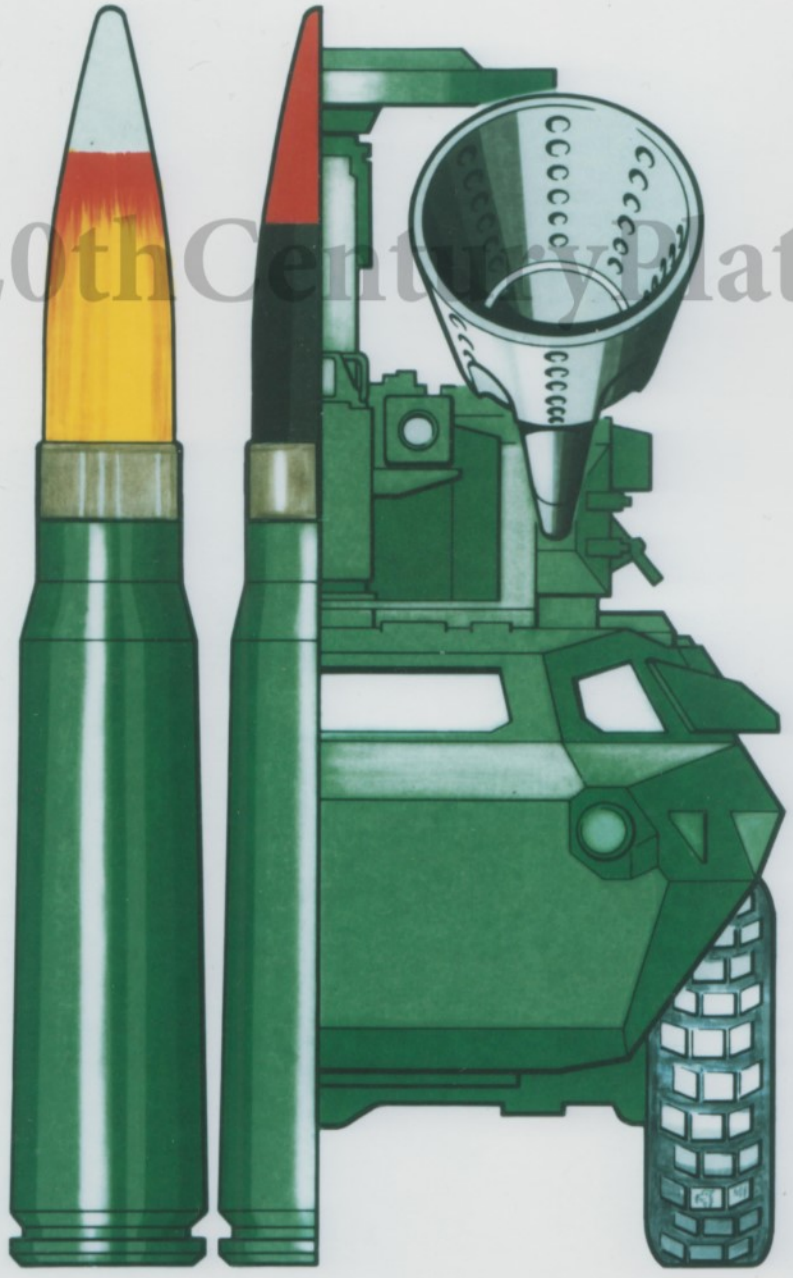
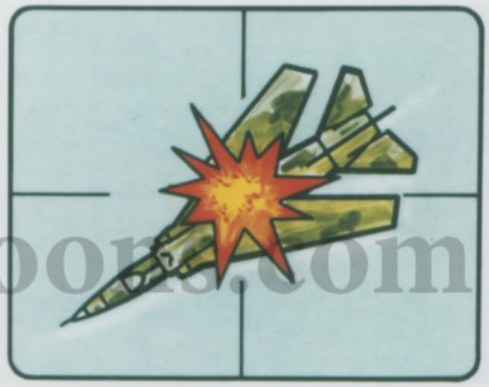
KRAUSSMAFFEI

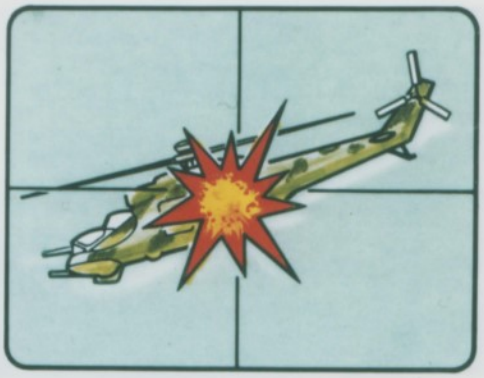
PRESENTATION

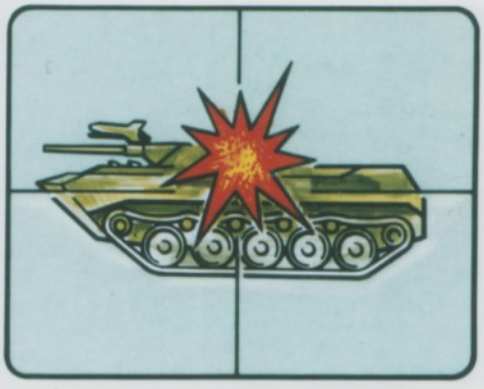
wildcat

AIR DEFENSE SYSTEM









The KRAUSS-MAFFEI AG., are with its scope of business and its participating companies, a productive and versatile partner. With more than 1 Billion DM annual turnover, the company belongs to the leading industrial enterprises of the Federal Republic of Germany.

Almost 5,000 employées work in a factory area with more than 700,000 sqm. The manufacturing plants are equipped with more than 1,000 machine tools, with a total value of approximately 150 Mill. DM.

The delivery program of the enterprise encompasses, in a balanced relationship, products of military technology as well as the machine construction and traffic technology.

KRAUSS-MAFFEI - a modern enterprise for more than 140 years. A tradition which holds an obligation for present and future times.

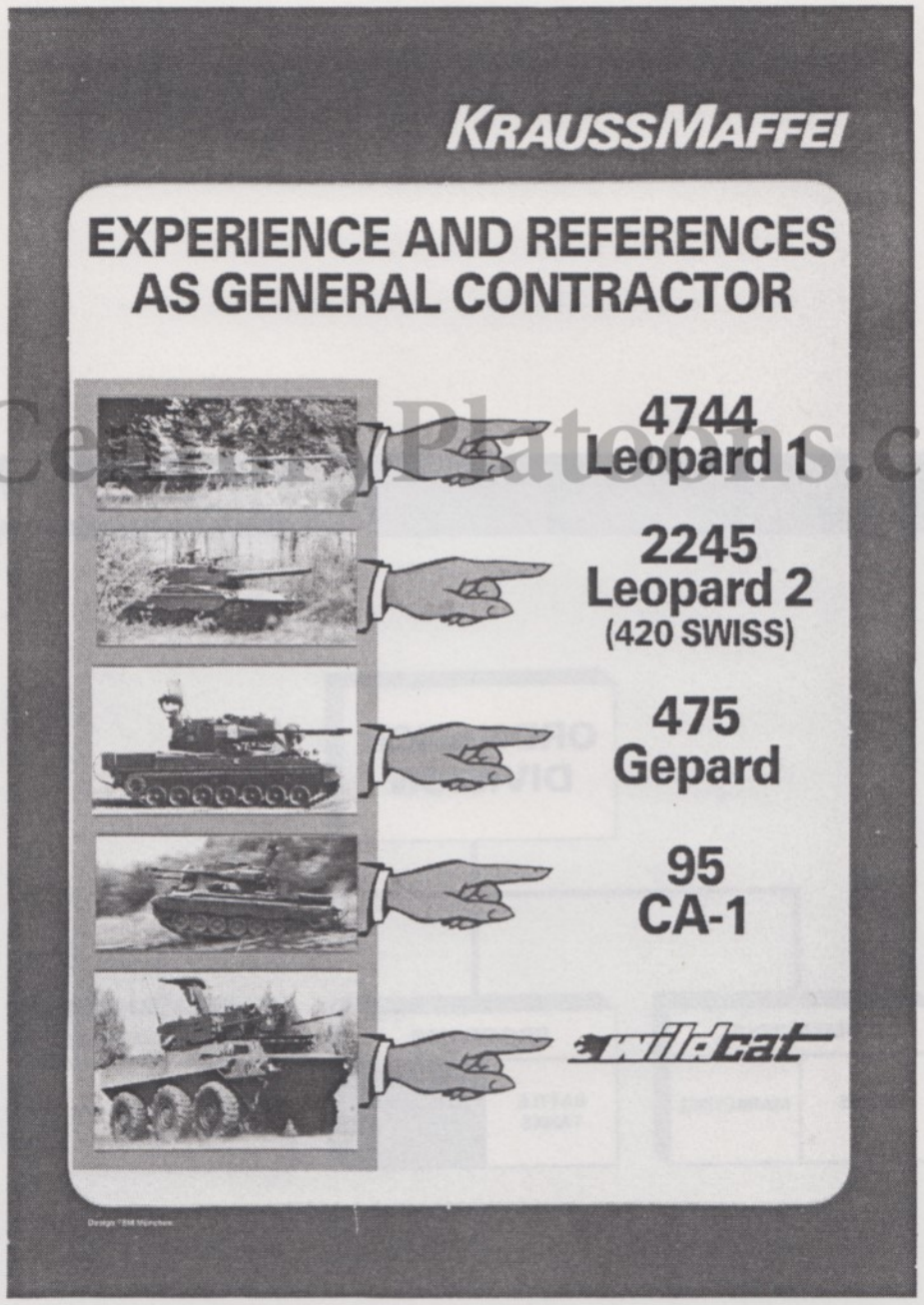
Since 1964, that means since two decades, KRAUSS-MAFFEI is selected General Contractor for the main-battle tanks LEOPARD 1, LEOPARD 2 and Anti-Aircraft tanks GEPARD for the German Forces.

Our experience and references as General Contractor are:

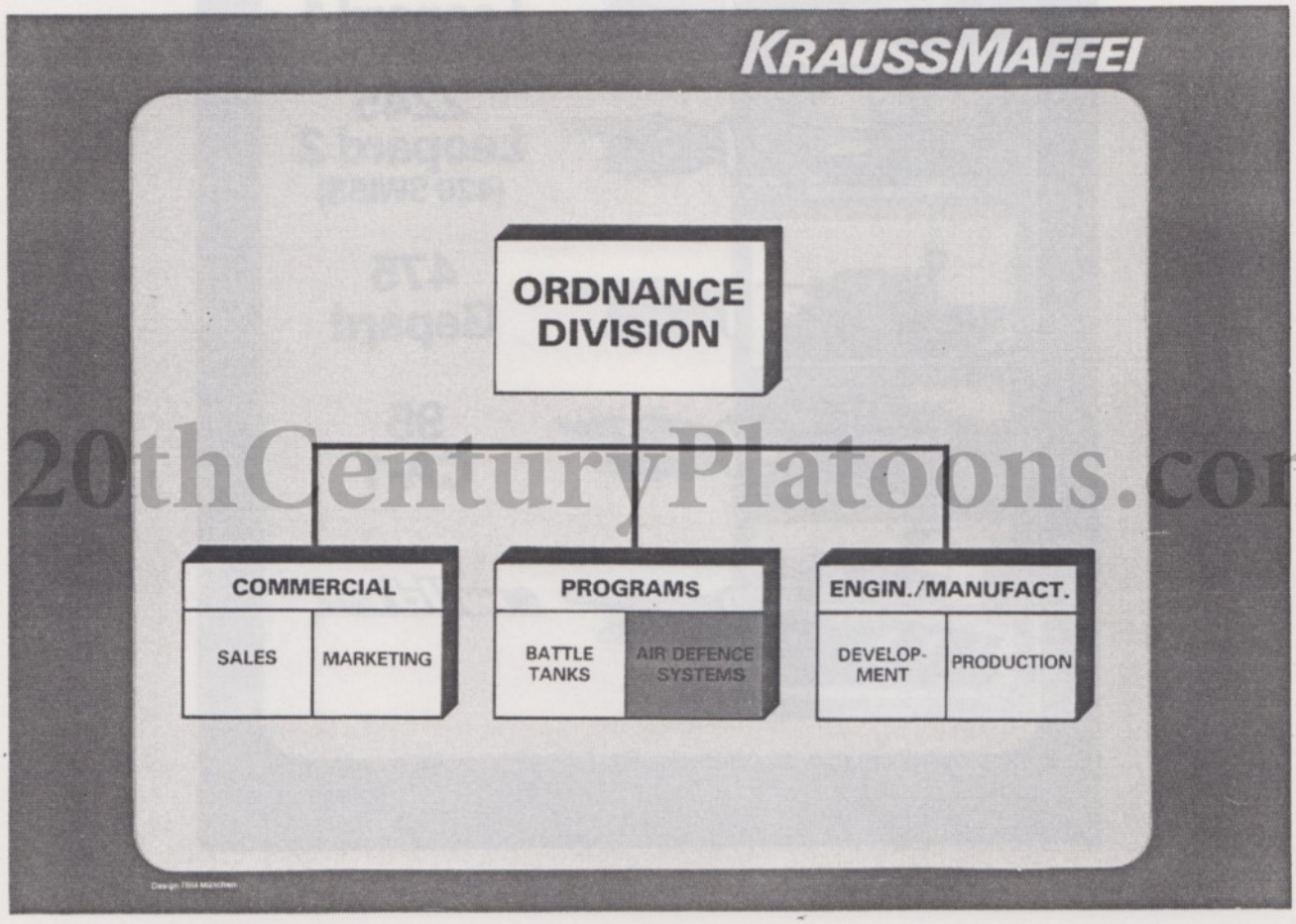
- 4744 Main battle tanks LEOPARD 1, delivered to 10 countries.
- 2245 LEOPARD 2 main battle tanks delivered to the German and Dutch Army.

The Anti-Aircraft tanks GEPARD and CA-1 were produced by KRAUSS-MAFFEI in the years 1976 to 1980, resulting in a total number of:

- 475 GEPARD's and
- 95 Anti-aircraft tanks type CA-1



Beside the General Contractorship for LEOPARD 1, LEOPARD 2 and GEPARD, KRAUSS-MAFFEI recently is also General Contractor for the newly developed Air Defense system **WILDCAT**, a highly mobile wheeled 30 mm Gun system.



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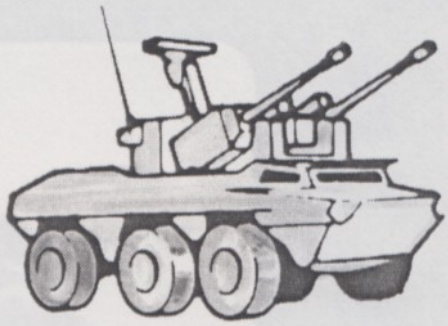

Our experience in the Air Defense area is based upon the production of:

- 420 Anti-aircraft tanks GEPARD for Germany,
- 55 Anti-aircraft tanks GEPARD for Belgium and
- 95 Anti-aircraft tanks type CA-1 for the Netherlands.

570 Anti-Aircraft tanks altogether. With this quantity we are the only company in the western world that have ever built Anti-Aircraft cannon systems in such mass-production.

As a member of the light armoured family, a new 30 mm Air Defense system has been developed and manufactured.

Its name is **WILDCAT**.

It is based on the well proven design, the Know-how during the series production and the excellent experience of both Anti-Aircraft tanks GEPARD and CA-1 in service.

KRAUSSMAFFEI

ADVANCED AIR DEFENCE

AUTONOMOUS, MOBILE, LIGHT WEIGHT, COST-EFFECTIVE

Comprises.

Unique air defence for:
- highly mobile mechanized troops
- airfields
- vital key points.

Self defence capability, against ground target.

Easy to operate and maintain.

Built-in test equipment for monitoring of fire control and fault location down to printed circuit board level.

Modular concept by using different fire control equipment and chassis.

The idea which led us to the development of the Air Defense system **WILDCAT** dates back to 1979 where the demand for a rapid deployment and leightweight air and ground defense system was born.

WILDCAT is the answer to the threat from today and tomorrow in cases where:

- Rapid deployment capability together with
- Tactical flexibility

is urgently needed.

