

# ARCHIVED REPORT

For data and forecasts on current programs please visit

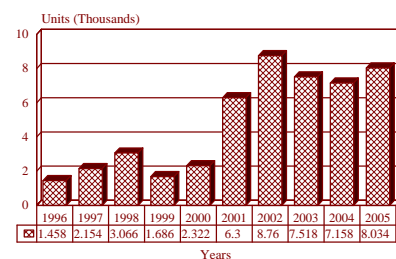
[www.forecastinternational.com](http://www.forecastinternational.com) or call +1 203.426.0800

## Multisplittermine Mit Activem Sensor and Multisplittermine Mit Activem und Passivem Sensor - Archived 12/97

### Outlook

- Production of this munition for Mehrzweckwaffe-1 application winding down
- Forecast production is for Mehrzweckwaffe-2 and Autonomous Free Flight Dispenser applications
- Integration with other dispensers ongoing

10 Year Unit Production Forecast  
1996-2005



### Orientation

**Description.** Aerial denial and semi-hard target submunitions.

**Sponsor.** The development and procurement of the Multisplittermine mine mit Activem Sensor and the Multisplittermine mit Activem und Passivem Sensor is sponsored by the Federal Republic of Germany's Ministry of Defense through the Rüstungsabteilung (Armament Department) and Bundesamt für Wehrtechnik und Beschaffung (the Federal Defense Technology and Procurement Agency) through the Materialamt der Luftwaffe.

**Contractors.** The Multisplittermine mine mit Activem Sensor and the Multisplittermine mit Activem und Passivem Sensor were developed and are manufactured by Raketen Technik Gesellschaft mbH; Unterhaching, Bavaria, Federal Republic of Germany.

**Licensees.** None

**Status.** The development of the Multisplittermine mit Activem Sensor and the Multisplittermine mit Activem und Passivem Sensor munitions is complete and they are operational with the Mehrzweckwaffe-1 dispenser with serial production ongoing. Integration with other dispensers derived from the Mehrzweckwaffe-1 dispenser as well as other design dispensers is ongoing.

**Total Produced.** As of January 1, 1996, a total of 578,874 Multisplittermine mit Activem Sensor and 67,398 Multisplittermine mit Activem und Passivem Sensor munitions had been manufactured.

**Application.** Air delivered submunitions (mines) for area denial (Multisplittermine mit Activem und Passivem Sensor) and the destruction of semi-hard targets (Multisplittermine mit Activem Sensor).

**Price Range.** In equivalent 1996 United States dollars and based on a procurement of 177,000 units, the unit price of the Multisplittermine mit Activem Sensor is

\$36.00 and the Multisplittermine mit Activem und Passivem Sensor is \$39.00.

## Technical Data

**Launch/Carrier Vehicle.** While the Multisplittermine mit Activem und Passivem Sensor and Multisplittermine mit Activem Sensor were designed for the Mehrzweckwaffe-1 dispenser, they have also been integrated with the dispensers derived from the Mehrzweckwaffe-1, specifically the Dispenser Weapon

System-24 which is now being evaluated by Germany as the Mehrzweckwaffe-2, the Dispenser Weapon System-

39 dispenser and the Autonomous Free Flight Dispenser. Other potential dispensers include the Low Altitude Dispenser and Tactical Munitions Dispenser SUU-64/65 and various cruise and ballistic missiles; this list is not all inclusive.

**Dimensions.** The following data are for the latest production standards of the Multisplittermine mit Activem Sensor with the Multisplittermine mit Activem und Passivem Sensor in parentheses.

	<u>SI units</u>	<u>US units</u>
Munition diameter	13.2 (13.2) centimeters	5.2 (5.2) inches
Munition length	12.6 (12.6) centimeters	4.12 (4.12) inches
Munition weight	4.5 (4.5) kilograms	9.9 (9.9) pounds

## Variants/Upgrades

Not applicable to this submunition.

