JP233 - Archived 11/96

Orientation

Description. A captive type airborne submunitions dispenser.

Sponsor. The development and procurement of the JP233 was sponsored by the Ministry of Defence of the United Kingdom, Ministry of Defence Procurement Executive and Ministry of Defence Air Staff through the Royal Air Force.

Contractors. This weapon was developed and manufactured by Hunting Engineering Limited, Ampthill, Bedford, England, United Kingdom.

Licensees. None

Status. The development of the basic system is complete; the production program for the Royal Air Force has ended with the completion of the final orders although JP233 remains available for further orders. JP233 is a combat proven system. The development of the CMD18 is complete and the system is available for production orders.

Total Produced. As of January 1, 1995, a total of 266 JP233 weapons had been manufactured; in addition, five CMD18 dispensers had been manufactured.

Application. A captive type anti-runway/area denial dispenser weapon system designed for use from high speed, low level aircraft.

Price Range. In equivalent 1991 United States dollars, the unit price of a complete serially produced JP233 weapon was $53,256. If procurement is resumed today, based on a procurement of 100 weapons, the unit price is $61,300 in equivalent 1995 United States dollars. In those same equivalent dollars, the unit price of the CMD18 is $51,100.

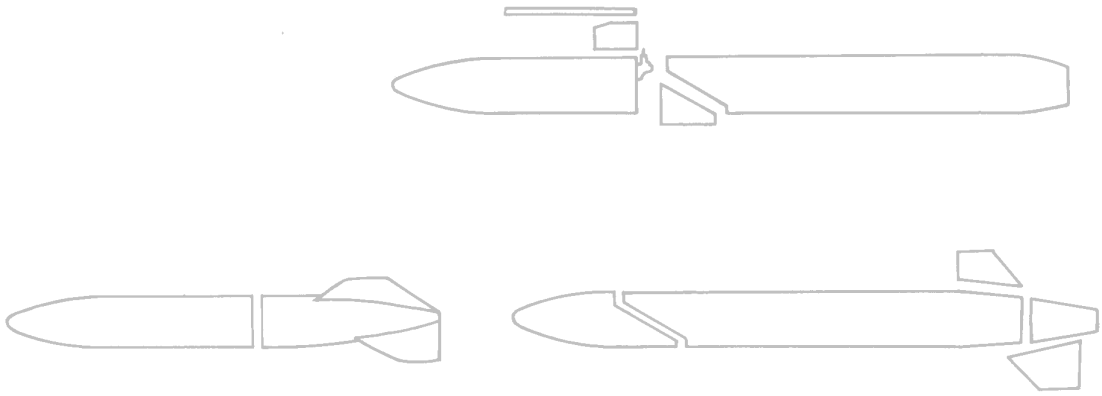
Technical Data

Launch/carrier vehicle. Tornado IDS, F-111, F-16, Harrier, Buccaneer and similar tactical aircraft.

Munitions per dispenser. 215 HB876 and/or 30 SG357

Dimensions. The following data are for the production standard dispenser in the tandem configuration with one bay of HB876 and one of SG357 submunitions. This is the most common deployment on the Tornado IDS aircraft of the Royal Air Force. The technical data for the HB876 and SG357 submunitions are found in the pertinent reports in this section.

	SI units	US units
Length	6.55 m	21.49 ft
Width	84.0 cm	33.07 in
Height	60.0 cm	23.62 in
Weight	2.335 tonnes	2.57 tons



JP233 MODULAR CONCEPT

Source: Hunting Engineering

Variants/Upgrades

A lighter and more compact dispenser based on the JP233 has been developed by Hunting Engineering. Called the CMD18, the new dispenser is essentially the JP233 with one longitudinal row of munitions removed. The CMD18 holds 18 SG357 submunitions. The relevant technical data is as follows:

	SI units	US units
Length	4.29 m	14.07 ft
Width	65.6 cm	25.83 in
Height	64.0 cm	25.19 in
Weight	900 kg	1,980 lbs

The reduced weight and size of the CMD18 allows for the system to be carried by smaller tactical aircraft down to the AMX class. As of late 1995, no sales of the CMD18 had been announced.

Program Review

Background. The JP233 dispenser was developed for the Royal Air Force to meet a portion of the primary mission of counter-air. Specifically, the desired effect is to suppress the enemy's ability to mount aircraft sorties by first damaging the runways and then denying access to the damaged areas for repair. Development began in the mid-seventies with flight trials beginning in 1978. In August of 1985, the serial production of the JP233 began.

Weapon Description. The JP233 is roughly cylindrical or torpedo-like in shape and is modular in design. The weapon can be configured as a single dispenser containing either the HB876 area denial submunition or the SG357 anti-runway cratering submunition, or in a tandem manner (front-to-back) for which the technical data above is applicable. Three fins mounted on the aft portion of the system aid in stabilization of the weapon during carriage. The weapon, in both configurations, is streamlined for minimal drag and has been carried throughout the Tornado's maneuver envelope. A total of 215 munitions are carried in the HB876 version of JP233, or 30 submunitions in the SG357 version, or the same number of the two submunitions combined in the tandem configuration.