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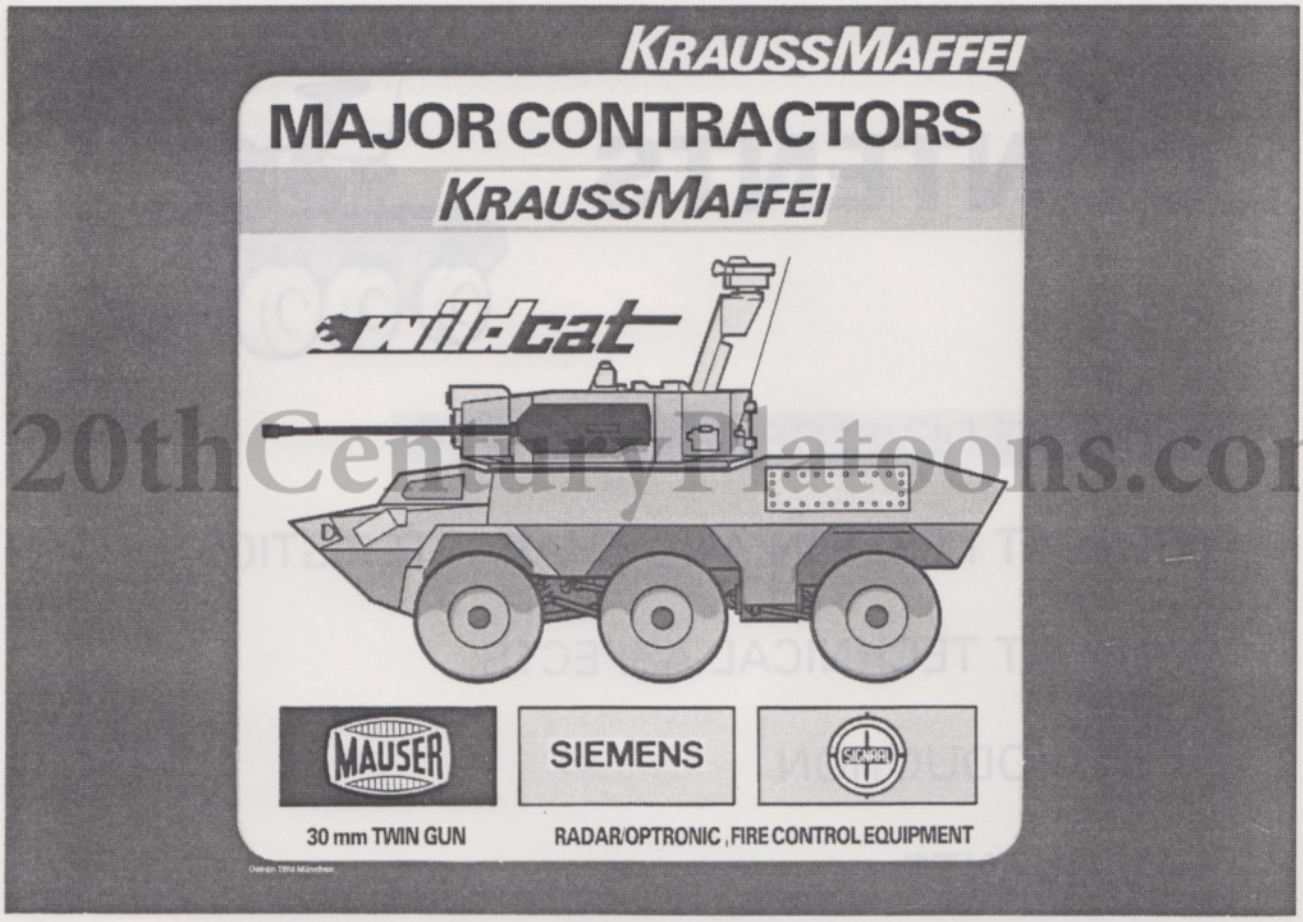

MAJOR CONTRACTORS

The air defence system was developed and manufactured with out-of-pocket funds in cooperation with leading companies in the area of air defence, armament and vehicle technology.

Participating companies and responsibilities

SIEMENS:	Surveillance radar / IFF
SIGNAAL:	Optronics and fire control
MAUSER:	Armament
KRAUSS-MAFFEI:	Overall system definition, turret concept and system integration and chassis

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WILDCAT SYSTEM TESTS (HIGHLIGHTS)

DEC 1979 – FIRST FIRING MAUSER MK 30 F CANNON ON TURRET

NOV 1981 – FIRING TOTAL SYSTEM 100 m DISTANCE

APRIL 1982 – FIRING GROUND TARGETS (FIXED AND MOVING TARGETS) ON NATO TEST RANGE HEUBERG

JUNE 1982 – FIRING AERIAL TARGETS ON NATO TEST RANGE TODENDORF (BALTIC SEA)

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WILDCAT SYSTEM TESTS (HIGHLIGHTS)

FEBR 1983 – FIRING GROUND TARGETS IN COLD ENVIRONMENT

APRIL 1983 – FIRING AERIAL TARGETS ON ITALIAN TEST RANGE

20thCenturyPlatoons.com

OCT 1983 – FIRING AERIAL TARGETS WITH CARRIER SHARK 8 x 8 ON RANGE LOMBARDSIJDE

NOV 1983 – SYSTEM TESTS UNDER CLIMATIC ENVIRONMENT –30°C TO 50°C

SPRING 1984 – PRESENTATION IN SWITZERLAND AND AUSTRIA

20thCenturyPlatoons.com

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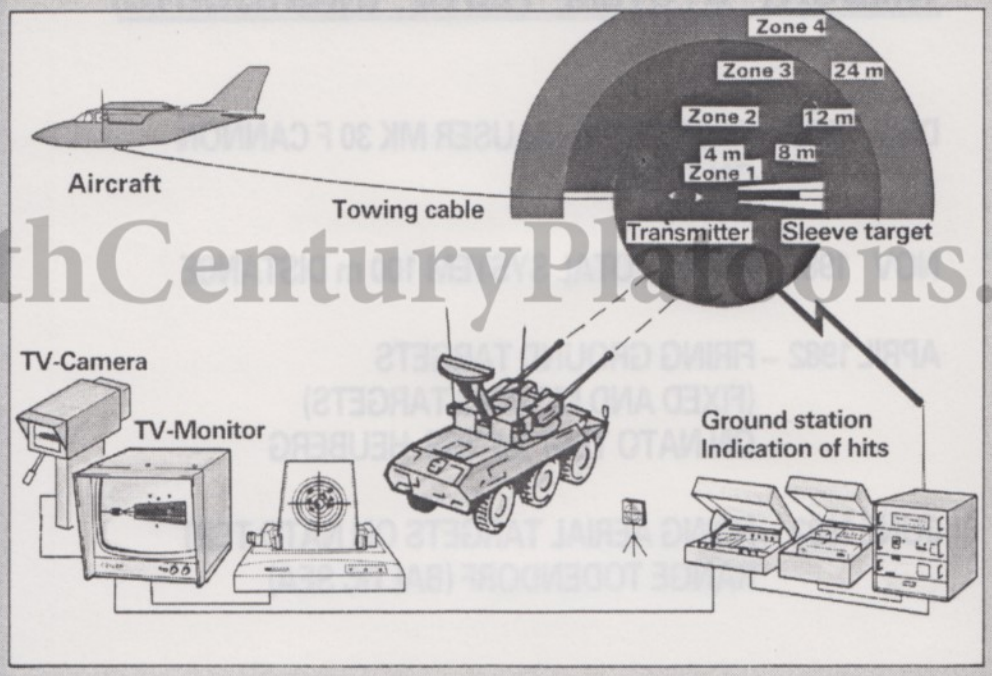
TOWED TARGET FOR TARGET PRESENTATION



Design TBM

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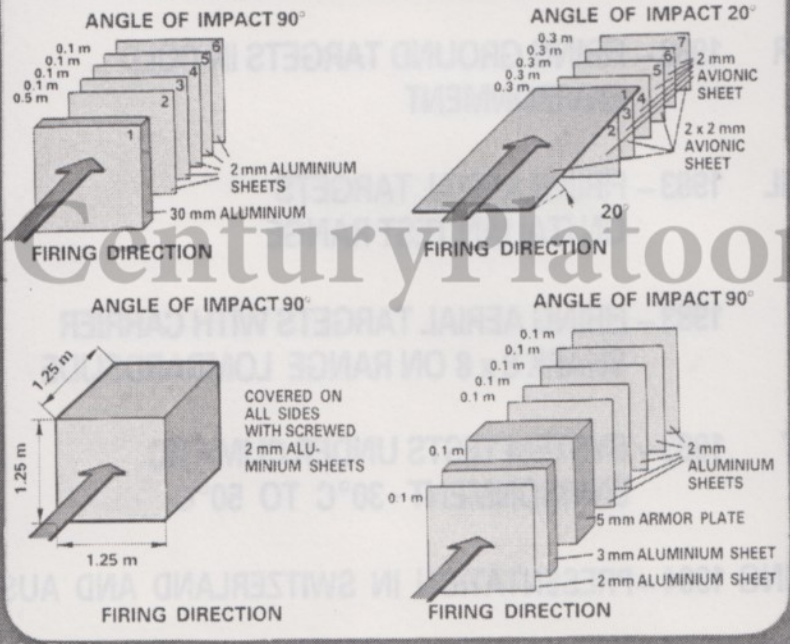
PENETRATION TESTS OF 30 mm AMMUNITION

GROUND TARGETS - RANGE 100 m



WILDCAT exists now since nearly 5 years. During this period numerous system and firing tests have been fulfilled very sucessfully.

Following completion of the **WILDCAT** system integration in May 1981, the vehicle was first presented to the public at the Salon International Aeronautique in Paris / Le Bourget in June 1981.

The test phase for the **WILDCAT** system included tests such as:

- Power pack test runs
- Optimization of gun / turret control system
- Total system adjustments
- Functional test of hydraulic systems
- Matching of chassis components
- Optimization of operational sequences
- System performance tests including firing trials

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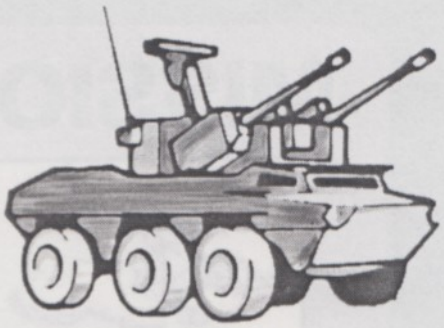
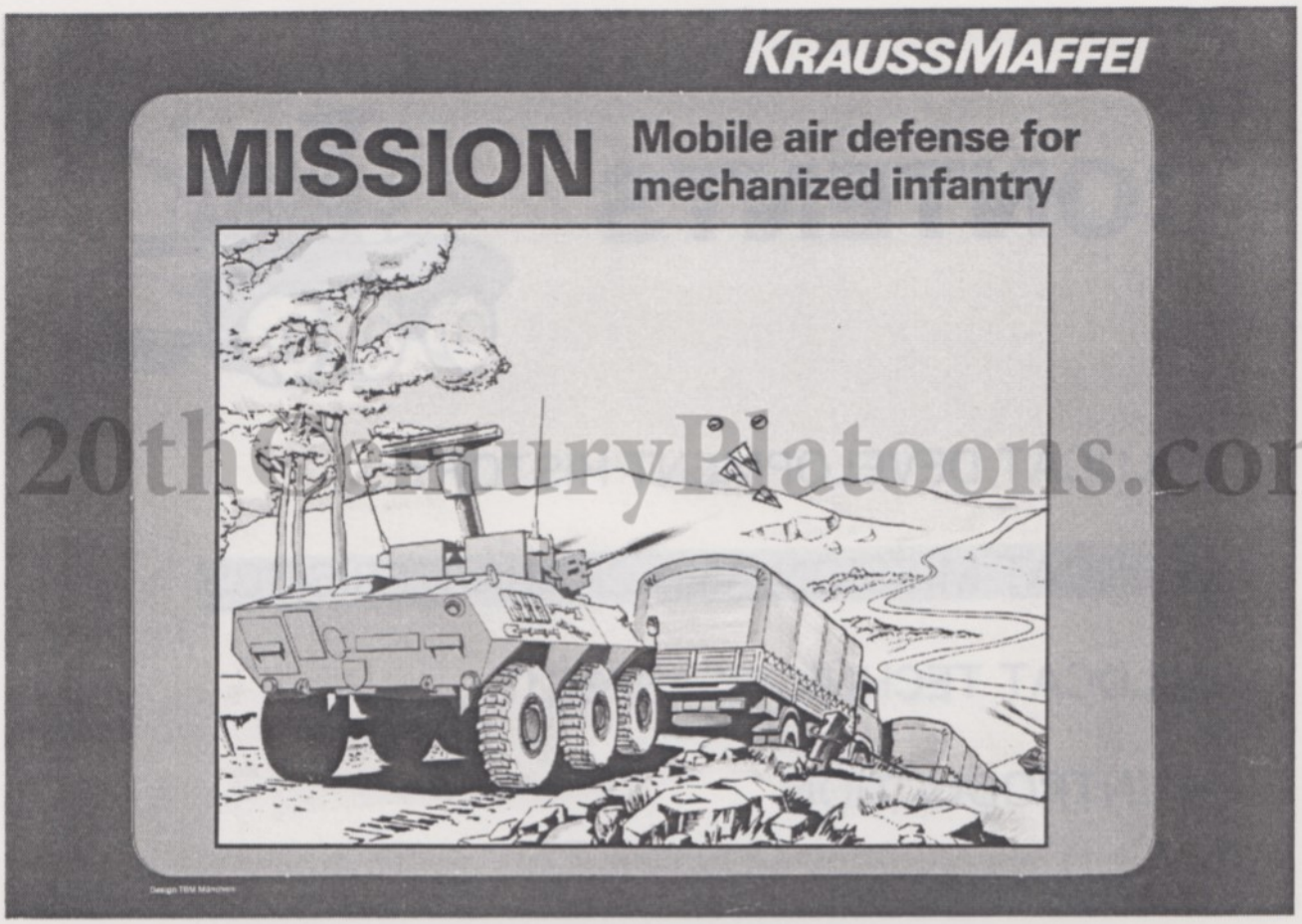
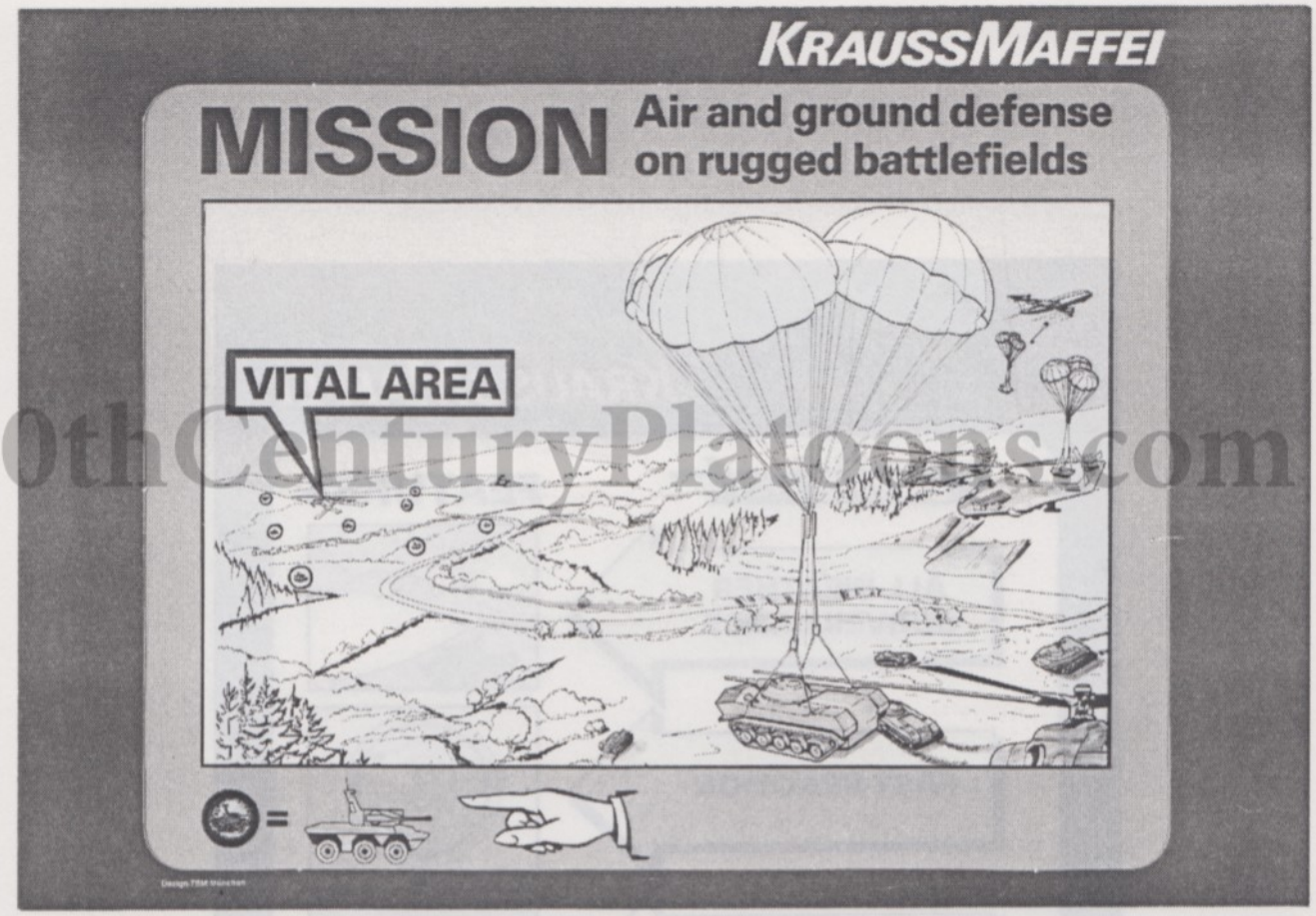




WILDCAT fulfills two missions:

The first mission is to provide low-level close range Air Defense coverage in rugged battlefield environment, for:

- Highly mobile mechanized infantry and
- important installations.