## Program Review

**Background.** The Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor submunitions were developed to provide a large area denial capability and semi-hard vehicle capability for the Mehrzweckwaffe-1 dispenser.

**Multisplittermine mit Activem Sensor Description.** The Multisplittermine mit Activem Sensor (sometimes called MUSA) is a fragmentation munition optimized for the destruction of soft and semi-hard targets. Six submunitions are carried in a Mehrzweckwaffe-1 tube; the entire Mehrzweckwaffe-1 dispenser contains 112 tubes. Although some Mehrzweckwaffe-1 missions could call for all 112 tubes to be loaded with Multisplittermine mit Activem Sensor (672 submunitions), most of the time Multisplittermine mit Activem Sensor will be mixed with Kleinbombe-44, Mine Flach Flach or Multisplittermine mit Activem und Passivem Sensor. These Main Target Group I and II loadings are detailed in the Mehrzweckwaffe-1 report in tab F of this book. The Multisplittermine mit Activem Sensor is an excellent munition for dispensing over airfields, depots or other areas of large concentrations of aircraft or trucks. The munition contains a capacitor which is charged by the Mehrzweckwaffe-1 dispenser unit. The munition is armed on ejection by a release pin. After ejection, first a stabilizing parachute, then a main parachute, is deployed. Once the munition hits the ground, springs are released to

orient it to an upright position; detonation occurs almost immediately thereafter. All Multisplittermine mit Activem Sensor munitions ejected in a single pass detonate simultaneously. The detonation spreads hundreds of heavy metal pellets in all directions; the lethality range of a single Multisplittermine mit Activem Sensor munition is about 100 meters (328 feet).

**Multisplittermine mit Activem und Passivem Sensor Description.** The Multisplittermine mit Activem und Passivem Sensor submunition (sometimes called MUSPA) is essentially identical to the Multisplittermine mit Activem Sensor in general configuration; the loading per tube is the same. However, the Multisplittermine mit Activem und Passivem Sensor is fitted with a different sensor/detonation system. Mainly for deployment against airfields, the Multisplittermine mit Activem und Passivem Sensor is ejected and deployed like the Multisplittermine mit Activem Sensor. However, the Multisplittermine mit Activem und Passivem Sensor does not detonate after it rights itself. An acoustic sensor is activated; this sensor detonates the munition when taxiing or taking off aircraft pass within lethal range. The Multisplittermine mit Activem und Passivem Sensor also detonates after a pre-programmed delay.

**Deployment Pattern.** An airfield or staging depot sown with the Multisplittermine mit Activem Sensor, Multisplittermine mit Activem und Passivem Sensor and

Mine Flach Flach submunitions (the Main Target Group II mix), would be extremely difficult to clear. The Multisplittermine mit Activem Sensor munitions would detonate almost immediately, the Multisplittermine mit Activem und Passivem Sensor munitions at odd intervals or by vehicles; the Mine Flach Flach munitions would detonate when disturbed or by vehicles passing over them. If an airfield is the target and an additional Mehrzweckwaffe-1 pass dispensing the Startbahnbombe anti-runway munition is made, the airfield may well be out of action for some time.

Dispenser Weapon System-24/Dispenser Weapon System-39/Mehrzweckwaffe-2. Beginning in the latter eighties, the Mehrzweckwaffe-1 contractor began the development of a stand-off version of the dispenser. Partially funded by Sweden against a requirement for a delivery system of this type for the new JAS-39 aircraft, the new dispenser was designated the Dispenser Weapon System-24. Basically, this dispenser, which is described in the Mehrzweckwaffe-1 report elsewhere in this book, is a gliding or stand-off

version of the Mehrzweckwaffe-1 dispenser albeit with 24 tubes; in point of fact, the German Ministry of Defense, which is presently evaluating a slightly modified version of the new dispenser system, has designated the new dispenser the Mehrzweckwaffe-2. The Mehrzweckwaffe-2 dispenses the same submunitions (including the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor) as the original Mehrzweckwaffe-1 dispenser. While the Swedish Dispenser Weapon System-39 is also compatible with the original Mehrzweckwaffe-1 submunitions, it is not known which (if any) of these submunitions are being procured by Sweden; indeed, Sweden has developed two indigenous submunitions for its Dispenser Weapon System-39.

