

Medium-range Air Defence
Missile Weapon System
Type **LY-60D**



Medium-range Air Defence
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► General Description

The Medium-range Air Defence Missile Weapon System Type LY-60D, upgraded from LY-60 and LY-60(N) missile weapon systems, is an air defence missile weapon system against medium/low altitude and medium/short range targets. Its main role is to intercept multi-batch air targets such as aircrafts and cruise missiles from all directions. The system can operate independently or coordinately with other air defence systems.

► Main Features

- Short reaction time
- High guidance accuracy
- High lethality
- Superior performance of ECCM
- High reliability
- Fully automated and easy operation
- Fast deployment and withdrawal
- Easy maintainance
- Digital data link



Search & Command Vehicle



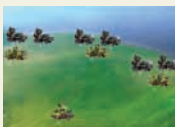
Guidance Vehicle



Launch Vehicle



Missile



Ground combat



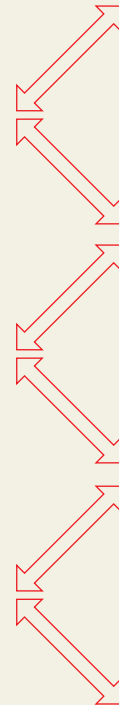
Maintenance system



Search & Command Vehicle



Guidance Vehicle



Launch Vehicle

Deployment of LY-60D Missile Weapon System

Medium-range Air Defence
Missile Weapon System
Type **LY-60D**



▶ Principal Data

Target Characteristics

-Max. speed	600 m/s
-Max. maneuverability	7 g

Interception Zone

-Altitude	30~12,000 m
-Range	1,000~18,000 m

Overload

35 g

Single-shot Kill Probability

80% (anti-aircraft)

Guidance Accuracy (missing distance)

< 8 m

System Reaction Time

14 s

Capability Against Multi-targets

-Simultaneously tracking	60
-Simultaneously attack	1 ~ 4

Ambient Temperature

-40~+60

Automatic Missile-gun Integrated Low Altitude and Short Range Air Defence Weapon System



Automatic Missile-gun Integrated Low Altitude and Short Range Air Defense Weapon System



▶ General Description

The Automatic Missile-gun Integrated Low Altitude and Short Range Air Defense Weapon System is all weather, mobile and key area air defense weapon system. It can intensify the power of air defense system by interating the respective advantage of the missile and AA Gun.

▶ Main Features

- Multi-interception and simultaneous multi-target engagement
- Flexible deployment for key area or during march
- Flexible system composition
- High automation
- Against Fighters, attackers, fighter-bombers, armed helicopters, cruise missiles, land targets and surface targets when necessary

▶ Principal Data

● Searching Radar	S Band
<u>Max. Detection Range</u>	≥32 km (RCS=2 m ² , Pd=50%, Pf=10 ⁻⁶)
<u>Fire Control Radar</u>	X Band
<u>Max. Tracking Range</u>	20 km
● FB-6A Missile Launch Vehicles	
<u>Max. Speed of Target</u>	300 m/s
<u>Max. Overload of Target</u>	6 g
<u>Max. Operation Altitude</u>	3,800 m
<u>Max. Slant Distance</u>	5,500 m
● 35 Twin Barrel AA Gun	
<u>Muzzle Velocity</u>	1,175 m/s
<u>Rate of Fire</u>	550x2 rds/min.
<u>Effective Slant Range</u>	4,000 m

▶ System Composition

- Fire Control Radar
- FB-6A Air Defense Missile System
- 35mm AA Gun

Vehicular Air Defense
Missile Weapon System
Type **FB-6A**



Vehicular Air Defense
Missile Weapon System
Type **FB-6A**

▶ General Description

The Vehicular Air Defense Missile Weapon System Type FB-6A is equipped with electro-optic detection assembly, servo system, location & direction finding system, communication system, fire system (including machine gun and FN-6 missiles) and fire control system. Featured with highly automatic operation and quick reaction ability, it can achieve moving launch, network operation and strong survivability under all weather conditions. Its targets could be fighter, armed helicopter, attack aircraft, UAV or subsonic cruise missile.



