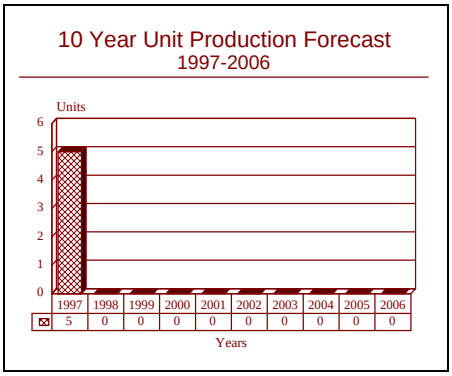
SIDAM 25 Quadruple 25 mm Anti-Aircraft Artillery System - Archived 6/98

Outlook

- Production being completed for the Italian Army requirement
- Although still being promoted, no additional production is forecast
- Only a minimal amount of modernization and retrofit potential is forecast



Orientation

Description. A tracked anti-aircraft artillery system

Sponsor. The SIDAM 25 was originally a private development program funded by the prime contractor OTOBREDA; later support has come from the Italian Ministry of Defense.

Contractors. The SIDAM 25 was developed and is being manufactured by OTOBREDA (formerly OTO Melara); La Spezia, Italy. Major subcontractors include ALENIA, Örlikon Italiana and Officine Galileo.

Licensees. None

Status. The SIDAM 25 is in serial production for the Italian Army and in service.

Total Produced. As of January 1, 1997, a total of 276 SIDAM 25 systems had been manufactured.

Application. A mobile, armored anti-aircraft artillery system designed to operate in forward areas. The weapon system is primarily for defense against helicopters, some missiles, and low-flying aircraft. A secondary capability against light armored targets is incorporated into the system.

Price Range. In equivalent 1997 United States dollars, the unit price of the SIDAM 25 is $4.308 million.

Technical Data

Crew. Three: commander, gunner, driver, loader

Cannon Type. Örlikon Contraves model KBA

Caliber. 25 millimeter

Breech Mechanism. Rotating bolt

Recoil System. Hydropneumatic

Ammunition. The KBA cannon of the SIDAM 25 is chambered for the 25x137 ammunition in High Explosive Incendiary-Tracer, Semi-Armor Piercing High Explosive Incendiary, Armor Piercing Discarding Sabot-Tracer, Armor Piercing Incendiary-Tracer and Target Practice-Tracer types.

Dimensions. This system is based on the M113A1 vehicle, details of which are found in the report on that system in the Military Vehicles book.

	SI units	**US units**
Length	4.86 meters	15.94 feet
Width	2.54 meters	8.33 feet
Height	2.97 meters	9.74 feet
Combat weight	14.36 tonnes	15.83 tons
Fuel capacity	360 liters	95.74 gallons

Performance. The elevation, depression and traverse figures are for the SIDAM 25 turret as installed in the M113 application only. The automotive performance is on a metalled road.

Maximum speed	60.7 kilometers per hour	37.7 miles per hour
Maximum range	480 kilometers	298.08 statute miles
Step	61 centimeters	2.0 feet
Trench	1.68 meters	5.51 feet
Slope	29%	29%
Gradient	60%	60%
Fording	amphibious	amphibious
Elevation	+87°	+87°
Depression	-5°	-5°
Traverse	360°	360°
Effective cannon range	2,000 meters	1,187.2 yards
Rate of fire (system)	2,400 rounds per minute	2,400 rounds per minute

Engine. The SIDAM 25, based on the M113A2, is fitted with the Detroit Diesel 6V-53 six cylinder liquid cooled diesel engine rated at 158.09 kilowatts (212 horsepower) at 46.67 revolutions per second (2,800 revolutions per minute. The power-to-weight ratio is 11.0 kilowatts per tonne (13.39 horsepower per ton). A 24 volt electrical system with two 12 volt 6TL batteries is the standard electrical fit.

Gearbox. The SIDAM 25, based on the M113A2, uses the Allison TX-100-1 gearbox with three forward and one reverse gear ratios.

