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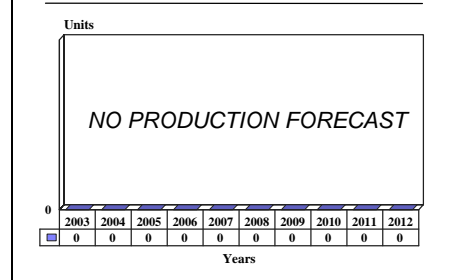
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Belouga BLG 66 and EG/IZ/AC Submunitions - Archived 12/2004

Outlook

- Production on an as-needed basis, as most inventory requirements are met
- Further production will be based on modification of submunitions to comply with Ottawa Convention
- No other product enhancement forecast

10 Year Unit Production Forecast
2003 - 2012



Orientation

Description. A submunitions dispenser (cluster bomb) and submunitions.

Sponsor. The French Ministry of Defense, through the Delegation Generale pour l'Armement and the French Air Force, sponsored the development and French procurement of the Belouga weapons system.

Contractors. Giat Industries, Satory, France, and Thomson-DASA Armements (formerly Thomson-Brandt/Brandt Armaments), Paris, France jointly designed, developed, and coproduced the Belouga system.

Licensees. None

Status. The serial production of the Belouga system remains dormant, with any recent production on an as-needed basis for the French Air Force and export

customers. The requirement for producing submunitions in compliance with the Ottawa Convention remains.

Total Produced. As of January 1, 2003, a total of 4,905 Belouga dispensers and 770,655 EG, IZ, and AC submunitions had been manufactured.

Application. An aircraft-mounted low-drag submunitions dispenser that dispenses a variety of submunitions per mission need.

Price Range. In equivalent 1998 U.S. dollars, the unit price of a complete Belouga system was US\$50,670. The submunitions (EG, IZ, and AC) cost approximately US\$21 each in quantity purchases. If the submunitions are produced compliant with the Ottawa Convention, these prices are projected to be higher.

Technical Data

Launch/Carrier Vehicle. AlphaJet, Mirage III/V/50/2000, Rafale, Tornado, F-104, and similar tactical aircraft. The standard NATO 35.6 centimeter (14 inch) launch attachment is used.

Munitions per Dispenser. 151

Dimensions. The following data are for the latest production standard. The dispenser weight is when loaded.

	<u>SI Units</u>	<u>U.S. Units</u>
Dispenser length:	3.30 meters	10.82 feet
Dispenser width:	36 centimeters	1.18 feet
Dispenser tail span:	58 centimeters	1.90 feet

	<u>SI Units</u>	<u>U.S. Units</u>
Dispenser weight:	245 kilograms	627 pounds
Submunition diameter:	6.6 centimeters	2.6 inches
Submunition length:	22.5 centimeters	8.86 inches
Submunition weight:	1.3 kilograms	2.86 pounds

Variants/Upgrades

Variants. This is not applicable to this munition system.

Modernization and Retrofit Overview. This is generally not applicable to this type of weapon. Any improvements to the Belouga dispenser and the related EG, IZ, and AC submunitions are incorporated as production

cut-ins, including any modifications making the Belouga submunitions compliant with the 1997 Ottawa Convention. There is evidence that the contractor has been modifying the Belouga dispenser to make it compatible with Russian-pattern suspension and release systems.

Program Review

Background. The Belouga program was initiated in the early 1970s when various countries began to exploit advances in submunitions-related technology. The Belouga (white whale) was developed as an improved successor to the Giboulee cluster bomb system. While not as sophisticated as the JP233, Mehrzweckwaffe-1, or some other dispensers, the Belouga is an efficient system. The Belouga system offers reduced aerodynamic drag, can be launched at a higher speed, and provides larger target coverage than the Giboulee. The Belouga is a viable and cost-effective system for lesser-developed nations; indeed, several such nations have reportedly been excellent customers of the weapon. In 1991, Matra was absorbed by Giat Industries, becoming a component of the Euroimpact division of the firm and subsequently the Weapons and Ammunition Division. In another series of changes, Thomson-Brandt became Thomson-DASA Armements.

Description. The Belouga is a streamlined submunitions dispenser that is released from the strike aircraft. The Belouga is supplied as a complete round, ready for use. No maintenance is required and the shelf life is reportedly at least 15 years. As the Belouga is integrated with standard NATO launch racks, almost any aircraft can mount the dispenser – no specialized onboard equipment is needed on the launch aircraft. A total of 151 ejection holes are in each dispenser, each containing one EG, IZ, or AC submunition. After release, the Belouga dispenser is braked by an automatically deployed drag parachute.

The Belouga dispenses three types of submunitions:

- General purpose, designated EG. This is a fragmentation-type munition fitted with a percussion fuze. The ballistic fragments can perforate steel 4

millimeters (0.157 inch) thick at a distance of 10 meters (32.8 feet).

- Interdiction, designated IZ. This submunition is the same warhead as the EG munition, but with a delay fuze that can function hours later.
- Anti-tank, designated AC. This is a shaped-charge (High Explosive Anti-Tank) warhead designed to produce secondary effects by ballistic fragments. The armor perforation of the AC submunition is said by the manufacturer to be 25 centimeters (9.84 inches).

