses the same detection range, tracking accuracy and tracking range. It differs in its operation solely in the I/J-band, and also offers moving target indicator (MTI) processing, automatic switching between modes of operation, and a terminal for linkage with an identification friend-or-foe (IFF) system.

Program Review

Background. The MW-5 can trace its ancestry back to the SCR-584 radar introduced by the United States in World War II and used to engage V-1 missiles. A number of these sets were supplied to the Soviet Union under lend-lease during World War II, and these were subsequently copied to provide a radar fire-control facility for the S-60 57 mm anti-aircraft gun (itself a copy of a prototype German 55 mm anti-aircraft gun captured by the Soviet Union in 1945). Introduced into service in 1950, this Soviet system was named Fire Can and operated in the E-band.

Fire Can was extensively deployed by the Soviet Army, and numerous sets of this type were supplied directly to the Chinese army along with the associated 57 mm guns. The system was upgraded to “Whiff” configuration in the late 1950s, thus introducing a higher antenna gain and E/F-band operation. A further upgrade led to the introduction of the Flap Wheel derivative, which shifted operations to the J-band.

A major Chinese concern in re-engineering the Fire Can system into the MW-5 alleviating the problem of vulnerability to Western ECM techniques. A big step in this direction was the shift to operations in dual-frequency bands, E/F-band for search and I/J-band for tracking. CEIEC has proclaimed the MW-5 to be highly resistant to ECM.

The MW-5 may have entered production around the late 1960s. With the introduction of the HQ-61 missile system in 1986, the MW-5 was eclipsed in importance, but was expected to remain in production and service for some years due to the Chinese army's dependence on the 57 mm anti-aircraft gun for close-in air defense.

In December 1988, the Royal Thai Navy ordered a package of radars and anti-aircraft guns from China for protection of the Songkhla naval base. This purchase included two JY-8A surveillance and target acquisition radars, four MW-5 fire-control radars and 24, 57-mm anti-

aircraft guns. This represents the last publicized sale of the MW-5, though it was reported as being in production as recently as 1995.

Funding

Information concerning the value and source of funding for the MW-5 is not disclosed.

Recent Contracts

No contractual information has been made publicly available.

Timetable

Month	Year	Major Development
	1943	SCR-584 radar introduced by US
	1950	Fire Can version of SCR-584 introduced by USSR
Late	1960s	Estimated start of MW-5 production
	1985	MW-5 advertised with specifications sheet
Dec	1988	MW-5 ordered by Royal Thai Navy

Worldwide Distribution

The MW-5 radar was developed and produced for air defense in **China**, with **Thailand** the only identified export customer. Other exports are likely to have occurred.

Forecast Rationale

The MW-5 radar is the product of a long lineage of radar systems dating back to the 1940s. It possesses a rugged, basic design that provides a cheap and efficient fire-control system, and was reportedly being produced through the mid-1990s. But the last publicized sale (to Thailand) occurred a decade ago, and it is not known if the system remains in production for Chinese and/or export requirements today.

It is significant that most purchasers of Chinese anti-aircraft guns have elected to couple them with Western fire-control systems where such options are available; thus, the market for MW-5 is limited. A possible area of exploitation is as a battle reserve, enabling a spare to be kept as a replacement for a destroyed system or to fill gaps in coverage. Such replacements may come from existing stocks, however.

Based on these factors, a forecast is withheld. This report will be archived next year should this situation remain unchanged.

* * * * *