Suspension and Running Gear. The SIDAM 25, based on the M113A2, uses a torsion bar type suspension with five dual tired roadwheels on each side with the drive sprocket to the front and idler at the rear. No track return rollers are used.

Fire Control. The fire control suite of the SIDAM 25 consists of an optronic sighting assembly composed of an OG14 stabilized optical sight with an automatic electro-optic viewing system for daylight, an automatic low light level electro-optic viewing system for night operations, and a laser rangefinder. An electronic tracking unit connected to the optronic sight assembly performs the angular tracking of the target. The heart of the fire control system is a computer located at the gunner's console; included is an attitude inertial sensor. ITALTEL provides the integral identification friend or foe system. The complete system is stabilized so that the SIDAM 25 can fire on the move. Alternatively, target designation can be performed from an external source and received in the SIDAM 25 vehicle via a Target Alert Display Set. In this configuration, a threat calculator component is fitted; this device provides the SIDAM-25 system operators with threat prioritization for up to ten targets.

Variants/Upgrades

Variants. Not applicable at this time, and none are expected.

Modernization and Retrofit Overview. As of early 1997, the only specific modernization and retrofit program for the SIDAM-25 has been related to the integration of a surface-to-air missile system. In late 1994, studies were begun by the contractor on the possible integration of the Matra Mistral light anti-aircraft missile system. The envisioned configuration has two launcher packs each containing three missiles mounted on the turret above each bank of two cannon. In this proposed program, the cannon would be used for close-in engagements with the missiles used for longer engagements. The only other modernization and retrofit potential specific to the SIDAM 25 as it presently exists are in relation to possible upgrades to the fire control suite. However, any effort in this area is not expected until the early years of the next century at the earliest. There exists some potential related to the upgrade of the M113 chassis and (especially) automotive components. These

rather extensive programs are fully described in the M113 report in *Military Vehicles Forecast*, the companion volume to this.

Program Review

Background. In response to an urgent need of the Italian Army, in 1983, the then OTO Melara began the development of a new mobile anti-aircraft artillery system. The Italian Army closely monitored the development of the system which was originally funded by OTO Melara. It was decided to mount the system on the M113, which had been manufactured under license by OTO Melara. However, from the outset, the firm decided to design the system so that it could be mounted on a variety of vehicles, both tracked and wheeled. The firing trials, conducted from 1985 through 1987, were highly successful, and the Italian Army ordered the system in June of 1987. The first systems were delivered to the Garibaldi Brigade in 1989. The total requirement was originally for 340 systems; it was subsequently reduced to 280. The name SIDAM 25 is an Italian acronym for Sistema Italiano Difesa Area Mobile, 25 millimeter. In late 1994, as part of a larger reorganization of the Italian defense industry, OTO Melara was merged with the Breda firm under the OTOBREDA name.

Description. The four cannon which are the basis for the SIDAM 25 are the 25 millimeter model KBA from Örlikon Italiana, a subsidiary of Örlikon Contraves. The turret seats one man and is fabricated from welded aluminum. The three tonne (3.31 ton) turret mounts two elevating masses on each side. Each cannon weighs 108 kilograms (237.6 pounds) and two of them have a double ammunition feed system so that Armor Piercing Discarding Sabot ammunition can be used as needed. A total of 630 rounds is held in the ready magazines. The gunner can select one of four firing rates: single shot, 15 round burst, 25 round burst or continuous fire; the gunner also selects Armor Piercing Discarding Sabot ammunition if desired.

Various options to the fire control suite are available; these include an infrared attachment to the optical/electronic sight to allow for operation in fog or smoke conditions, a passive infrared sight and an inertial navigation system which complements the existing gun position sensor. These are in addition to the standard Target Alert Display Set, which allows for target designation from an outside source.

Other Platforms. As noted above, the SIDAM 25 turret was designed so that it can be integrated with a variety of combat vehicles, both wheeled and tracked. As of this writing, the SIDAM 25 turret has been test fitted to the C13 and VCC-80 tracked vehicles, and to the BMR-3560 and EE-11 wheeled vehicles.

Funding

The funding for the final development and procurement of the SIDAM 25 has been supplied by the Italian Ministry of Defense through the Italian Army.

