

# ARCHIVED REPORT

For data and forecasts on current programs please visit

[www.forecastinternational.com](http://www.forecastinternational.com) or call +1 203.426.0800

## Matra Bombes A Guidage Laser

### Outlook

- Production remains dormant
- Nexter is still awaiting new orders; however, any renewed serial production would occur on an as-needed basis only
- French procurement is complete; foreign sales are needed to generate new production

### Orientation

**Description.** A family of laser-guided bombs.

**Sponsor.** The French Air Force sponsored the development and French procurement of the Matra BGL.

**Licensees.** None

**Status.** Development through serial production (as needed).

**Total Produced.** Through 2011, we estimate the contractor produced over 7,500 Matra BGL bomb guidance kits of all types.

**Application.** A precision-guided aerial munition optimized for the destruction of runways, bridges, hangars, and other hard targets.

**Price Range.** In 2012 U.S. dollars, the Matra BGL bomb guidance kit reportedly maintains a unit price of \$37,200.

### Contractors

#### Prime

<b>Nexter Munitions</b>	<a href="http://www.nexter-group.fr">http://www.nexter-group.fr</a> , Route de Villeneuve, La Chapelle, 18570 Saint Ursin, France, Tel: + 33 02 48 68 71 71, Fax: + 33 02 48 68 70 54, Prime
-------------------------	--

Comprehensive information on Contractors can be found in Forecast International's "International Contractors" series. For a detailed description, go to [www.forecastinternational.com](http://www.forecastinternational.com) (see Products & Samples/Governments & Industries) or call + 1 (203) 426-0800.

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; [rich.pettibone@forecast1.com](mailto:rich.pettibone@forecast1.com)

### Technical Data

## Matra Bombes A Guidage Laser

**Launch/Carrier Vehicle.** Most tactical aircraft that employ NATO-standard munitions (Mirage III/5/50/2000/F1, Jaguar, AlphaJet, F-4, F-15, F-16, F-111, etc.) can employ the Matra BGL family of munitions.

**Dimensions.** The dimensions of the Matra BGL family of guided bombs can vary greatly, depending on the base dimensions of the bomb casing used. Data for the two most common bomb applications are as follows:

	<u>SI Units</u>	<u>U.S. Units</u>
<u>400-kilogram (880-lb) bomb</u>		
Total length	3.54 m	11.61 ft
Width (without rear control surfaces)	0.79 m	2.59 ft
Width (with rear control surfaces)	1.43 m	4.69 ft
Bomb casing weight	355 kg	781 lb
Forward guidance component weight	55 kg	121 lb
Rear control surfaces weight	60 kg	132 lb
Total weight	470 kg	1,034 lb
<u>1,000-kilogram (2,200-lb) bomb</u>		
Total length	4.37 m	14.34 ft
Width (without rear control surfaces)	0.89 m	2.92 ft
Width (with rear control surfaces)	1.72 m	5.64 ft
Bomb casing weight	850 kg	1,870 lb
Forward guidance component weight	60 kg	132 lb
Rear control surfaces weight	80 kg	176 lb
Total weight	990 kg	2,178 lb

**Performance.** The maximum range data apply to bomb release from what the contractor describes as a medium altitude.

	<u>SI Units</u>	<u>U.S. Units</u>
Maximum range	13 km	8.07 stat mi

## Variants/Upgrades

**Variants.** None. The various guidance kits are effectively separate and distinct products.

**Modernization and Retrofit Overview.** Not generally applicable. The contractor incorporates various component improvements as production cut-ins.

## Program Review

**Background.** In 1965, the U.S. Air Force initiated the Paveway laser-guided bomb program to develop a guided bomb. The Vietnam conflict proved the Paveway concept beyond a doubt. The United States has subsequently distributed Paveway to other nations through various military aid and direct sale channels. For a full discussion of the Paveway program, see the "GBU-10 Series Paveway Laser-Guided Bombs" report in this tab.

### *Paveway à la Français*

In 1978, the French Air Force awarded then-Matra a research and development contract for the indigenous development of a laser-guided bomb family.