Tactical Deployment. The JP233 is a captive system in which the attacking aircraft must overfly the airfield in order for the submunitions to be ejected and function in the prescribed manner. The launch aircraft can overfly the target at high subsonic speed at minimal altitude to minimize exposure to hostile defenses. A Tornado IDS aircraft can deliver up to 60 SG357 runway-cratering submunitions in a single pass; if the flight path is within optimum limits, this is considered sufficient to put a runway out of action for a considerable period. The concurrent dispensing of 430 area denial submunitions is expected to further delay the repair effort. For a complete

description of the SG357 and HB876 submunitions, we refer the reader to the pertinent reports in Tab G.

United States Air Force Interest. Early in the development of the JP233, specifically in 1977, the United States Air Force took an interest in the program as a possible system to meet the Low Altitude Airfield Attack System requirement. In Fiscal 1977 through 1979, money was allocated to the JP233 program in order to have the design meet United States safety requirements as well as military standards. General Dynamics was the associated contractor in the United States; the F-16 and F-111 were the aircraft designated to be integrated with the weapon. However, in mid-1980, the United States Air Force lost interest in the JP233 and withdrew its support. No further involvement by the United States in the JP233 program as such has taken place and none is expected. However, the United States Air Force has designated the HB876 Area Denial Submunition as a component of the now dead CBU-98/B Direct Airfield Attack Combined Munition/Airfield Attack Weapon.

Operational Use. The JP233 saw its first operational use in the Second Gulf War in early 1991. The Royal Air Force was assigned the majority of the anti-airfield missions and the use of the JP233 was heavy. All accounts indicate that the weapon performed as advertised. One lesson that arose as a result of the use of the JP233 in this war was the extreme hazards that the use of a captive dispenser system represents. However, no Tornado IDS aircraft was lost as a direct result of the use of JP233.

Funding

Although detailed funding information is not released, the development and Royal Air Force procurement of this weapon has been supported by the United Kingdom Ministry of Defence through the Royal Air Force.

Analysis. Both the JP233 and the competing Mehrzweckwaffe-1 systems have a tactical deficiency in that they require the attacking aircraft to overfly the airfield being attacked, an event sure to arouse the spirited defense of that airfield. However, they both have one major attribute - they have been and remain available now - while some of the other weapons of this type that will not require overflight of the target are still some time off. This has long been the JP233's prime marketing asset and one most heavily pushed by the contractor. The United Kingdom considers the JP233 as an integral part of its overall counter-air mission area with the present flight parameters an acceptable hazard in light of the potential tactical gains.

Recent Contracts

Not available as contractual information is not released.

Timetable

The following timetable is for the JP233 and CMD18 weapons only and no other dispenser system.

Early	1970s	Development began
Mid	1977	United States Air Force interest first began; financial support given
Jul	1978	Flight trials began
Early	1980	Integration with the Tornado aircraft began
Mid	1980	United States Air Force pulled out of program
Dec	1982	First order placed
Aug	1985	Serial production began
Early	1986	Initial Operating Capability with Royal Air Force
	1986	Development of CMD18 began
Early	1991	Operational use of JP233 in Second Gulf War
Late	1994	JP233 available for further orders; CMD18 available for orders

Worldwide Distribution

Export Potential. There has been no export of the JP233 to date and we forecast none. The potential customers are likely going to wait for the next generation of dispensers with stand-off capability to enter the market.

Countries. United Kingdom (266)

Forecast Rationale

As of late 1995, the JP233 production has been dormant for some three years. The Royal Air Force procurement program was completed in late 1990; production for this requirement was completed in 1991. No additional production is forecast, although the weapon is still being offered on the open market. Due to this fact plus the weapon's excellent performance in the Second Gulf War, we will continue to monitor it for further events which could change our forecast.

As the CMD18 is also a captive overflight system, all our research indicates that the potential customers of anti-runway dispensers will wait for true stand-off weapons of this type. For this reason, for the time being, we are withholding any production forecast of the CMD18 although we will continue to monitor the program for further events which could change this forecast.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

		High Confidence Level				Good Confidence Level				Speculative		
Munition	through 94	95	96	97	98	99	00	01	02	03	04	Total 95-04
HUNTING ENGINEERING LIMITED												
CMD18(a)	5	0	0	0	0	0	0	0	0	0	0	0
JP233(b)	266	0	0	0	0	0	0	0	0	0	0	0
Total Production	271	0	0	0	0	0	0	0	0	0	0	0

(a)The through 1994 production is for the developmental prototypes.

(b)The historical production figure includes three developmental systems. The production line DOES NOT include any CMD 18 weapons.