Autonomous Free Flight Dispenser. This is another version of the Dispenser Weapon System-24 designed specifically for the F-16 Fighting Falcon aircraft. Again, the same submunitions as used in the original Mehrzweckwaffe-1 and its variants are used in this dispenser.

## Funding

---

The development and German procurement of the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor has been funded by the Federal Republic of Germany's Ministry of Defense through the Bundesamt fur Wehrtechnik und Beschaffung.

## Recent Contracts

---

Not available as the contractor and the customers do not release contractual information.

## Timetable

---

The following timetable relates to the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor submunitions only and to no other submunitions used on the Mehrzweckwaffe-1 dispenser.

	1966	Concept development initiated
	1978	First airborne tests
Dec	1983	Serial production began
Nov	1984	First production deliveries
Jan	1985	Initial operating capability
Late	1996	Production winding down for Mehrzweckwaffe-1 requirement; integration with other dispensers ongoing

## Worldwide Distribution

---

**Export Potential.** As of this writing, the only export sale of the Mehrzweckwaffe-1 dispenser has been to Italy and the loading for those 100 units is completely loaded with the Startbahnbombe submunition. While the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor submunitions were originally designed to be compatible with the Mehrzweckwaffe-1 and its derivatives, they could be integrated with other dispensers in the future. As of late 1996, it is still not known whether Sweden is procuring the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor submunitions with its Dispenser Weapon System-39 dispenser

which is in production for the Swedish Air Force. The Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor is being offered with the Autonomous Free Flight Dispenser.

Country. **Federal Republic of Germany**

## Forecast Rationale

Up to early 1995, the production of the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor submunitions was directly related to the demand for the Main Target Group I and Main Target Group II loadings of the Mehrzweckwaffe-1 dispenser. The production for this application is terminating as the production of the Mehrzweckwaffe-1, a captive type dispenser which requires the strike aircraft to overfly the target, winds down. Our research indicates that the production of the Multisplittermine mit Activem Sensor has been slightly greater than the Multisplittermine mit Activem und Passivem Sensor due to its lower unit cost and greater number of Mehrzweckwaffe-1 Main Target Group I loadings.

Although not presently reflected in our forecast, there is still a possibility that the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor submunitions are being or will be procured as part of the loading for the Swedish Dispenser Weapon System-39. However, until more information on the Swedish loadings of the Dispenser Weapon System-39 is made

definite, we shall refrain from a forecast; this is due to the wide variety of submunitions (including at least one two indigenous types) available to meet this requirement.

Our latest research indicates that the Multisplittermine mit Activem Sensor and Multisplittermine mit Activem und Passivem Sensor submunitions are a certain filling for both the Mehrzweckwaffe-2 and the Autonomous Free Flight Dispenser. We refer the reader to the Mehrzweckwaffe-1 report elsewhere in this book for further information on these applications.

Our production forecast has been predicated on the Multisplittermine mit Activem Sensor being fitted in 40 percent of the tubes of all the Mehrzweckwaffe-1 Main Target Group I production and the Multisplittermine mit Activem und Passivem Sensor fitted in 20 percent of the Main Target Group II tubes with the Multisplittermine mit Activem Sensor fitted in another 20 percent. The forecast numbers are mainly for the Mehrzweckwaffe-2 and Autonomous Free Flight Dispenser applications and are based on the same loading permutations as used for the original Mehrzweckwaffe-1 submunition forecasts.