The second mission of **WILDCAT** is Ground and Air Defense of:

- Airborne launched attacks, for instance against airfields and
- Immediate fire support wherever needed against light armoured vehicles.

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FEATURES

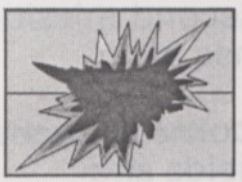
ALL-WEATHER SURVEILLANCE

FAST REACTION

AUTONOMOUS RAPID DEPLOYMENT

PASSIVE OR ACTIVE TRACKING

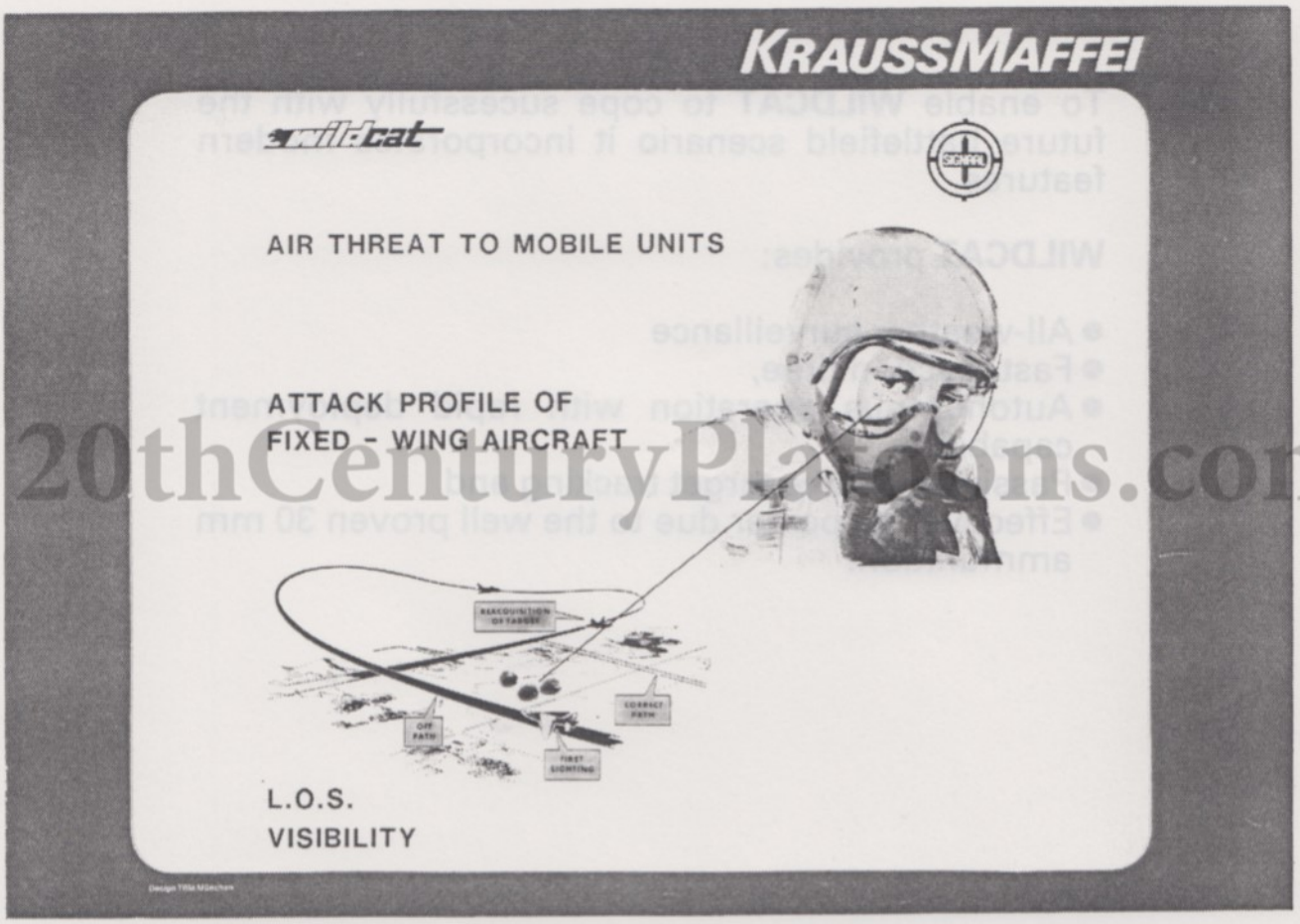
EFFECTIVE FIRE POWER



To enable **WILDCAT** to cope sucessfully with the future battlefield scenario it incorporates modern features.

WILDCAT provides:

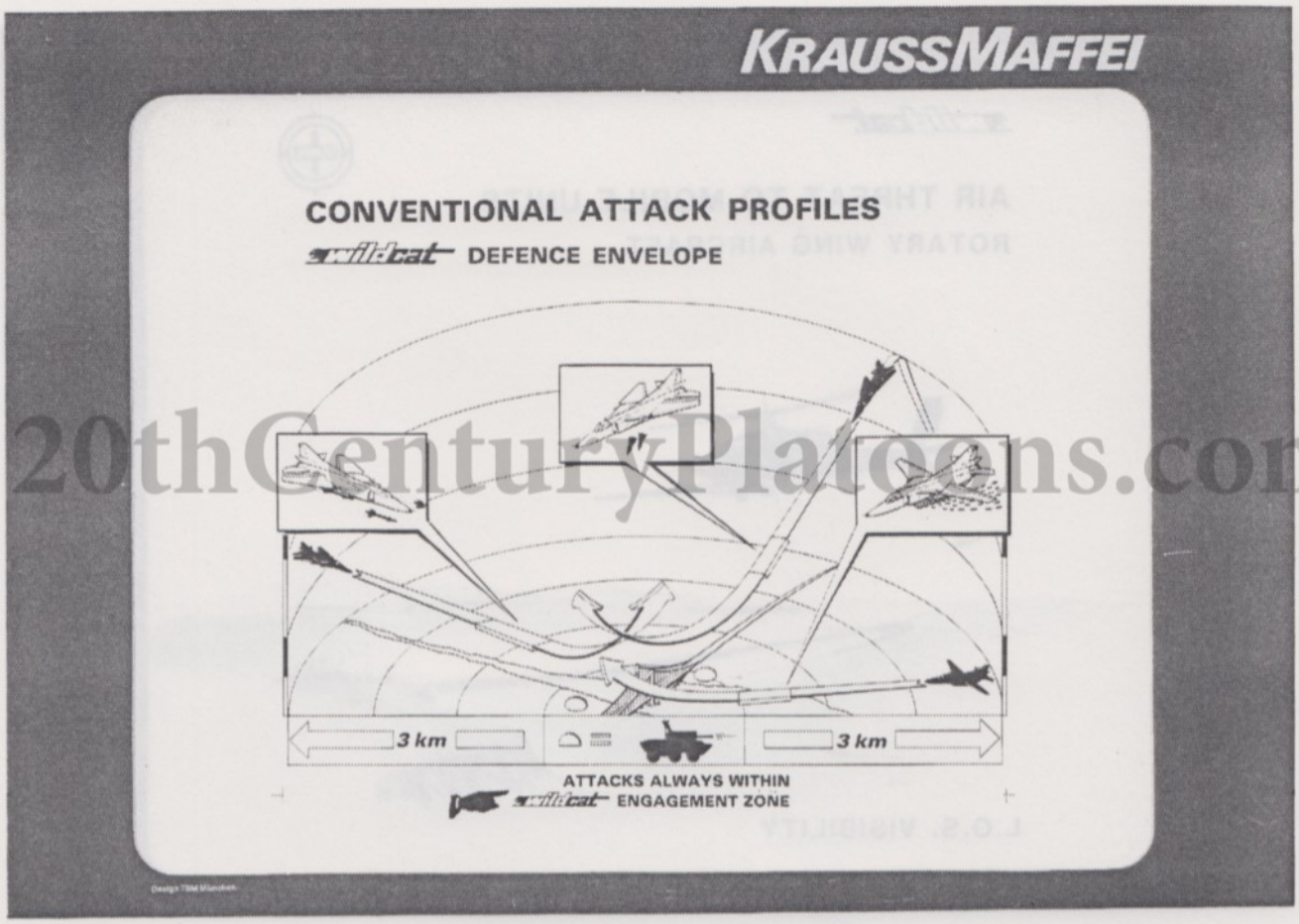
- All-weather surveillance
- Fast reaction time,
- Autonomous operation with rapid deployment capability,
- Passive or active target tracking and
- Effective fire power due to the well proven 30 mm ammunition.



The capabilities required of an anti-aircraft system are determined by the aerial threats it must counter. For the present, and for the forseeable future, the most dangerous threats are the low-flying, high-speed fighter bomber and the terrain-hugging attack helicopter.

Whatever conventional weapon is carried, the pilot must climb from his low-level approach in order to locate the target and prepare his attack dive. The pilot begins his climb to attack height between 5 and 7 kilometres from the target, depending on aircraft manoeuverability and climb capability. As he does so, the aircraft can be detected visually or on radar, and from this point the pilot will want to complete his attack while allowing as little opportunity as possible for anti-aircraft weapons to engage him.

Regardless of the type of weapon carried, a helicopter must leave its protective cover to sight and engage its target and, if the helicopter gunner can see his target, he can also be seen by the ground defences.



FIGHTER BOMBER ATTACK PROFILES

The attack profile that the pilot uses depends on the type of weapon carried, the terrain around the target, and the weather. The illustration here shows typical aircraft attack profiles and minimum dive angles required for unguided rockets, free falling bombs and cannon. The minimum height from which an attack dive can commence also depends on the type of weapon: for cannon it is approximately 600 m; for unguided rockets 800 m; and up to 1500 m for conventional bombs. For all attack profiles, however, regardless of weapon type, the start of the line-of-sight dive is always within a 3 km slant range from the target.

Weapon release ranges depend not only on the type of weapon and visibility but also on the nerves of the pilot. Weapon release can vary from 600m to 1400m for unguided rockets, 800m to 1200m for free falling bombs and 500m to 1500m for cannon.

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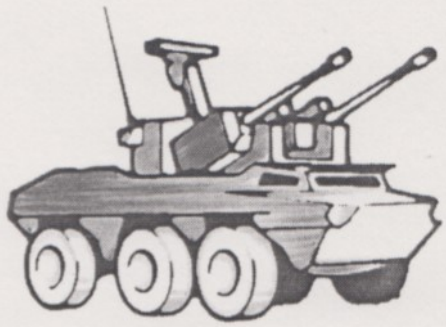

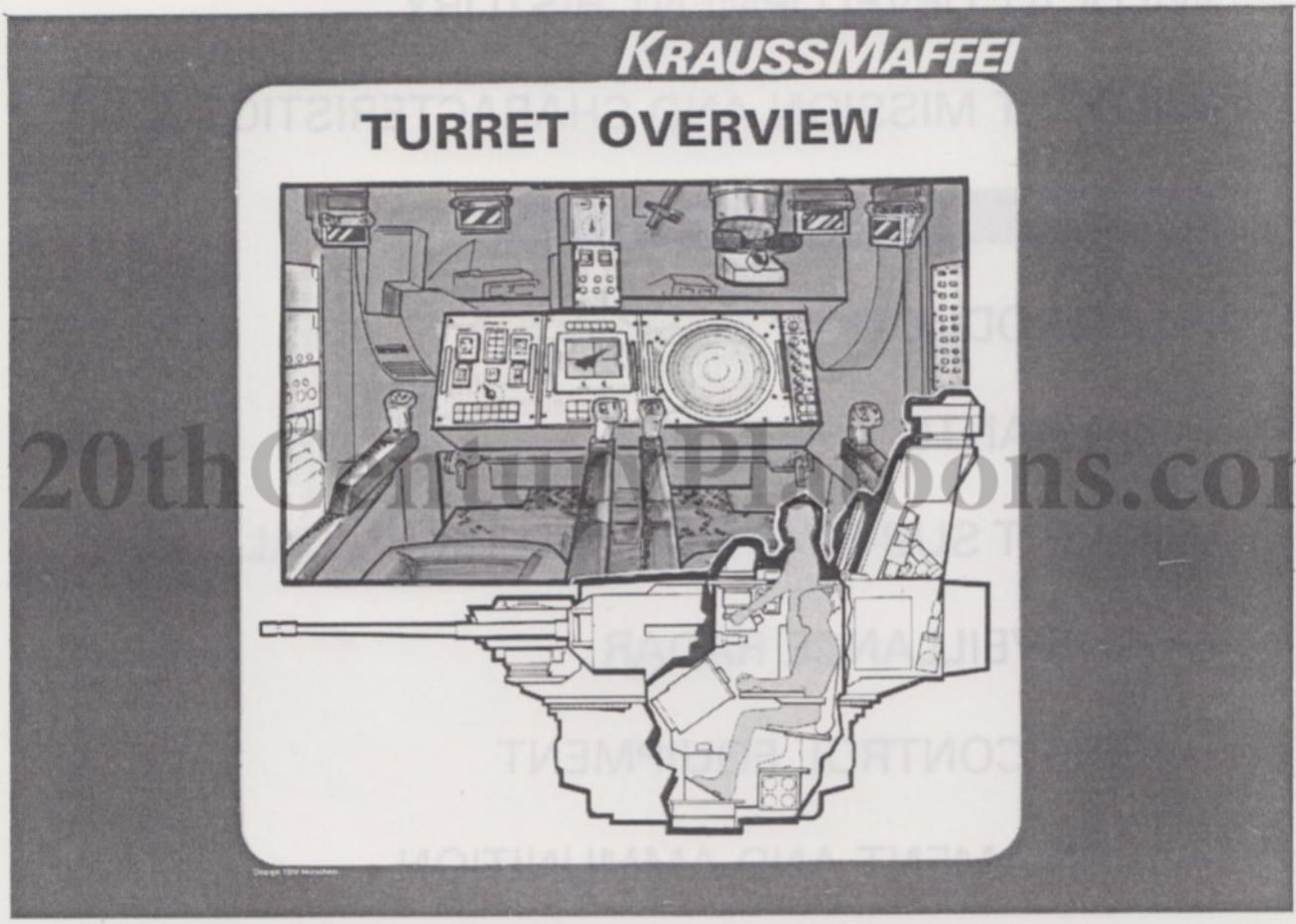

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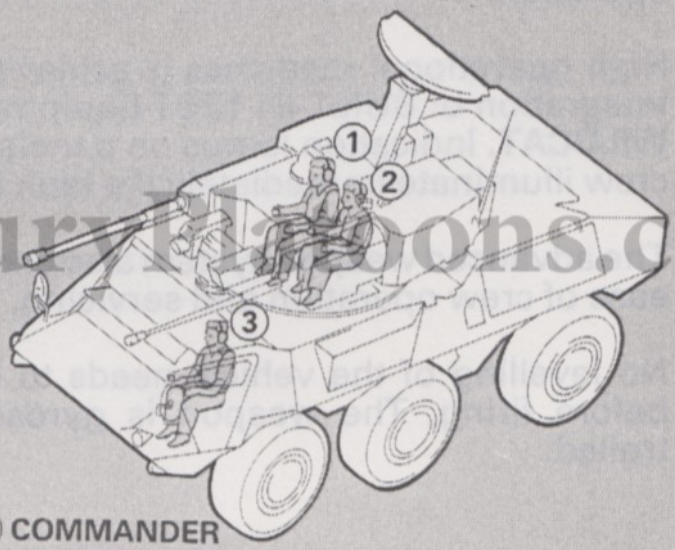
WILDCAT CREW STATIONS



1 COMMANDER
2 GUNNER
3 DRIVER

OPERATION

The **WILDCAT** Air Defense System only needs three men to operate it:

- A commander
- A gunner
- A driver

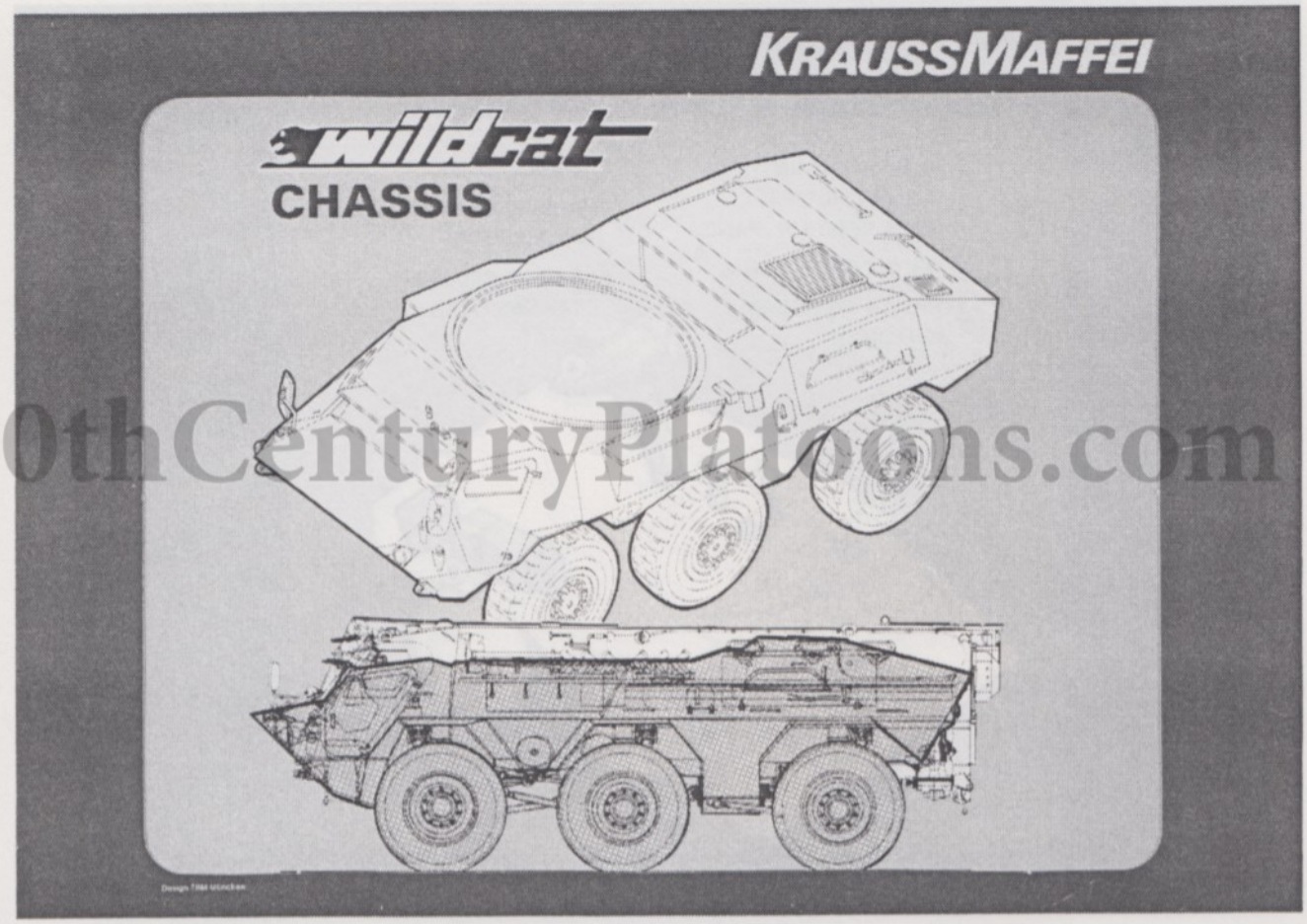
Without the driver the commander and gunner can maintain its operational capability. In case of emergency, WILDCAT can be operated by only one man.

Ease of operation has been achieved by automating the engagement operations. All crew positions are ergonomically designed for comfort. Instrument panels are laid out for easy reading, access and operation.

High operational readiness is achieved through the integration of BUILT-IN TEST Equipment (BITE) into **WILDCAT.** Indication lamps on panels in front of the crew illuminate immediately if a fault is detected.

The advanced weapon system also contributes to the ease of crew operation and servicing.

No levelling of the vehicle needs to be carried out before firing. The weapon is gyroscopically controlled.

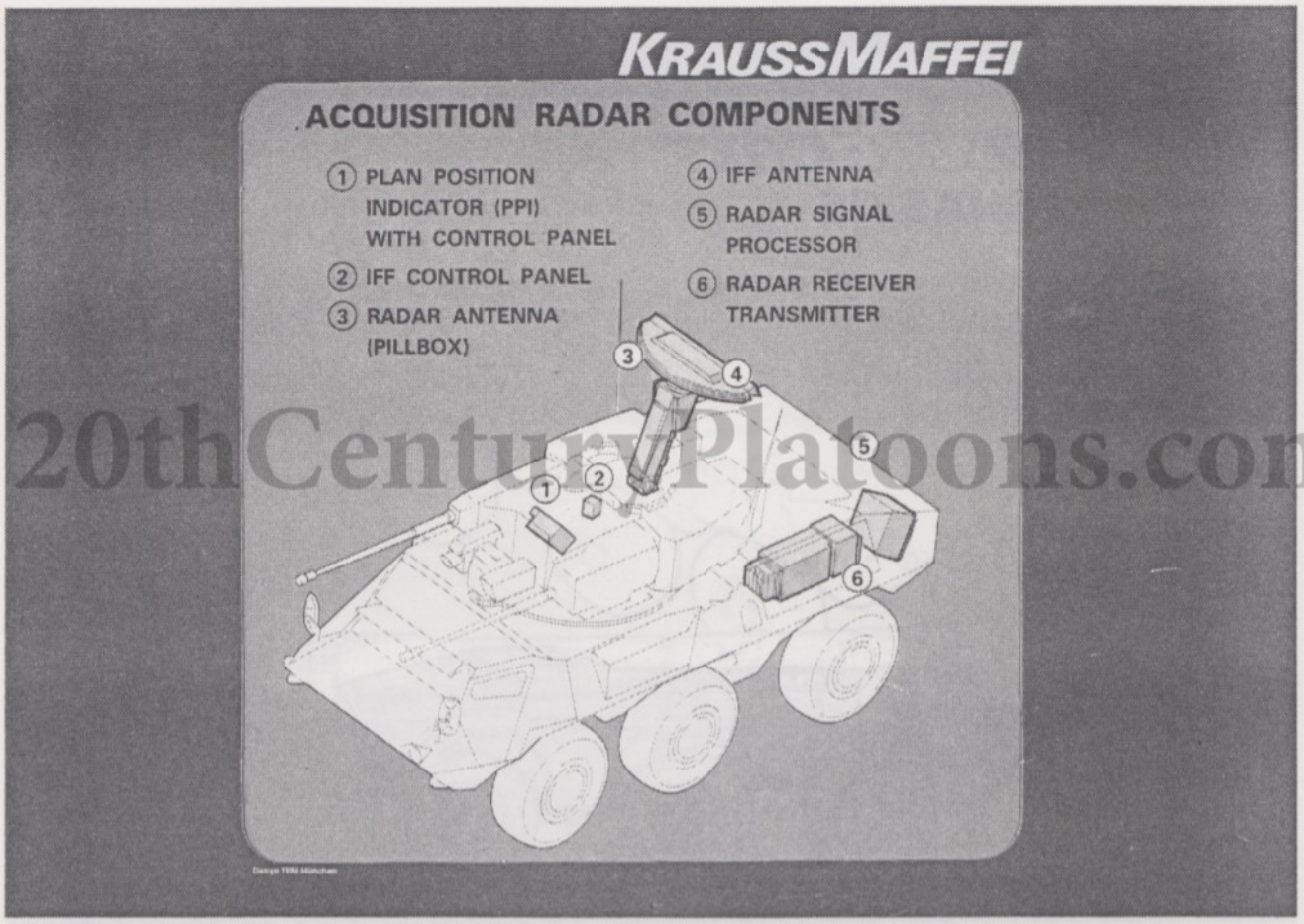


MAIN COMPONENTS

To guarantee **WILDCAT** to fulfill its role efficient - the system comprises the following main components:

- A chassis

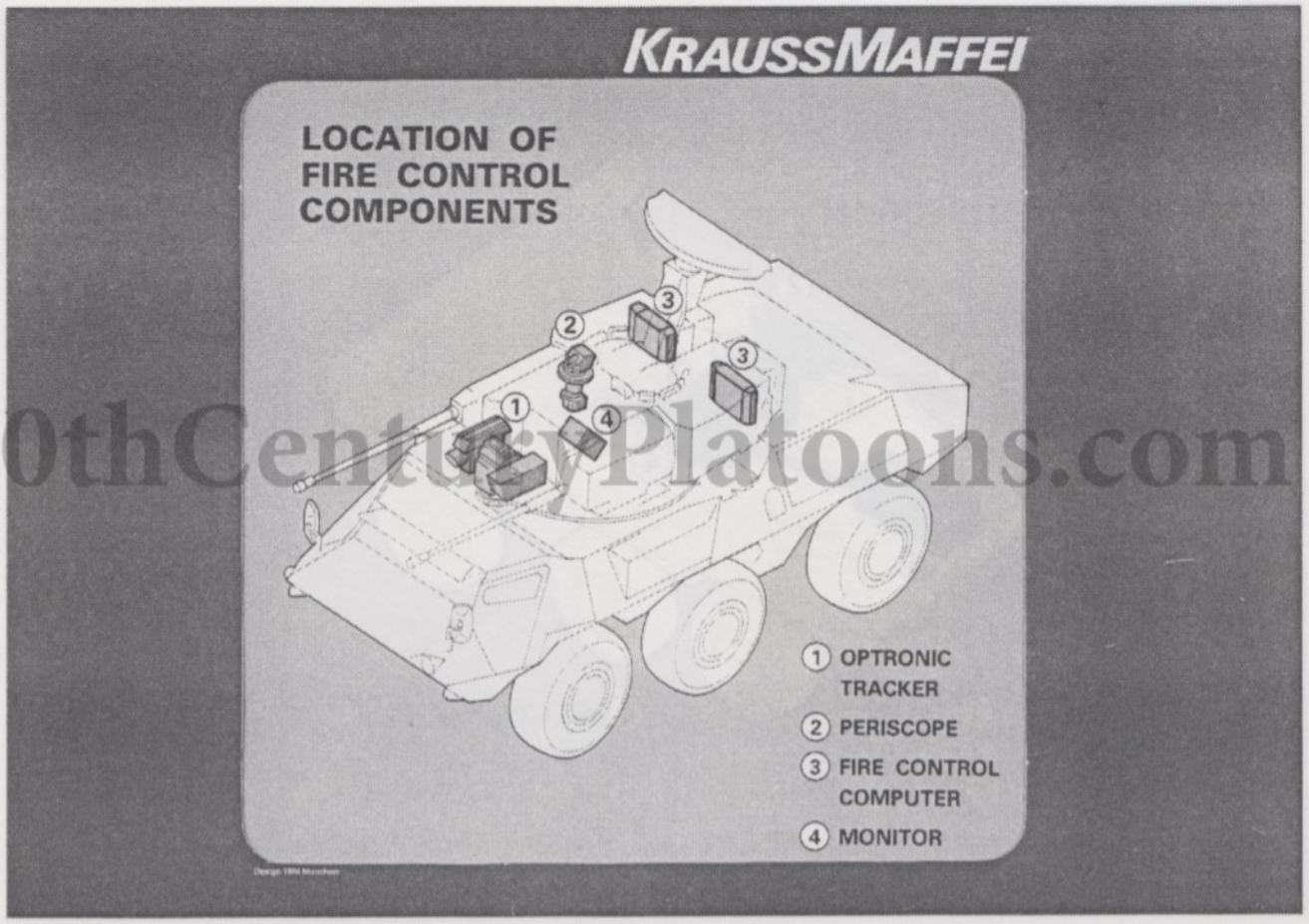
an adaption of the proven Transport Panzer TPZ-1 armoured personnel carrier, in quantity service with the German Army. It has a six-wheel drive with the front two axles steerable, powered by a 320 HP multi-fuel diesel engine.



- An acquisition radar

whereby the transmitter/receiver and data processing equipment are housed in the rear of the vehicle beside the engine compartment. This design has lowerd turret weight and overall dimensions significantly, thereby providing a low vehicle silhouette.

The radar antenna is installed on the rear of the turret and can be folded down for airtransport of the vehicle and for protection when passing under low bridges, through wooded area or when surveillance radar is not needed.



FIRE CONTROL EQUIPMENT COMPRISING

- An optronic tracker

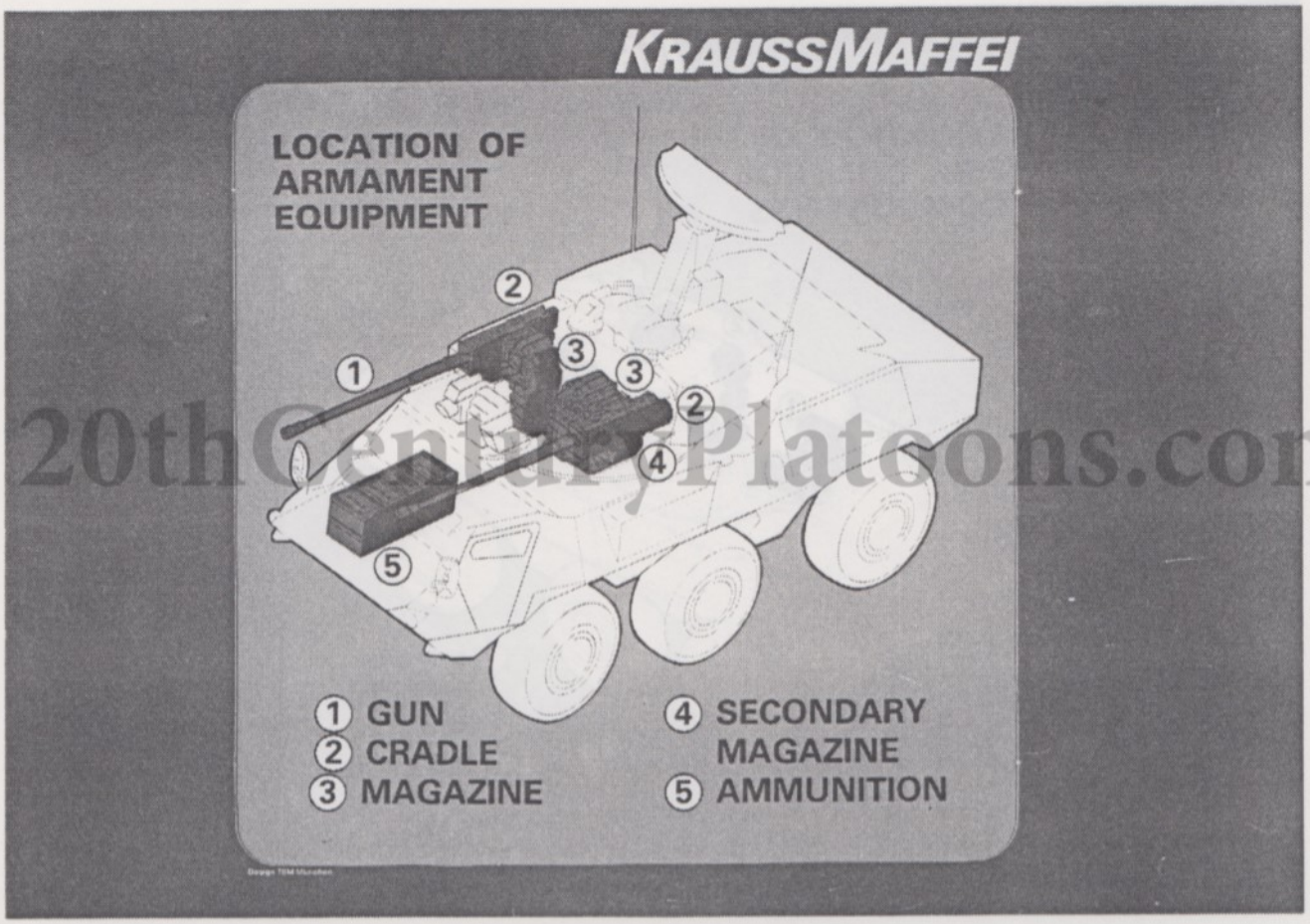
which is housed in a recess at the front of the turret and has its own elevation and bearing drive for independent target tracking.

- A periscope

mounted on the turret roof and used by the commander for air and ground observation. It is usually slaved to the optronic tracker but can be uncoupled and directed manually by the commander.