Power Supply Vehicle



Ammunition Vehicle



Comprehensive Test Vehicle



Circular Deployment



Sector Deployment



Training Equipment

Vehicular Air Defense
Missile Weapon System
Type **FB-6A**



► Principal Data

<u>Missile Capacity</u>	4×2 rds
<u>Interception Zone</u>	
-Max. range	5,500 m
-Min. range	500 m
-Max. altitude	3,800 m
-Min. altitude	15 m
<u>Preparation Time</u>	≤10 min.
<u>Launch Reaction Time</u>	≤12 s
<u>Weight of Launch Vehicle</u>	4,700 kg
<u>Max. Aiming Speed</u>	
-Traverse	60°/s
-Elevation	60°/s
<u>Max. Aiming Acceleration Speed</u>	
-Traverse	50°/s ²
-Elevation	40°/s ²
<u>Aiming Accuracy</u>	
-Traverse	2 mil
-Elevation	1.5 mil
<u>Crew</u>	2 (operator/driver)
<u>Reload Time</u>	≤1 min.
<u>Ambient Temperature</u>	-40 ~+50

Portable Air Defense Missile
Weapon System

Type **FN-16**



Portable Air Defense
Missile Weapon System
Type **FN-16**



▶ General Description

FN-16 is a new generation portable air defense missile weapon system adapting to future battlefield environment. It is mainly used for battlefield air defense to intercept low altitude and ultra-low altitude air targets. It adopts advanced technologies such as IR/UV two-color rosette scan quasi-imaging seeker, full digitization design, laser proximity fuse, high energy motor to achieve strong anti-interference capability.

▶ Principal Data

<u>Targets</u>	fighter-bomber, attacker, armed helicopter, UAV, cruise missile etc.
<u>Operation Air Space</u>	
-Effective altitude	10~4,000 m
-Effective slant range	500~6,000 m
-Max. course short-cut	3,000 m
-Single shot killing probability	≥80%
-Reliability	≥0.90
<u>Missile Specification</u>	
-Diameter	72 mm
-Length	≤1,600 mm
-Weight	≤11.5kg
-Flight velocity	≥600 m/s (in cruising course)
-Overload	≥18 g
<u>Combat Equipment</u>	
-Total weight	≤18 kg
-Total length	≤1.7 m
<u>Guidance System</u>	Infrared/Ultraviolet dual color rose scan
<u>Guidance Accuracy</u>	
-Against helicopter (low speed)	≥95% (within 1.5m diameter)
-Against jet (high speed)	≥95% (within specific zone)

Portable Air Defense
Missile Weapon System
Type **FN-6**



Portable Air Defense
Missile Weapon System
Type **FN-6**



► General Description

The Portable Air Defense Missile Weapon System Type FN-6 is a single-man-portable air defense missile weapon system newly developed with infrared passive homing guidance. It has the capability of all-direction attack and anti-infrared jamming. Featured with fire-and-forget capability, easy operation, carrying & transportation, compatibility with multi-launching platform, the system can effectively intercept fighter-bomber, strike aircraft, armed helicopter and other air targets.

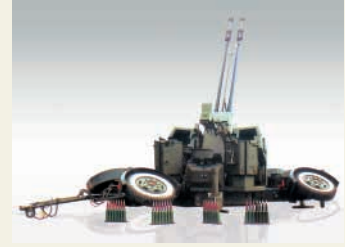
► Principal Data

<u>Interception Zone</u>	
-Min. Altitude	15 m
-Max. Altitude	3,800 m
-Min. Range	500 m
-Max. Range	5,500 m
<u>Single-Shot Kill Probability</u>	≥ 0.7
<u>Diameter</u>	71 mm
<u>Length</u>	1,495 mm
<u>Weight</u>	10.77 kg
<u>Max. Speed</u>	600 m/s
<u>Overload</u>	18 g
<u>Launch Reaction Time</u> (from activating the ground power to missile launching)	≤ 5 s
<u>Total Weight of System</u>	17 kg
<u>Anti-jamming Capability</u>	-Resistance to background and ground object interference -Counter infrared decoy -Counter infrared modulation jamming
<u>Ambient Temperature</u>	-40~+50