Matra initially developed and tested a precision-guided 400-kilogram (880-lb) bomb. The development of the 1,000-kilogram (2,204-lb) bomb followed in 1981. Following a successful series of operational tests at the Landes Test Center in 1983, low-rate serial production

of the 400-kilogram version of the Matra Bombes A Guidage Laser began in 1984; serial production of the 1,000-kilogram version began in 1986.

In 1990, Matra Manurhin Defense became a component of the Euroimpact division of Giat Industries. In October 2006, Giat Industries approved reorganization and an associated name change to Nexter. Under the restructuring, the group maintained four core operations:

- Nexter Systems
- Nexter Munitions
- Nexter Electronics
- Nexter Mechanics

The move better prepares the firm for consolidation in the near future, possibly with Thales or EADS.

## Matra Bombes A Guidage Laser

Nexter Munitions currently manages the Matra Bombes A Guidage Laser program.

**Description.** The contractor supplies the Matra BGL package as a kit, consisting of the following major components:

- Laser guidance unit
- Canard (forward) control surfaces
- Rear control surfaces
- Adapter ring
- Supporting hardware

The Matra kit attaches to a standard bomb casing in a conventional manner; the modified bomb mounts on the aircraft as does any other bomb.

Once the pilot selects the target, a laser designator (on the launch aircraft or another aircraft, or handled by a ground observer) must illuminate the target for the Matra BGL seeker head. The launch aircraft needs only to release the munition in the general direction of the target so that it enters the "basket" of reflected laser energy. The seeker head then acquires and homes in on the reflected laser energy. The guidance and control circuitry processes data from the seeker head, activating

the aerodynamic control surfaces to guide the bomb to the source of the reflected laser energy – the target.

### *Arcole: Enhanced Penetrator*

Early on in the Matra BGL development program, the need for a precision-guided bomb with enhanced penetrating power against hard targets became evident. To this end, the contractor designed and developed the Arcole bomb in 400-kilogram (880-lb) and 1,000-kilogram (2,204-lb) versions. The Arcole features a two-stage warhead, with a small initial (precursor) charge for penetration and a large main charge for target destruction.

Both versions of the Arcole are currently in production and service.

### *Proven Combat Record*

Coalition forces employed Matra BGL precision-guided bombs during Operation Desert Storm (1991). While laser-guided bombs (of all types) comprised only 5 percent of all bombs expended in that action, they accounted for over 50 percent of all targets destroyed. Although the Paveway represented the vast majority of precision-guided munitions expenditures during Desert Storm, the Matra BGL precision-guided bombs more than proved themselves.

## Related News

**French Defense Budget to Remain Flat in 2013** – France's defense budget will remain stable in 2013, as per the request made by the new Socialist government. The allocation of EUR31.4 billion (\$40 billion) requested by the Defense Ministry as part of President Francois Hollande's Finance Bill 2013 is seen as a bridge until a new white paper on Defense and National Security is released in the first half of next year.

The French defense budget currently totals EUR31.72 billion (\$39.52 billion), excluding pensions. Thus, the 2013 figure represents flat year-on-year defense expenditure. Equipment spending will remain in line with current levels, as it is earmarked at EUR16 billion, though some programs have been suspended until completion of the new white paper. Also of note, the funding level for maintaining and operating France's strategic nuclear deterrent remains the same, while the basic research budget received a 10 percent increase.

In the summer, a report was released detailing the planned expenditure cuts to defense that the Hollande government was preparing to undertake. The next defense white paper and military planning law (2014-2019) will soon reveal whether there was any truth behind such rumors. (French Ministry of Defense, 10/12)

**Nexter Holding Steady** – In the face of difficult economic conditions, Nexter continues to perform well, yet it is preparing itself for a dramatically altered future defense market. Orders from the French government coupled with increased export sales have contributed to the company's success.

All in all, this is a marked change for the better, and quite a comeback from its near disintegration in the 1990s. Having been kept afloat via some EUR4.6 billion in government funds over the years, Nexter now appears healthy enough to develop on its own. The question is, Will the anticipated shifts in defense spending brought on by the financial crisis allow it? A possible acquisition of Nexter by the much smaller Panhard was quashed by French officials in 2010. Earlier news reports indicated Panhard was very interested in merging with Nexter as part of a consolidation of France's domestic land systems sector. The two firms have no overlap; Panhard produces light military vehicles, and Nexter focuses on heavy vehicles. More recently, Nexter indicated it is interested in building its critical mass. Talks are under way concerning a possible acquisition of Eurenco, which would further bolster Nexter Munitions' operations.