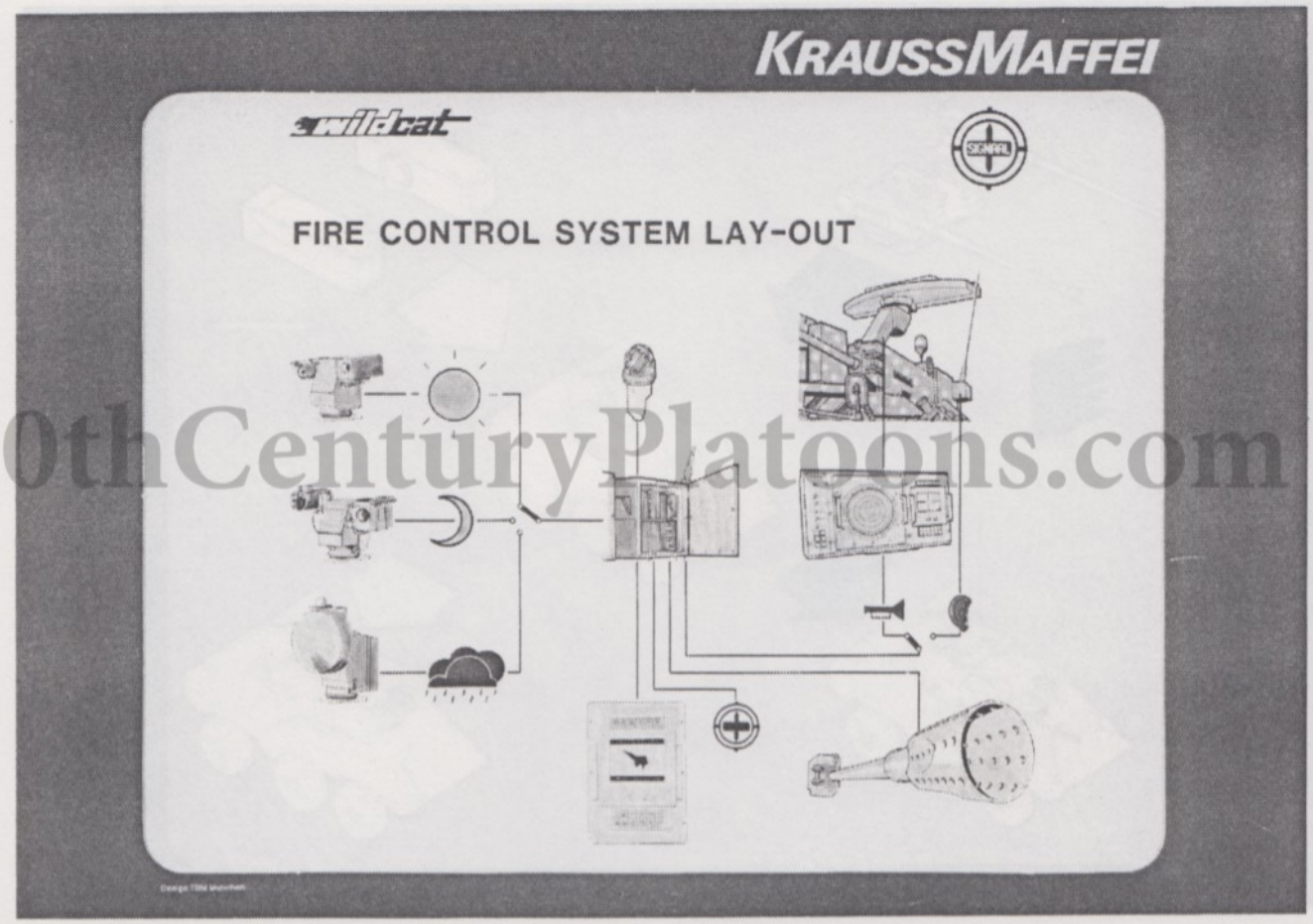
- A fire control computer

housed at the rear of the turret. It computes target data and determines cannon laying, firing bursts and monitors system status.



- And a cannon system

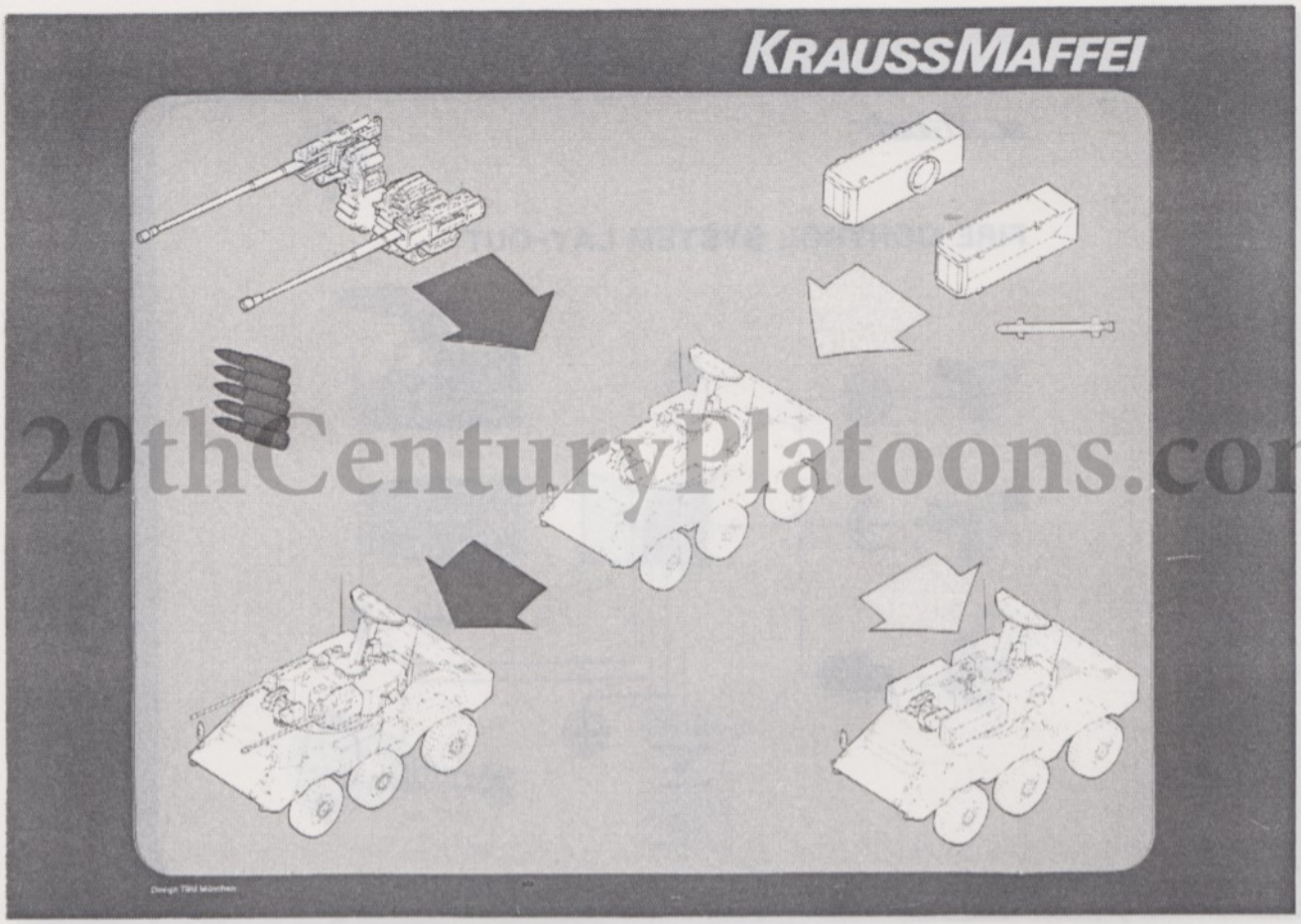
consisting of a twin cannon, mounted on either side of the turret which can traverse the full 360 degrees. The cannon can be elevated between -5 and 85 degrees.



WILDCAT includes the important advantage of tactical flexibility due to its modular fire control concept by selectable tracking devices depending on the threat being:

- For fair weather day operations, a TV/Laser combination
- For day and night operations, a FLIR/Laser combination
- For all weather operations a radar tracker

can be used.



- For target engagement in excess of the 3 km gun range a missile version will be available using homing type missiles, such as Stinger.

Besides its tactical flexibility and combat effectiveness, **WILDCAT** has two other important advantages, namely:

- Low procurement cost and
- Low life-cycle cost.

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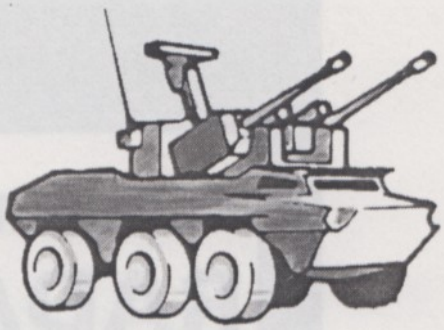
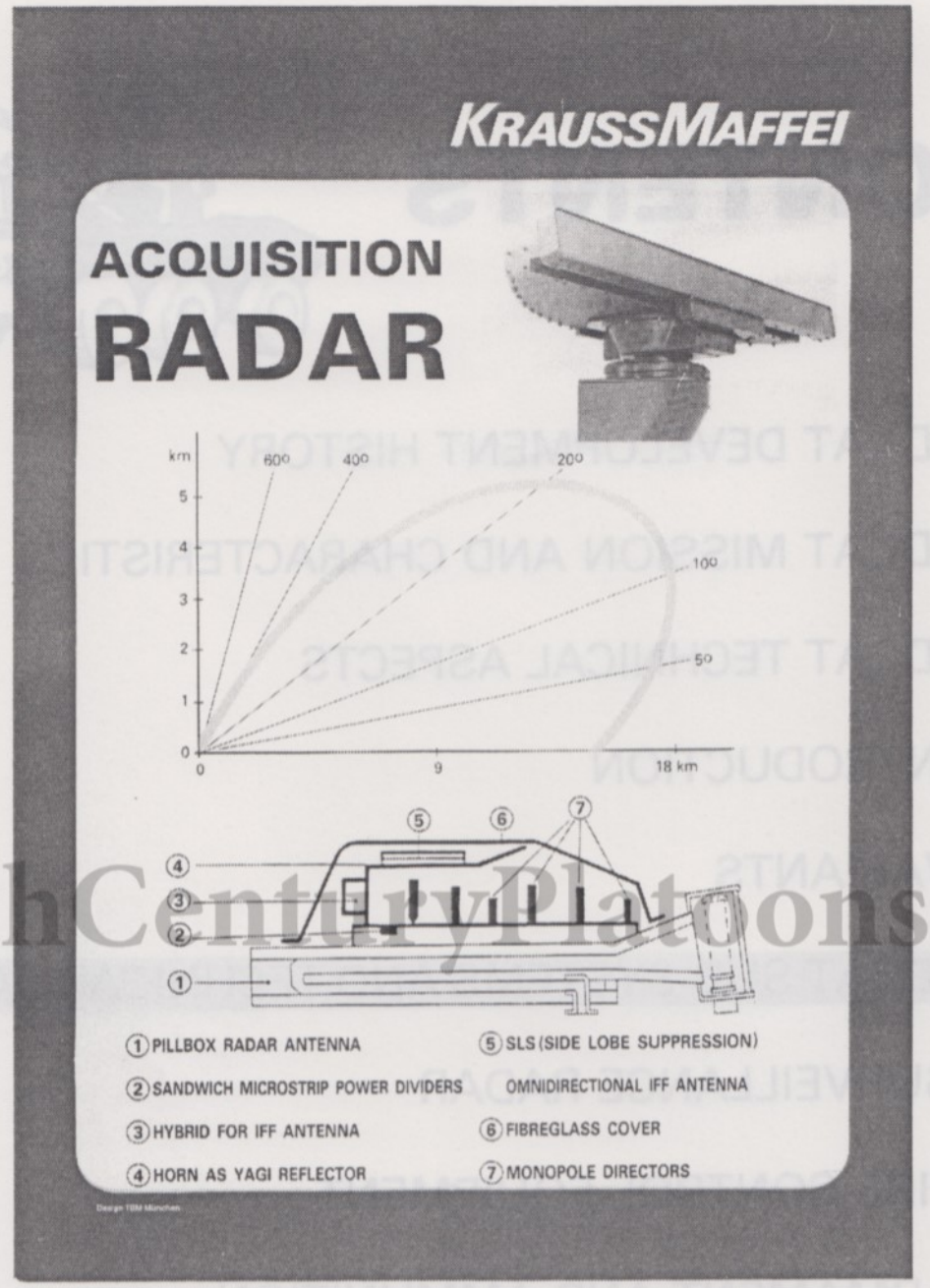
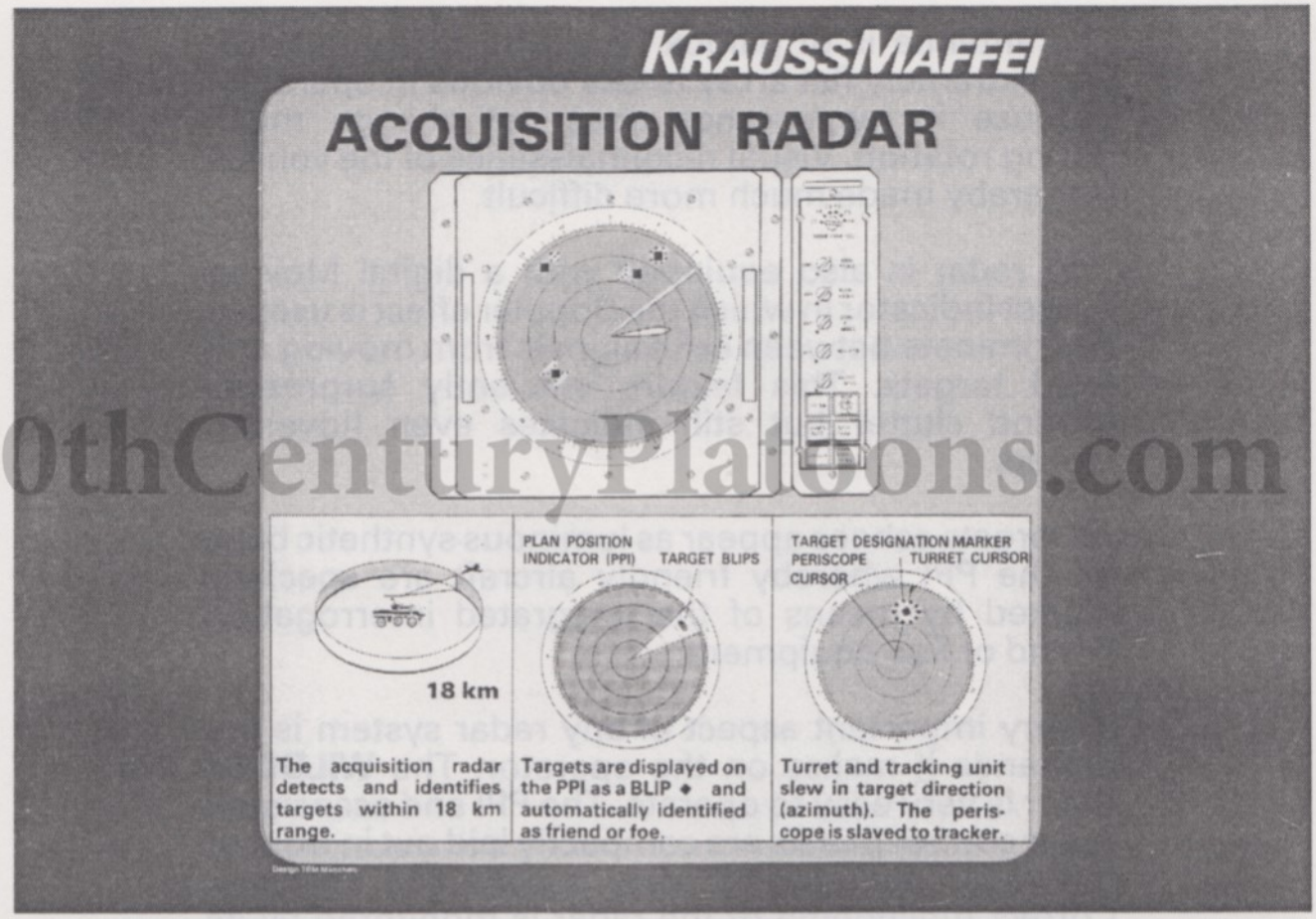




ACQUISITION SUBSYSTEM

The first essential of any air defence system is to give early warning of low flying enemy aircraft and hovering helicopters. In an age when modern flight instrumentation gives aerial targets the ability to fly such low-level approaches, the demands on surveillance radar systems are very high. The recently developed radar system produced by SIEMENS and installed in the **WILDCAT** efficiently meets these demands.



To ensure rapid and positive target detection, this radar has a high Sub-Clutter-Visibility. Blind speeds, which seriously limit the performance of conventional radar systems, are eliminated by means of a statistically varied pulse repetition frequency. All targets within a radius of 18 km are detected regardless at their speed. Radar surveillance can be carried out even when the vehicle is on the move, which is essential when **WILDCAT** is accompaning fast moving columns. Pulse repetition frequency variation combined with rapid transmission frequency changing and high transmitting power, help to neutralise enemy ECM.

The antenna is of pillbox type with integrated IFF. The extremely flat array is less obvious in operation because its appearance does not change much during rotation. Visual reconnaissance of the vehicle is thereby made much more difficult.

This radar is also equipped with a digital Moving Target Indicator in which the Doppler effect is used to discriminate between echo signals from moving and fixed targets. This feature efficiently surpresses ground clutter but still indicates even hovering targets.