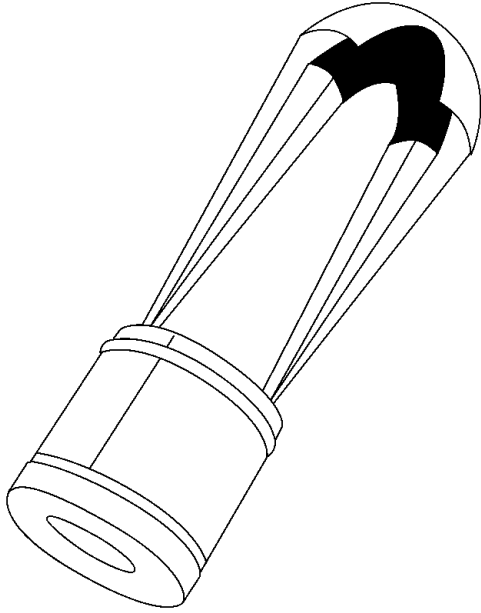
## Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION												
Munition	through 95	High Confidence Level			Good Confidence Level			Speculative			Total 96-05	
		96	97	98	99	00	01	02	03	04		05
RAKETEN TECHNIK GESELLSCHAFT												
MUSA (a)	578874	780	1866	2652	1452	1998	5436	7554	6474	6168	6900	41280
Total Production	578874	780	1866	2652	1452	1998	5436	7554	6474	6168	6900	41280

(a)The through 1995 production figure contains several hundred research and developmental Multisplittermine mit Activem Sensor submunitions used for various integration, function and dispensing tests. THE PRODUCTION SHOWN IN THIS CHART IS FOR THE MEHRZWECKWAFFE-1, MEHRZWECKWAFFE-2 AND AUTONOMOUS FREE FLIGHT DISPENSER APPLICATIONS ONLY!

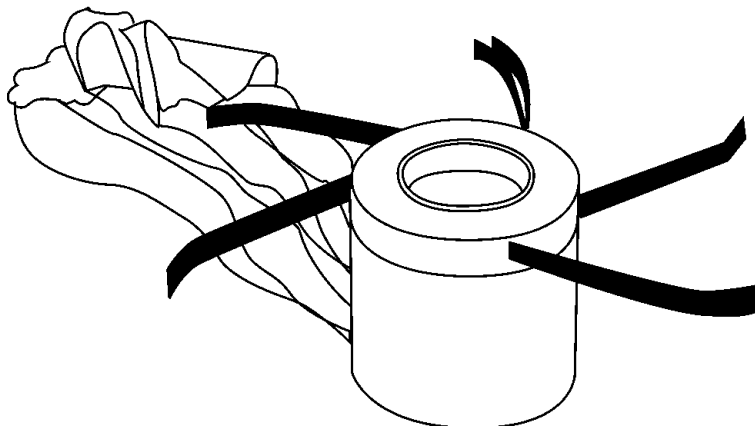
ESTIMATED CALENDAR YEAR PRODUCTION												
Munition	through 95	High Confidence Level			Good Confidence Level			Speculative			Total 96-05	
		96	97	98	99	00	01	02	03	04		05
RAKETEN TECHNIK GESELLSCHAFT												
MUSPA (a)	67398	678	288	414	234	324	864	1206	1044	990	1134	7176
Total Production	67398	678	288	414	234	324	864	1206	1044	990	1134	7176

(a)The through 1995 production figure contains several hundred research and developmental Multisplittermine mit Activem und Passivem Sensor submunitions for integration, function and dispensing tests. THE PRODUCTION SHOWN IN THIS CHART IS FOR THE MEHRZWECKWAFFE-1, MEHRZWECKWAFFE-2 AND AUTONOMOUS FREE FLIGHT DISPENSER APPLICATIONS ONLY!



MASA/MUSPA PARACHUTE DEPLOYMENT

Source: Forecast International



MASA/MUSPA AS ACTIVATED

Source: Forecast International