## Matra Bombes A Guidage Laser

As to the company itself, French officials stated that Nexter is not for sale and that such a deal would only be considered "in the framework of a major European land armaments alliance." The Holy Grail of such a consolidation is the long-discussed tie-up between armored vehicle manufacturers in France and Germany. One scenario would be a tie-up between Nexter and Germany's Krauss-Maffei Wegmann. Currently, the two firms are working on a medium-size multirole armored fighting vehicle under a Memorandum of Understanding signed in early 2006. However, before any such cross-border consolidation could occur, KMW and Rheinmetall would have to wrap up consolidation efforts in Germany first. Wegmann's acquisition of KMW, which makes it sole owner, may open new opportunities in this regard.

A more distant possibility would be an alliance between Nexter and BAE Systems. Thanks to its aggressive acquisition policy, BAE Systems has a strong presence in military vehicles following its purchase of the U.S.-based United Defense. The downside to such a U.K. linkup for Nexter is that it would be more of a junior partnership, whereas an affiliation with Germany would be more of a merger between equals. The issue of consolidation remains highly political, with both Germany and France reluctant to relinquish their indigenous manufacturing capabilities despite the extremely low number of vehicles that are being produced. Major players such as Rheinmetall have opted for cooperation rather than a merge with other military vehicle producers. As jobs become more precious, the thought of seeing them cut via a cross-border merger will be anathema to politicians; instead, governments will likely try to minimize the pain of budget cuts while nurturing their indigenous industries. (FI, 1/12)

**Market Intelligence Service Subscribers:** For additional news, go to the on-line E-Market Alert page located in the Intelligence Center at [www.forecastinternational.com](http://www.forecastinternational.com) and click on the links to the products you subscribe to.

## Funding

The French Ministry of Defense, through the French Air Force, funded the development and French procurement of this munition.

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1978	Development of 400-kg version
	1981	Development of 1,000-kg version
Jun	1983	Serial production of 400-kg version
Late	1983	Development of 250-kg conventional version, and of 400-kg and 1,000-kg penetrating versions
	1984	Export begins
Early	1986	Low-rate production of 1,000-kg version
Oct	1986	Low-rate production of 1,000-kg penetrating version (Arcole)
Jul	1988	Operational testing
	1989	400-kg version becomes operational with French Air Force
Jan	1991	Employment in Operation Desert Storm
Oct	2006	Giat Industries reorganizes as Nexter
	2012	Production dormant; available on an as-needed basis for export

## Worldwide Distribution/Inventories

**Export Potential.** As a French munition, the Matra BGL benefits from the existing customer base for French military hardware. Many export sales have been associated with sales of French tactical aircraft.

**Countries.** **France, Belgium, Brazil, Colombia, Jordan, Morocco, Oman, Peru, United Arab Emirates, United Kingdom, and Venezuela.** At least three other customers remain unidentified.

## Forecast Rationale

## Matra Bombes A Guidage Laser

Winning the title "combat proven" does not always ensure a long production run. French combat aircraft used the Matra Bombes A Guidage Laser during Operation Desert Storm (1991). Of all strike weapons expended by the French Air Force during this fighting, only 5 percent were precision-guided munitions. Yet these PGMs accounted for more than 50 percent of all targets destroyed.

### *Any More Export Sales?*

The Matra BGL's successes in Iraq did not lead to a flurry of new orders. In fact, this program has seen occasional interruptions in its production run in the years since the Iraq War. Currently, the Matra BGL is available for production on an as-needed basis to fill

export orders. The French Air Force no longer procures this weapon.

Prospects for future export orders continue to dwindle. The Matra BGL managed to secure a respectable, if not spectacular, level of export sales in the past. This success is partly based on the popularity of French tactical combat aircraft. There remains a possibility that additional orders will be placed, but an increasingly diminishing one.

The Matra BGL is a combat-proven design with an established customer base, but it suffers from the direct competition of the widely popular Paveway. Even France now procures the Paveway instead of its own Matra BGL.

\* \* \*