All targets echoes appear as luminous synthetic blips on the PPI whereby friendly aircraft are specially marked by means of the integrated interrogation Friend or Foe equipment.

A very important aspect of any radar system is the demands it makes on the operator. The **WILDCAT** radar is very easy to operate. The PPI and associated radar control panels are compactly laid out in front of the radar operator for easy access and visibility. Correct functioning of the radar is monitored by its own built-in test equipment.

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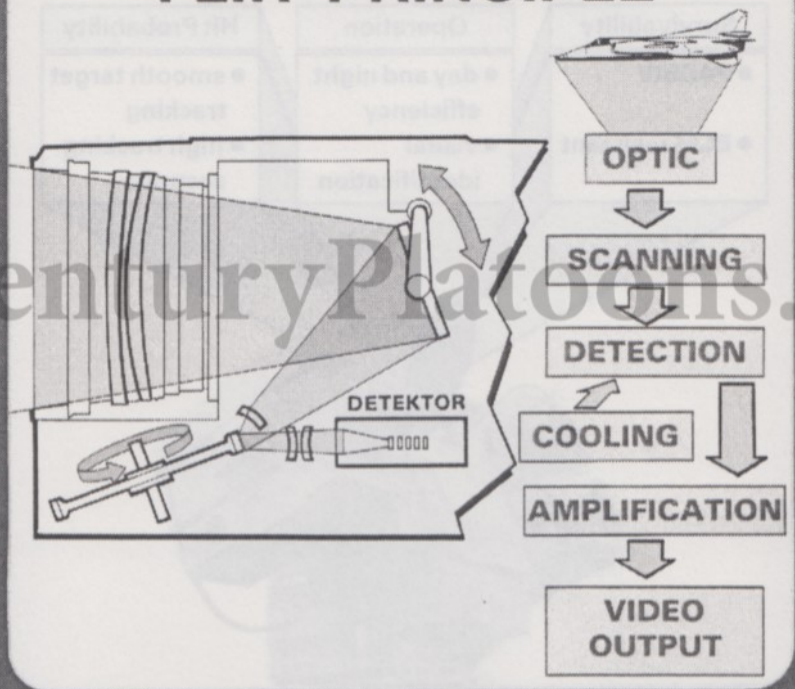
FLIR PRINCIPLE



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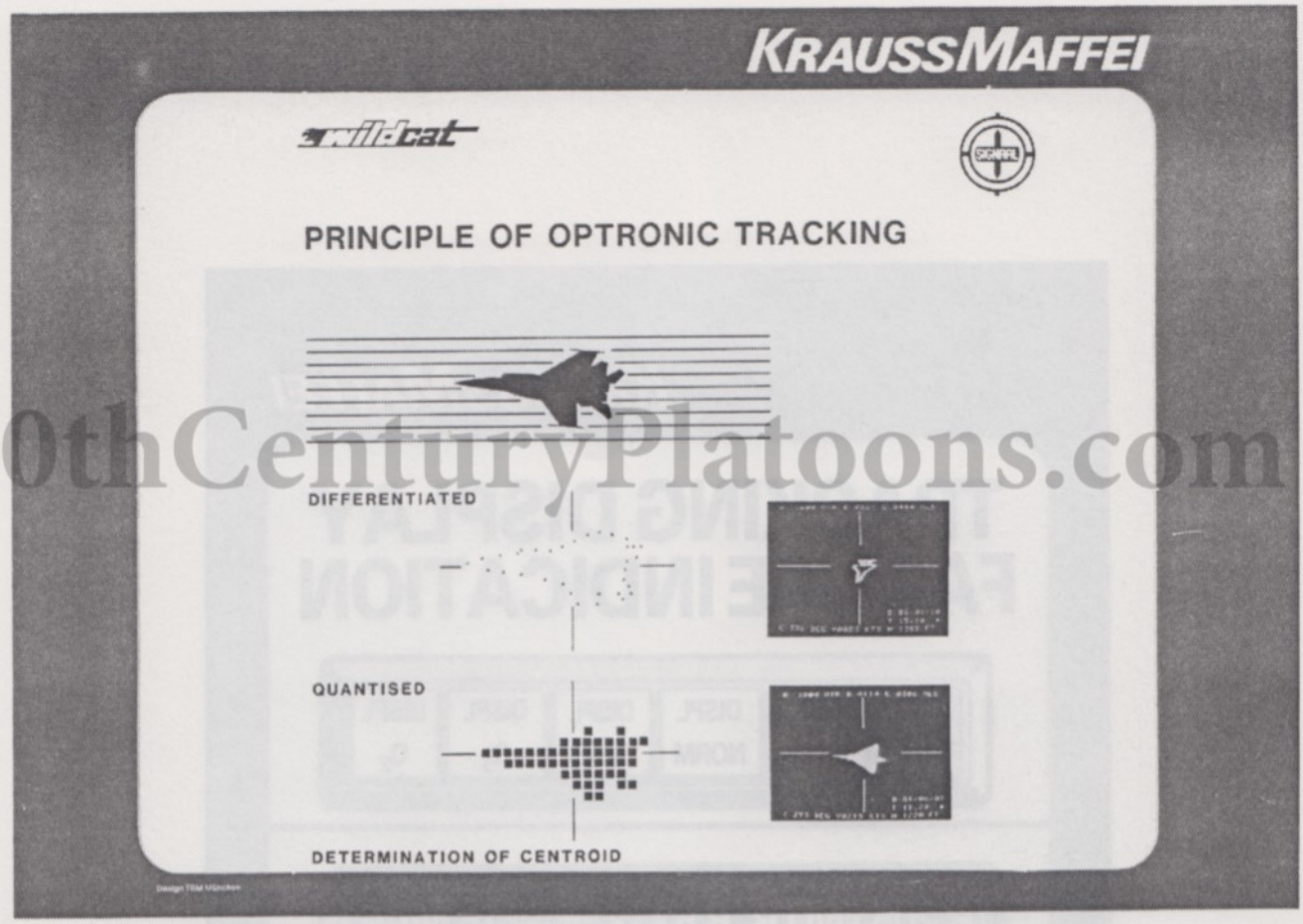
TECHNICAL DATA

INFRARED SENSOR		
WAVEBAND OF OPERATION		8 – 12 μm
FIELD OF VIEW	max.	25 x 40 mrad (V x H)
	min.	0.1 x 0.1 mrad
FRAME RATE		25 Hz
MIN. DETECTABLE IR RADIANCE		20 nW/m^2

FIRE CONTROL EQUIPMENT

The second important aspect of an air defence system is reliable and accurate target tracking and ranging. In the **WILDCAT**, these requirements are fully statisfied by the FLIR/laser combination produced by Hollandse Signaalapparaten. This combination helps to give the **WILDCAT** its high kill performance against all types of aerial targets. It also has excellent tracking capabilities for targets at ranges in excess of 10 km with good target background contrast.



The optronic tracking system consists of FLIR, laser rangefinder, optronic director and video processing equipment. Tracked targets are displayed on TV-monitors in front of the radar operator and commander.

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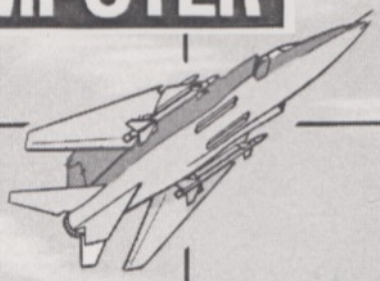
TRACKING DISPLAY FAILURE INDICATION

AUTO TRACK	FIRE FREE	DISPL NORM	DISPL DIFF	DISPL Q_1	DISPL Q_2

R 2051 MTR B 5318 E 1315 MLS

COMPUTER



HDG 54 SPD 258 KT ALT 385

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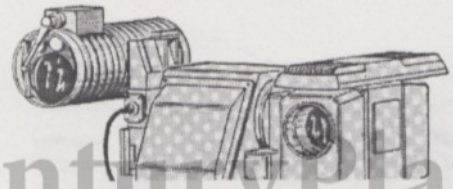
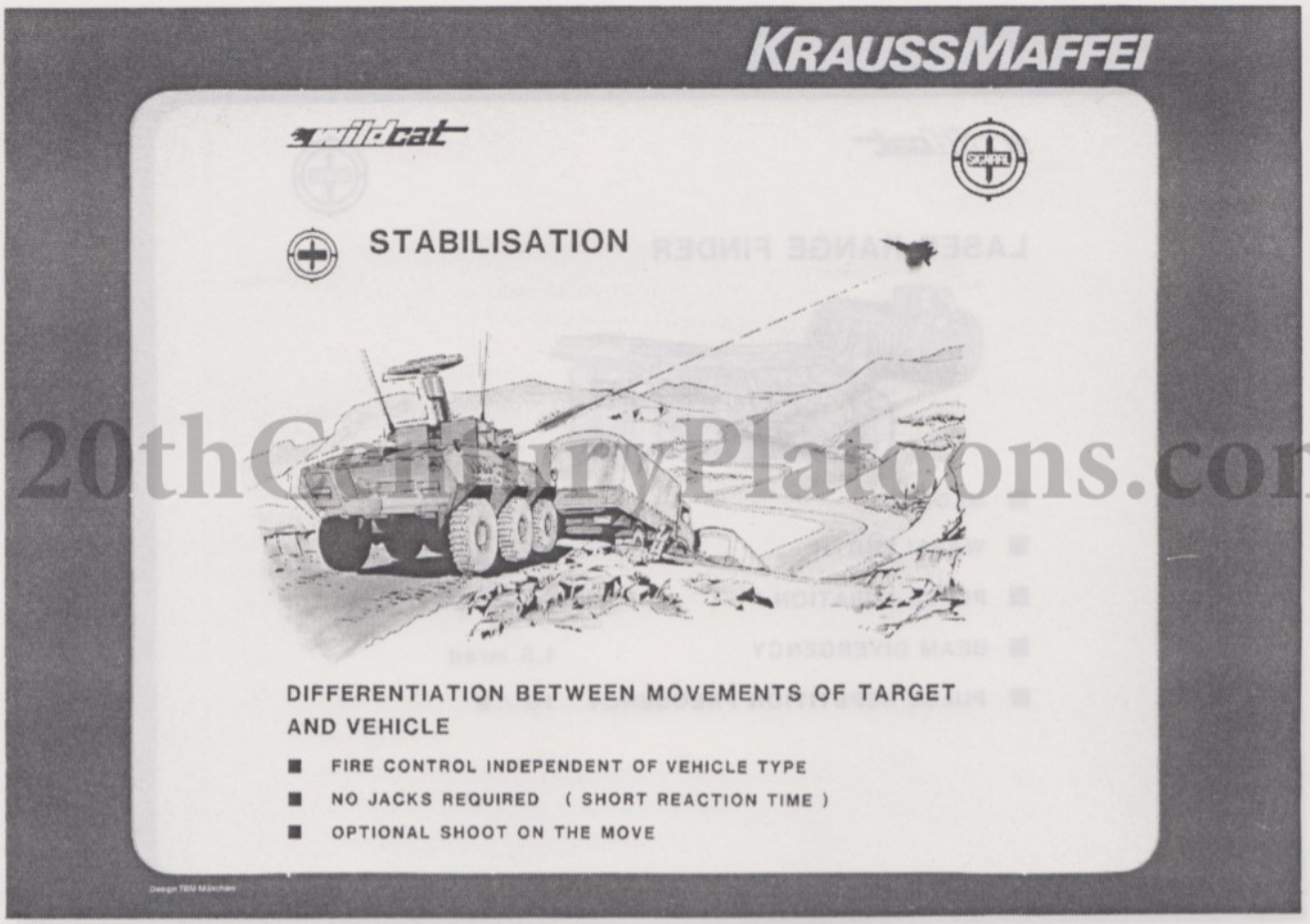
LASER RANGE FINDER



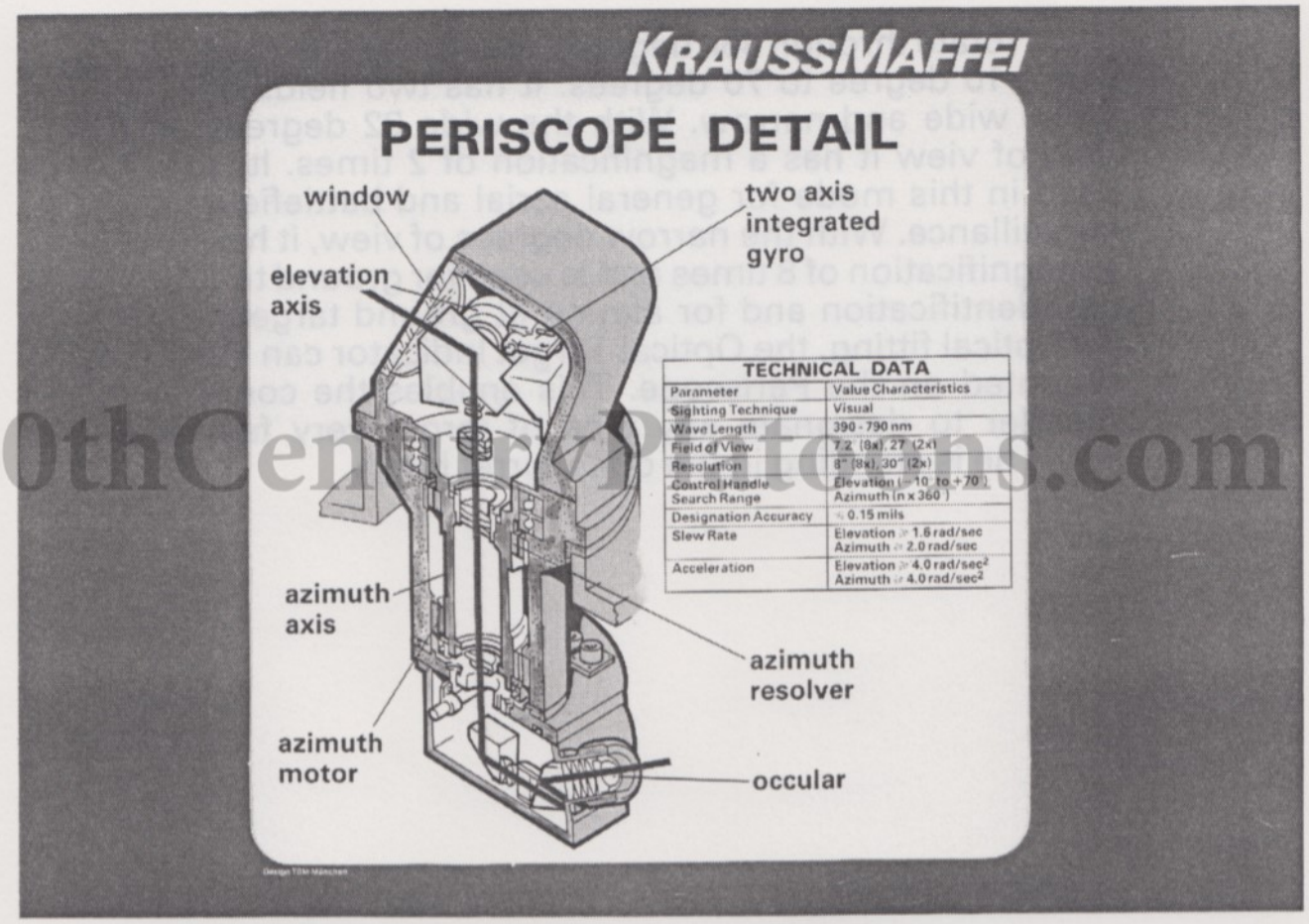
■ MEDIUM	Nd : YAG
■ WAVELENGTH	1.06 µm
■ PULSE DURATION	20 ns
■ BEAM DIVERGENCY	1.5 mrad
■ PULSE REPETITION FREQUENCY	10 / S

The laser rangefinder is designed for automatic operation. Automatic range measurement is made as soon as the TV-tracker remains locked on.

The transmitter is a solid state Neodym YAG-type with a wavelength of 1.06 µm with a 10 Hz repetition frequency. The window on the TV-camera and the laser rangefinder both have remotely controlled wipers and washers thereby avoiding tracking inaccuracies due to rain water and dirt.