35mm Twin Barrel AA
Gun Type **PG99**



35mm Twin Barrel AA Gun Type **PG99**



► General Description

The 35mm Twin Barrel Anti-Aircraft Gun Type PG99 is a low altitude air defence weapon system, which is an effective part of air-defence network. It is mainly used against low altitude and hedgehopping targets within 4,000 m slant range, or light armored targets and landing crafts within 4,000 m. The weapon system consists of an AA Gun, a mobile power station and an optional fire control radar.

► Principal Data

<u>Caliber</u>	35 mm
<u>Barrels</u>	2
<u>Muzzle Velocity</u>	1,175 m/s
<u>Rate of Fire</u>	550×2 rds/min.
<u>Max. Slant Range</u>	11,000 m
<u>Effective Slant Range</u>	4,000 m
<u>Effective Vertical Range</u>	3,000 m
<u>Traverse</u>	360°
<u>Elevation/Depression</u>	
-Manual	+95°/-8°
-Electric	+92°/-5°
<u>Max. Aiming Speed</u>	
-Traverse	120°/s
-Elevation	60°/s
<u>Min. Aiming Speed</u>	
-Traverse	0.04°/s
-Elevation	0.04°/s
<u>Max. Towed Speed</u>	
-Road	80 km/h
-Cross-country	30 km/h
<u>Power Station</u>	40 KW

25mm Twin Barrel
AA Gun Type **87A**



25mm Twin Barrel AA Gun Type **87A**



► General Description

The 25mm Twin Barrel Anti-aircraft Gun Type 87A is a low altitude air defence weapon, which can be jointly operated with other anti-aircraft weapon systems. It is mainly used against low altitude and hedgehopping targets within 2,500 m slant range, light armored targets and landing crafts within 1,500 m.

► Principal Data

<u>Caliber</u>	25 mm
<u>Muzzle Velocity</u>	1,050 m/s
<u>Rate of Fire</u>	1,200~1,600 rds/min.
<u>Max. Slant Range</u>	7,000 m
<u>Effective Slant Range</u>	3,200 m
<u>Max. Vertical Range</u>	5,000 m
<u>Combat Weight</u>	1.465 kg
<u>Dimension</u>	4,680×1,995×2,050 mm
<u>Barrel Length</u>	2,294 mm
<u>Barrel Weight</u>	38.5 kg
<u>Rotate Speed</u>	
- Traverse (first gear)	13.26°/r
- Traverse (second gear)	25.84°/r
- Elevation	15.09°/r
<u>Traverse</u>	360°
<u>Elevation/Depression</u>	+90°/-10°
<u>Axis of Fire</u>	750~840 mm
<u>Feed Box Capacity</u>	40 rds
<u>Turning Radius (0° barrel)</u>	2,913 mm
<u>Shell Type</u>	HE, HE-T, API-T

7 Barrel 30mm

Close-in Weapon System



7 Barrel 30mm Close-in Weapon System



▶ General Description

The 7 Barrel 30mm Close-in Weapon System can acquire, track and intercept in close range pop-up anti-ship missiles with speed less than 1.7 Mach and other air targets.

▶ Main Features

- Intercept incoming sea skimming anti-ship missile effectively
- Intercept in short range the incoming low altitude and very low altitude aircraft and other pop-up targets
- Suppress and neutralize enemy firing power and live forces