Recent Contracts

Not available as contractual information is not released.

Timetable

This timetable is applicable to the SIDAM 25 system only and not to the KBA cannon or M113.

	1983	Development initiated
Jun	1985	Testing of SIDAM 25 began
Through	1987	Testing continued
Jun	1987	Ordered by Italian Army
Jul	1989	First deliveries made to the Italian Army
	1994	Studies for possible integration of Mistral missile began
Mid	1997	Production continues

Worldwide Distribution

Export Potential. As of mid-1997, no serious export interest in the SIDAM 25 has been noted. However, Italy has a high profile of defense equipment sales in the Mideast and North Africa and there are countries which regularly turn to Italy for arms. While we presently forecast no export of this system, the potential remains and we will continue to monitor the program.

Countries. Italy (276)

Forecast Rationale

Our latest review of the SIDAM 25 program finds that, as of mid-1997, the serial production of the system is winding down. This is a result of the soon-to-be-met truncated (280) unit requirement of the Italian Army. Our research does not support any further orders from the Italian Army, which has several other expensive procurement programs ongoing. Even the proposed integration with the Mistral missile, while it would certainly yield a highly cost-effective system, should not go ahead due to limited available funding.

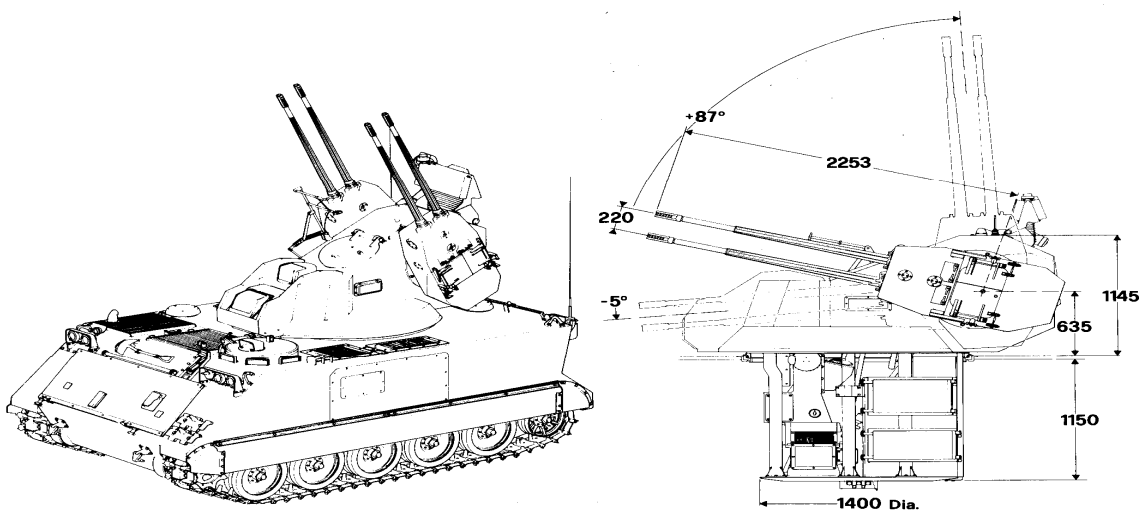
Due to the steadily increasing number of similar cannon-based anti-aircraft systems of this type on the market, our research also does not support any export orders for the SIDAM 25. However, the rather low unit price of this system, plus the fact that it can be integrated with the ubiquitous M113 vehicle, still is its strongest selling point. We will continue to monitor this program, and will update it on an interim basis if warranted.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

			High Confidence Level			Good Confidence Level			Speculative				
Ordnance	(Engine)	thru 96	97	98	99	00	01	02	03	04	05	06	97-06
OTOBREDA													
SIDAM 25(a)	6V-53T	276	5	0	0	0	0	0	0	0	0	0	5
Total Production		276	5	0	0	0	0	0	0	0	0	0	5

(a) The through 1996 production includes one developmental prototype. THE FORECAST PRODUCTION IS FOR THE SIDAM 25 TURRET INTEGRATED WITH THE M113 CHASSIS ONLY!



SIDAM 25

Source: OTOBREDA