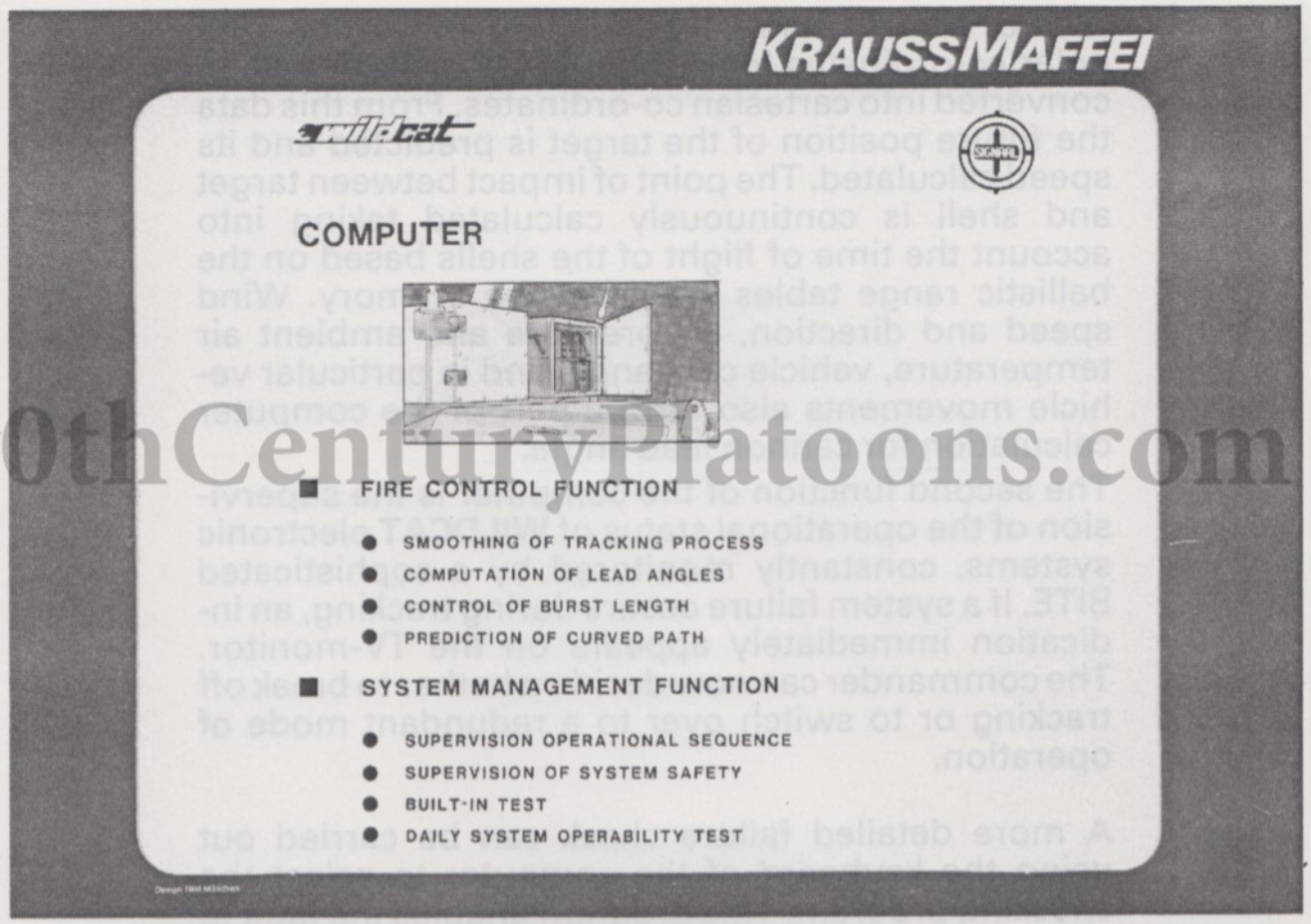


The camera and laser rangefinder are mounted on a servo controlled director with its own drive motor for bearing and elevation. These motors anable the optronic tracker to follow the target, whilst the cannon are laid to give lead angle for engagement. The optronic director also includes a gyro mechanism for measuring vehicle movements which are compensated for by the fire control computer to allow cannon stabilisation for ground target engagement on the move.



The commander's periscope in the turret has four functions:
target acquisition, aerial and battlefield surveillance, supervision of automatic target tracking, kill assessment and manual tracking. During automatic tracking, it moves in bearing and elevation with the optronic tracker but it can be uncoupled and directed by the joystick.

It can rotate through 360 degrees and can be elevated from -10 degree to 70 degrees. It has two fields of view, wide and narrow. With the wide 32 degrees field of view it has a magnification of 2 times. It is used in this mode for general aerial and battlefield surveillance. With the narrow degrees of view, it has a magnification of 8 times and is used for ground target identification and for aiming at ground targets. An optical fitting, the Optical Target Indicator can be mounted on the Periscope. This enables the commander to designate any type of target very fast while he is standing in the open turret hatch.



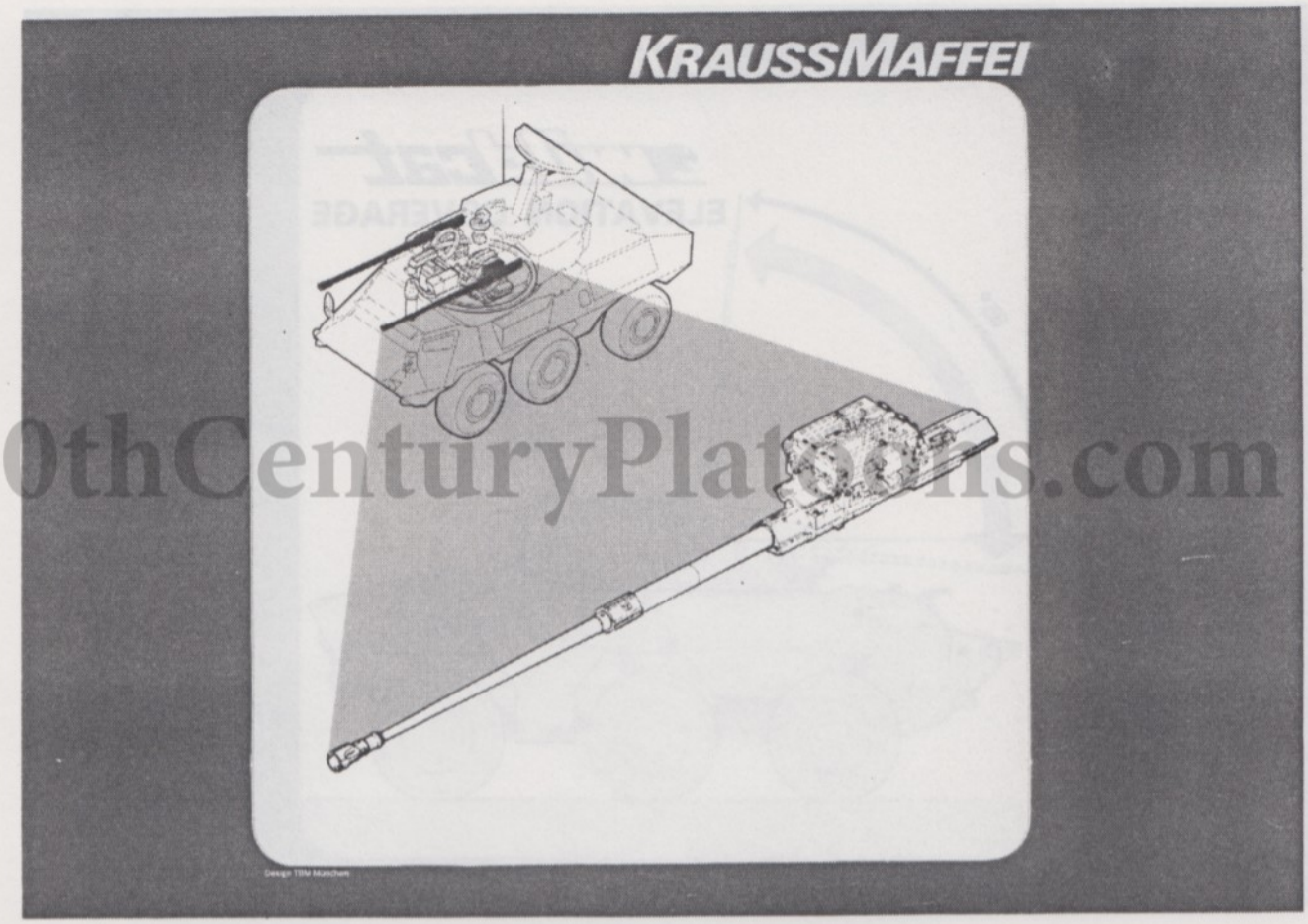
From the moment tracking begins, angular data is fed to fire control computer. This very fast fire control computer is the latest member of the micro computer family with a 24 bit parallel capacity. It has two functions in the **WILDCAT** system.

First of all, of course, lead angle computation. The polar co-ordinates form the optronic tracker will be converted into cartesian co-ordinates. From this data the future position of the target is predicted and its speed calculated. The point of impact between target and shell is continuously calculated taking into account the time of flight of the shells based on the ballistic range tables stored in the memory. Wind speed and direction, air pressure and ambient air temperature, vehicle cant angle and in particular vehicle movements also form a part of the computer calculation for cannon lead angle.

The second function of the computer is the supervision of the operational status of **WILDCAT** electronic systems, constantly monitored by a sophisticated BITE. If a system failure occurs during tracking, an indication immediately appears on the TV-monitor. The commander can now decide whether to break off tracking or to switch over to a redundant mode of operation.

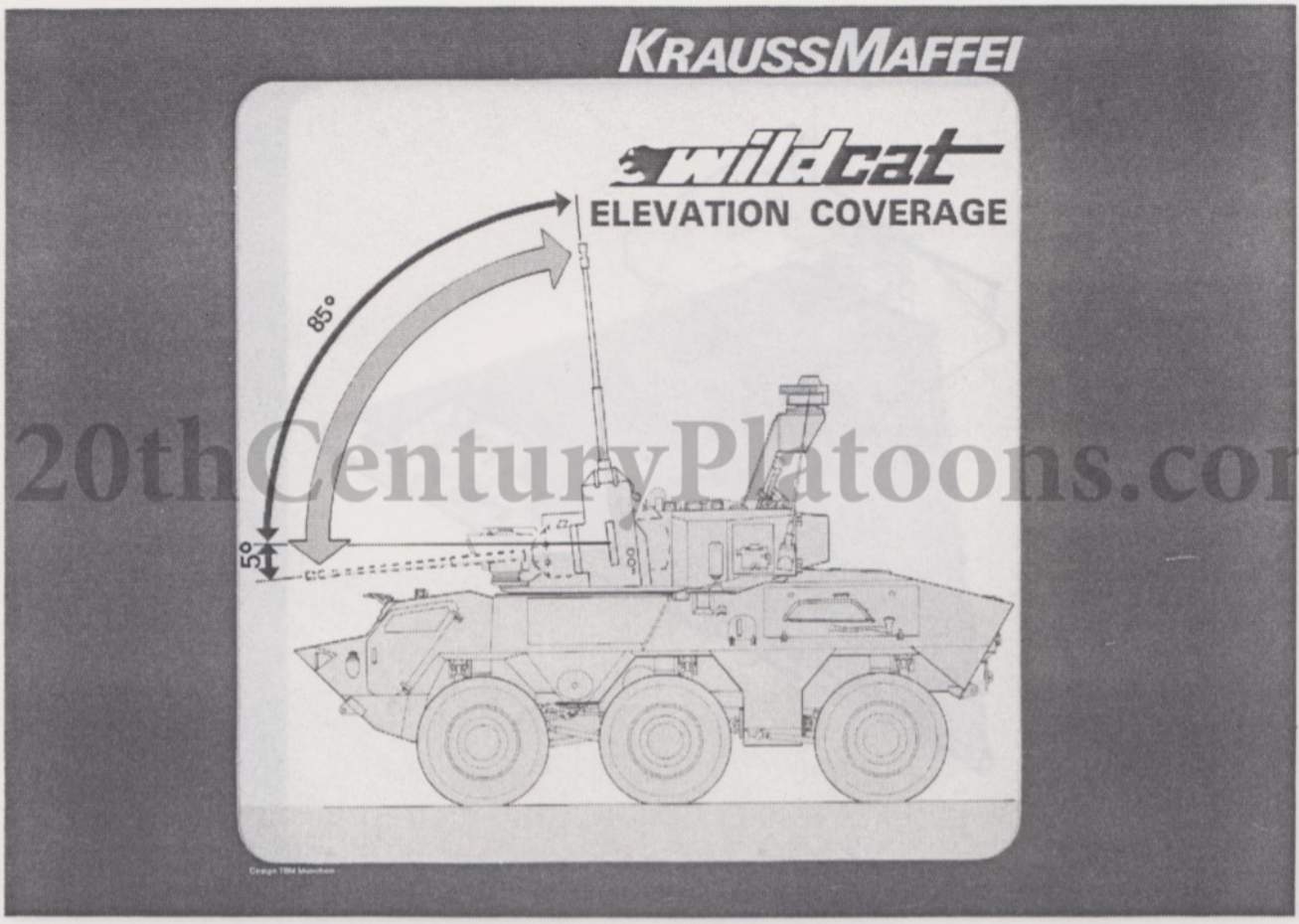
A more detailed failure check can be carried out using the keyboard of the computer to select the checking program. This program enables the fault to be located down to printed circuit board level. The fault location and a recommondation for repair is then displayed on the monitor. In addition, mechanical and automotive systems are monitored by comprehensive sensing devices which relay fault to warning lamps. Complete system monitoring is thereby achieved.

This significantly reduces the time needed for repair and increases **WILDCAT's** combat readiness.