▶ Composition and Specification

● SR64 Search Radar	1 set
Max. Altitude:	6,000 m
Max. Range:	
a. Against Missile ($P_d=0.9$, $P_f=10^{-6}$, $RCS=0.1m^2$)	$R_{max} \geq 10$ Km
b. Against Aircraft ($P_d=0.5$, $P_f=10^{-6}$, $RCS=2m^2$)	$R_{max} \geq 60$ Km
● LR66 Fire Control Radar	1 set
a. Against Anti-ship Missile ($RCS=0.1m^2$)	$R \geq 6$ Km
b. Against Aircraft ($RCS=2m^2$)	$R \geq 16$ Km
● OFD-01 Optronic Fire Control Equipment	1 set
a. Against Anti-ship Missile ($RCS=0.1m^2$)	$R_a \geq 5$ Km
b. Against Aircraft ($RCS=2m^2$)	$R_a \geq 15$ Km
● 7-barrel 30mm Naval Gun	2 sets
Max. Firing Range:	
Against Missile (AMDS)	2,500 m
Against Aircraft (HE)	4,000 m
Surface Target (HE)	5,000 m
Feeding Mode	two-channel, two-drum without link-belt
Ammunition Reserve	2×500 rounds

Air Defense Missile Operation and
Command System

Type **TH-S311**



**Air Defense Missile
Operation and Command
System
Type TH-S311**



▶ **General Description**

TH-S311 Portable Surface-to-air Missile Launching Command System is a commanding system for various types of portable surface-to-air missile weapon system. It realizes a series of functions which including battlefield reconnaissance, early warning, fire control and launching command. It is an excellent solution to numerous problems faced by portable surface-to-air missiles.

▶ **Main Features**

- to carry out low altitude and short range air situation alarm and receive the air situation from superior command
- to assign at real time firepower according to the target information
- to provide target indication and shooting command to missile shooter

▶ **System Composition**

The System is composed of one commanding vehicle and several guided aiming equipment. The command vehicle is made up of CW target designation radar, system software, command computer, communication control system, system power supply and cross-country vehicle; the guided aiming equipment consists of helmet screen, guided aiming control device (including digital transceiver, GPS and embedded computer) and one missile direction finder.

▶ **Principal Data**

<u>Radar Type</u>	continuous wave LPI radar
<u>Frequency</u>	X band
<u>Detection Range for Target with RCS = 2m²</u>	20 km
<u>Multiple Target Processing Capacity</u>	22
<u>Launcher Deployment</u>	maximally 10 km in radius around the radar
<u>Active Defense Coverage</u>	up to 15km radius
<u>Deployment Time</u>	≤ 5 min.
<u>Disassembling Time</u>	≤ 5 min.
<u>Working Mode</u>	vehicle mode tripod mode wired and wireless mode
<u>Communication Mode</u>	
<u>Communication Range</u>	
-wired	>10 km
-wireless	>3 km
<u>Missile Direction Finder Error</u>	<3°
<u>Working Condition</u>	
-Working temperature	-25~+55
-Storage temperature	-40~+65
-Humidity	95±3% @ 30
<u>Wind Speed</u>	
-Normal operation	12 m/s
-Non-damage	25 m/s

Fire Control Radar System
Type **825**



Fire Control Radar System Type 825



► General Description

Fire Control Radar System Type 825 for AA guns is a land based light weight mobile fire control radar system, which is mainly equipped in the air defense battalion or the 35mm, the 37mm or 57mm AA guns battalion. Its combat mission is to offer the precision firing data of the target to the AA guns in time and all-weather, and to guarantee the fire system to intercept the target.

► Principal Data

<u>Range</u>	≥35 km ($\sigma=2m^2$, $P_d=50\%$, $P_f=10^{-6}$)
<u>Max. Tracking Range</u>	≥35 km
<u>Min. Tracking Range</u>	≤300 m
<u>Azimuth</u>	360°
<u>Elevation</u>	-6°~90°
<u>Tracking Accuracy</u>	
<u>Azimuth</u>	
-random error	0.08°
-system error	0.08°
<u>Elevation</u>	
-random error	0.08°
-system error	0.08°
<u>Range</u>	
-random error	10 m
-system error	10 m

► Composition

- X Band Search system
- X Band Tracking System
- Ka Band Tracking Radar
- IR Tracking System
- TV Tracking System
- Laser Ranger
- Fire Control Computer