None of the above submunitions currently comply with the requirements of the 1997 Ottawa Convention, in that they lack any modern self-neutralization/self-destruct feature. There is evidence that the contractor team has been working on modifications to make one or more of these submunitions compliant with the 1997 Ottawa Convention; but this has yet to be confirmed.

Sequence of Operation. The Belouga may be released at any height down to 60 meters (196.85 feet) and at airspeeds up to 550 knots. Stabilized flight with pinpoint aiming is not required, due to the wide dispersion to the left and right of the dispenser's flight path. The dispenser is braked after release to allow the aircraft to clear the launch area. After ejection, over a preselected period of time the submunitions are also braked, reaching the ground in a nearly vertical position for maximum effect. The pilot has two options for preselected pattern configuration. These are a pattern width of either 40 or 60 meters (43.74 or 65.61 yards) and a pattern length of either 120 or 240 meters (131.23 or 262.46 yards).

Funding

The French Ministry of Defense, through the French Air Force, funded development and procurement of the Belouga and its submunitions. No procurement funding details are available.

Recent Contracts

Not available, as contractual information is not released.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
January	1975	Development begins
August	1979	Serial production begins
Late	2002	Production dormant

Worldwide Distribution

Export Potential. Well over 20 years after it was first offered on the market, the Belouga remains a relatively unknown weapon, despite its confirmed use in the 1991 Gulf War. However, the Belouga has enjoyed moderate success on the export market, mainly tied to French aircraft sales. A number of nations rely upon France for military equipment, as France's liberal arms export policies are conducive to sales. While this would normally point to a continued healthy level of sales for the weapon, the fact that its submunitions do not comply with the provisions of the 1997 Ottawa Convention will impact the future export of this weapons system.

Countries. While it is known that the Belouga has been sold to **France** and at least seven other countries, the identities of most of the export customers remain unknown. **Chad** received around 200 Belouga weapons in 1988.

Forecast Rationale

The serial production of the Belouga system is forecast to be restarted for a small export sale, providing that the Belouga submunitions are produced compliant with the Ottawa Convention. Unless such design features are soon incorporated into the Belouga submunitions, the weapon will no longer be manufactured, let alone

deployed. A number of newer, more sophisticated stand-off weapons of this type are being offered on the market, superseding the Belouga technology.

If no new information on this weapon system comes forth in the coming year, this report will be archived.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

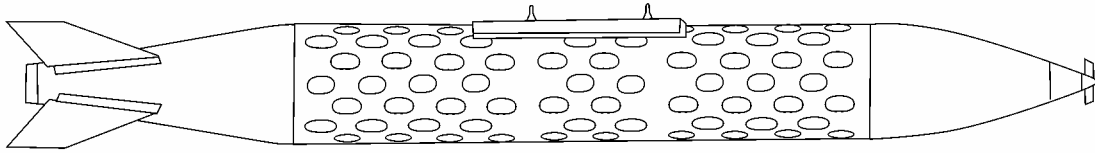
<u>Munition</u>	<u>thru 02</u>	<u>High Confidence Level</u>			<u>Good Confidence Level</u>			<u>Speculative</u>			<u>Total 03-12</u>	
		<u>03</u>	<u>04</u>	<u>05</u>	<u>06</u>	<u>07</u>	<u>08</u>	<u>09</u>	<u>10</u>	<u>11</u>		<u>12</u>
ENGINS MATRA/THOMSON-DASA ARME												
BLG66 ^(a)	4905	0	0	0	0	0	0	0	0	0	0	0
Total Production	4905	0	0	0	0	0	0	0	0	0	0	0

(a) The through 2001 production figure includes approximately 40 developmental and operational test dispensers for function, integration and dispensing tests.

ESTIMATED CALENDAR YEAR PRODUCTION

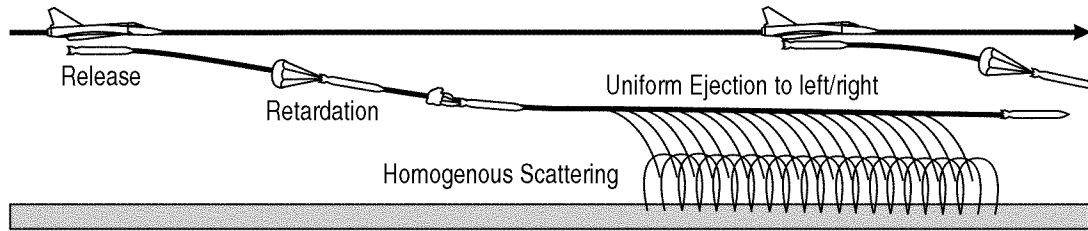
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ENGINS MATRA/THOMSON-DASA ARME												
EG/IZ/AC SUBMUNITIONS (a)	770353	0	0	0	0	0	0	0	0	0	0	0
Total Production	770353	0	0	0	0	0	0	0	0	0	0	0

(a) Production shown includes all EG, AC, and IZ submunitions combined. The through 2001 production figure contained approximately 6,040 submunitions for initial function, integration and dispensing tests.



BELOUGA

Source: Thomson - DASA Armements



BELOUGA OPERATION

Source: Thomson - DASA Armements