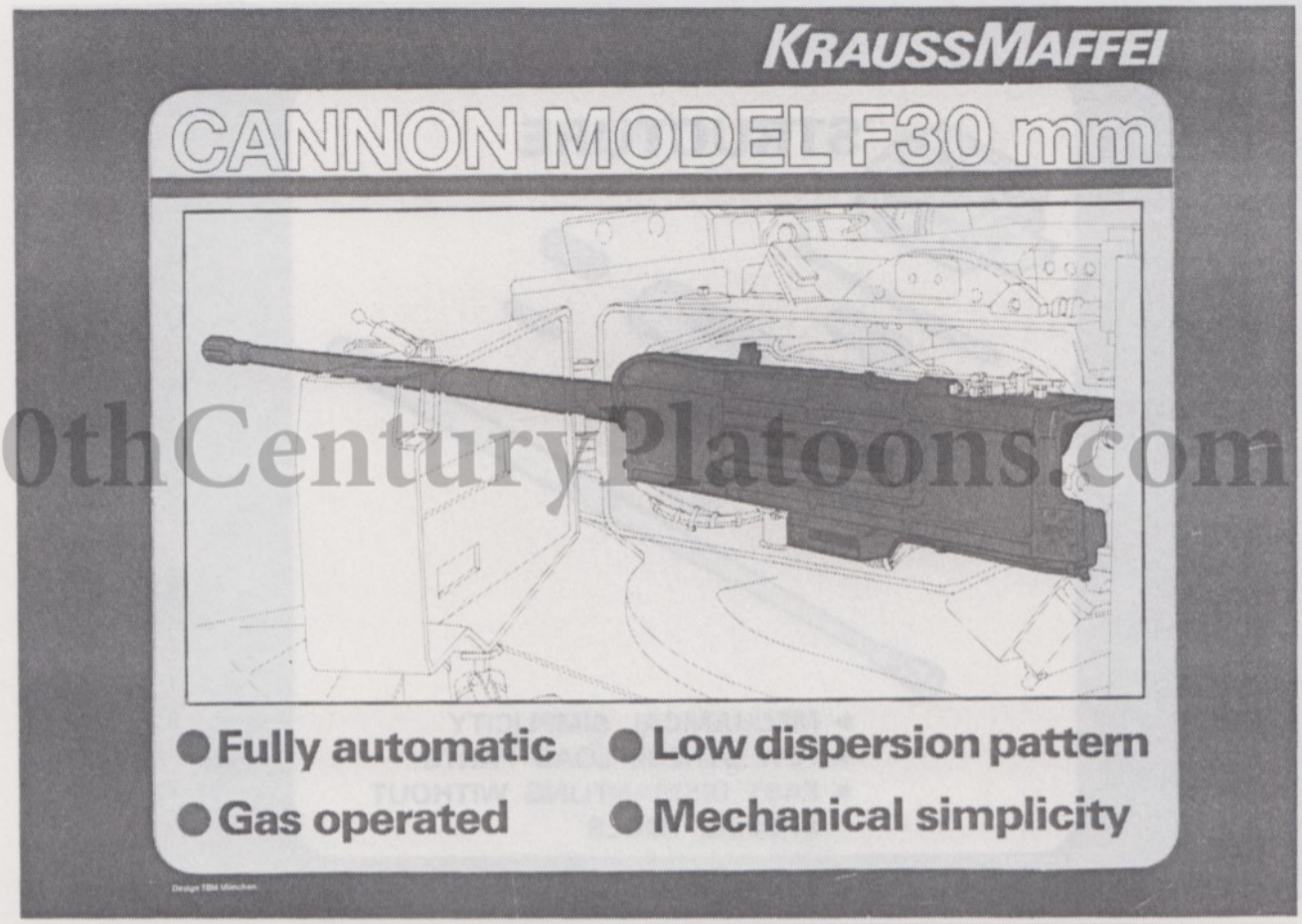


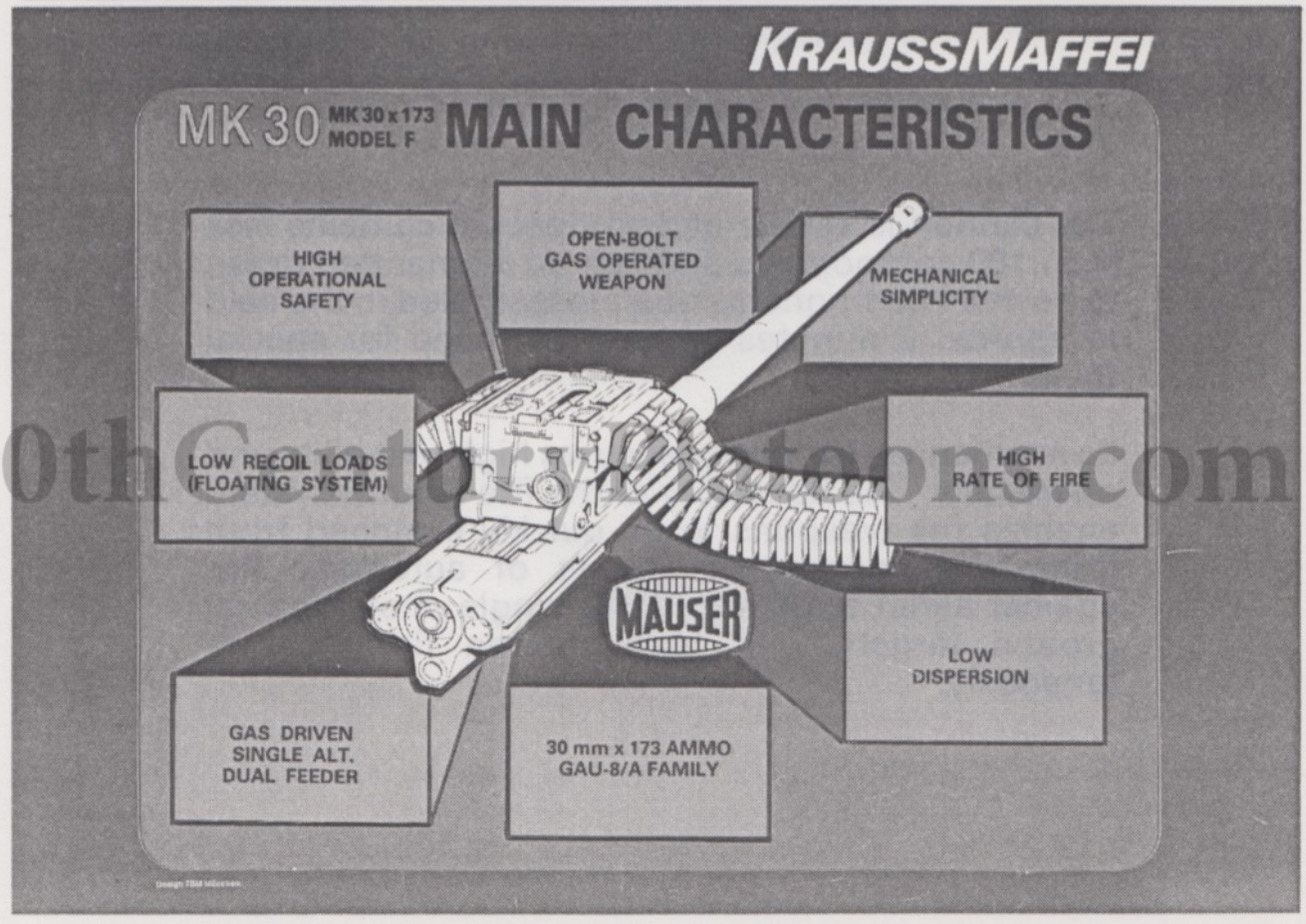
ARMAMENT AND AMMUNITION

The cannon we have selected was the MAUSER F-30 mm cannon. It is the only weapon excisting having with 800 rounds per min. per barrel the highest rate of fire than any other cannon in the world of a similar caliber, giving an engagement range of 3 km combined with very low dispersion pattern, leigthweight and mechanical simplicity.



Two of those cannon are mounted on either side of the turret. Both cannon are connected via a common drive shaft. They can be lowered down to -5 degrees and raised to +85 degrees. Each cannon is protected against environmental conditions and small arms fire by an armour cover.





The MAUSER Model F-30 mm cannon is a fully automatic, gas operated weapon. It is cradle mouted on floating bearings which absorb most of the weapon recoil.

The cannon is simple and compact. It contains less than 100 components and can be dismantled down to its main components and reassembled in the field in approx. 2 minutes without the need for special tools.

Its mechanical simplicity ensures high reliability and operability. The flexability of the fire control system enables the weapons to be quickly switched from firing pre-programmed bursts of automatic fire against aerial targets to firing single shots against ground targets with both cannon firing simultaneously.

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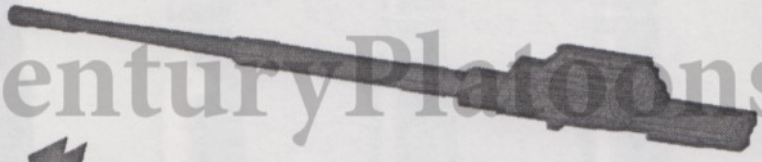
TACTICAL ADVANTAGES



- HIGH HIT PROBABILITY
- ENGAGEMENT OF AIR AND GROUND TARGETS
- HIGH AVAILABILITY

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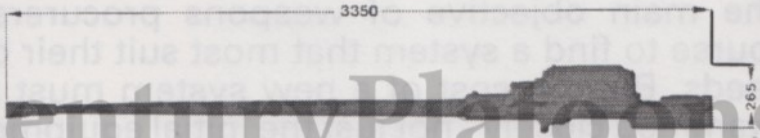
TECHNICAL DATA



CALIBRE	30 mm
RATE OF FIRE	800 ROUNDS / MIN
WEIGHT	141.5 kg

RECOIL FORCE	1800 daN
RECOIL TRAVEL	40/3 mm
GAS PRESSURE	3600 bar
FEED MECHANISM	SINGLE/DUAL/ LINKLESS

AMMUNITION

The main objective of weapons procurers, is of course to find a system that most suit their defence needs. But the cost of a new system must also be examined closely - not just the initial equipment cost but also the recurring cost over the system's life time. Of these, ammunition and barrel replacement are too of the largest.

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TP -T

- Round length 290 mm
- Round weight 811 gm
- Projectile weight 363 gm
- Muzzle velocity 1100 m/sec
- Time of flight 2.70 sec to 2 km

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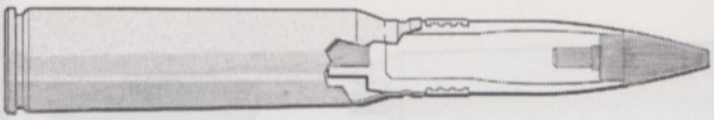
HEI / SD - T



• Round length	290 mm
• Round weight	811 gm
• Projectile weight	363 gm
• Muzzle velocity	1100 m/sec
• Time of flight	2.70 sec to 2 km
• Self destruct	6.5 sec

Great attention was therefore paid to fulfill this requirement in particular. The surest answer to the destruction of aerial targets is to employ an ammunition that operates at low impact angles, with a sufficient delay to allow the round to penetrate before exploding. It must have good fragmentation on exploding and, most important of all, a high incendiary effect and a powerfull blast. Our selected ammunition meets this demand. It is also in mass production. Mass production means a very low unit cost because common components of the standard round are used in all its variants.
It consists of a Training Practise round, a High Explosive Incendiary round with Self Destruct (SD) for use against aircraft and helicopters. It can also be used effectively against leight armoured vehicles and trucks.

The destructive effect of high explosive in the 30 mm HEI-SD round is guaranteed by the zirconium incendiary charge. The fire producing effect of this substance are well-known and even if an aircraft is not immediately destroyed by a hit, the gradual spread of fire will tender the plant unflyable. Fire has been almost the only cause of loss in aerial combat.

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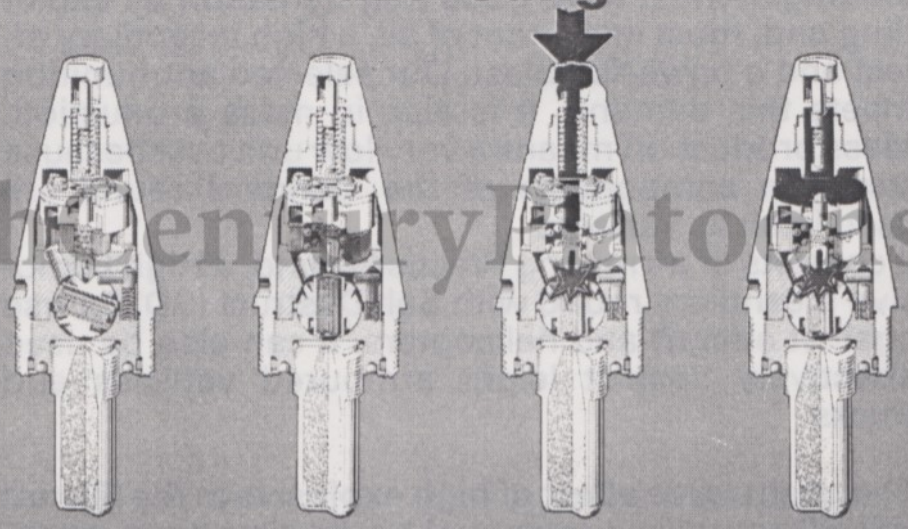
30 mm HEI-SD
Nose Fuze Junghans



non-armed configuration | armed configuration | release on impact | SD-mode

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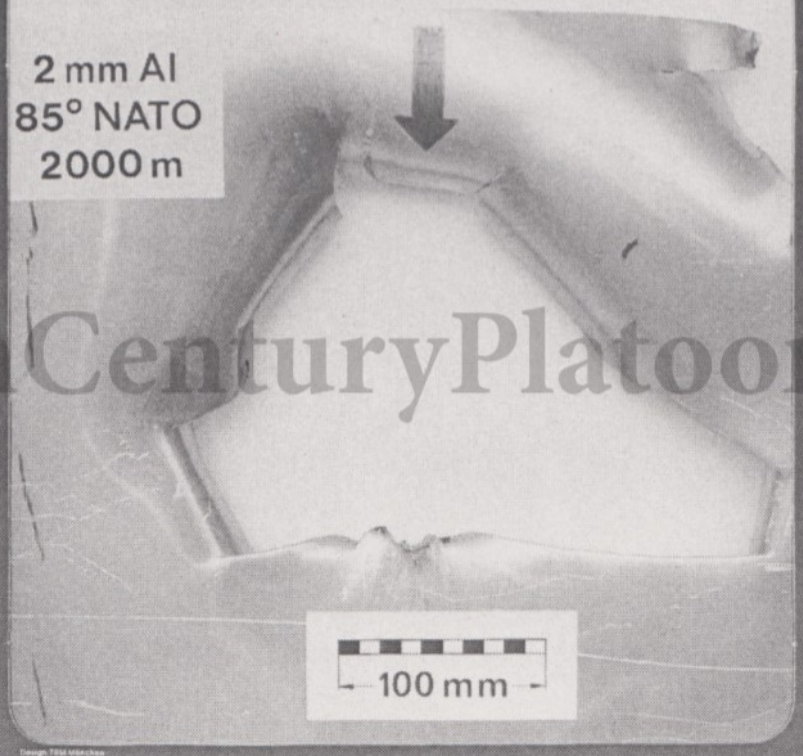

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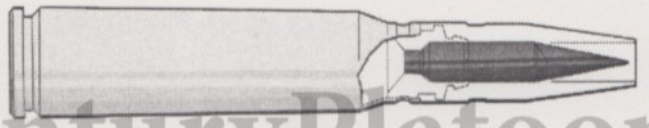
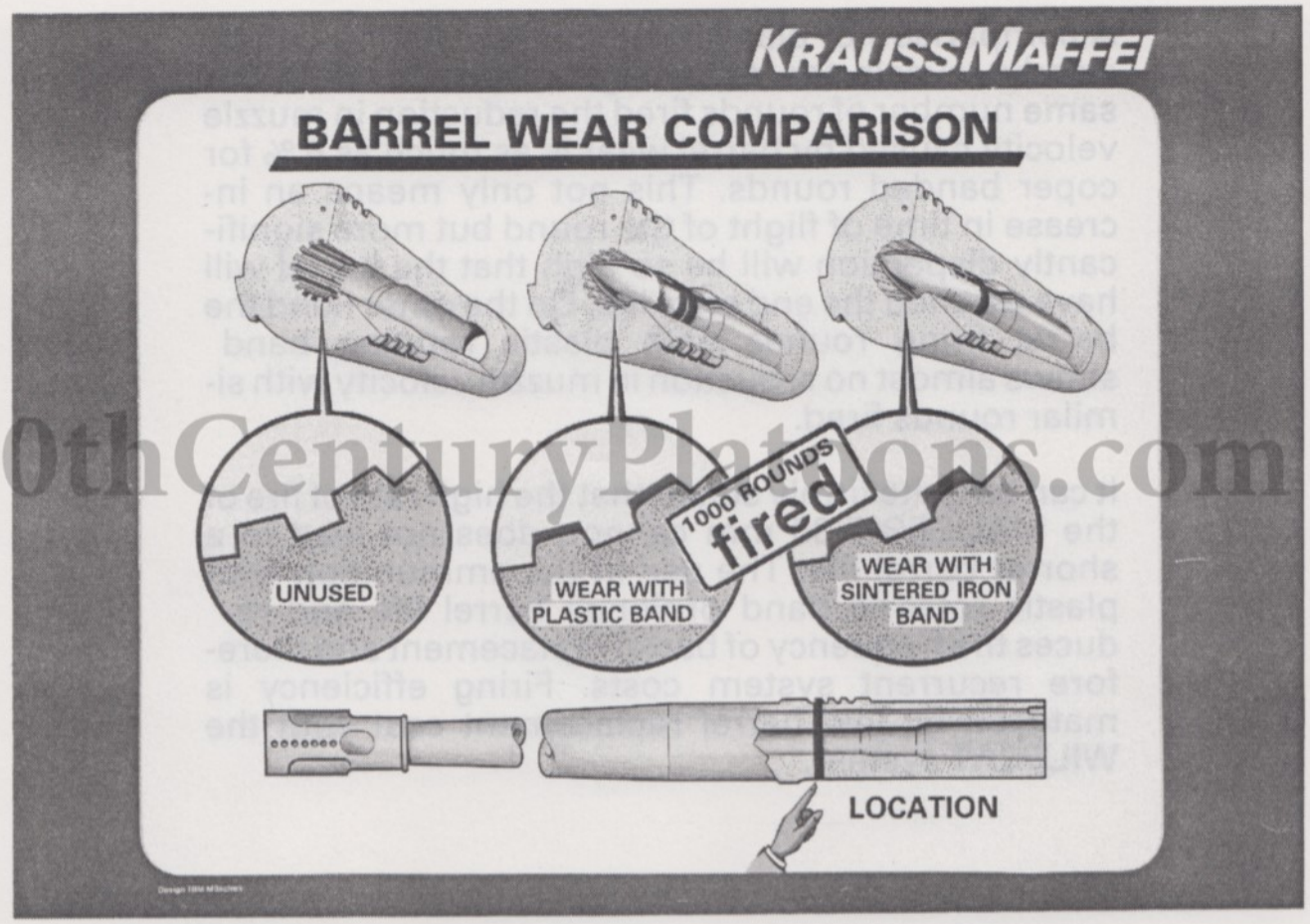
APDS - T



• Round length	259 mm
• Round weight	707 gm
• Projectile weight	252 gm
• Penetrator weight	184 gm
• Muzzle velocity	1250 m/sec
• Time of flight	1.87 sec to 2 km

For use against armoured ground vehicles or armoured combat helicpoters, there will be an Armour Piercing Incendiary round which uses a penetrator from depleted uranium or an Armour Piercing Discarding Sabbot (APDS) using a tungsten penetrator. **WILDCAT's** ground defence role is thereby achieved.



The second decisive factor of expensive long-term cost of an anti-aircraft system can be replacing of worn barrels, especially if they have a high rate of fire. Independant of the caliber being used, barrel wear occurs towards the rear of a barrel, close to the breech. Wear is caused by friction between the driving band and the barrel rifling and also by the escape of gas from behind the shell through the seal made by the driving band. This picture shows barrel wear after approx. 1000 rounds have been fired in a servere rythm. The barrel to the right which has fired rounds with sintered iron rotating band is extensively worn and is effectively at the end of his life. In contrast the barrel in the middle which has fired rounds with a plastic rotating band shows only slight signs of wear. The ridges and grooves of the rifling are only slightly rounded in comparison with the original barrel.

A comparison of plastic and copper rotating bands, clearly reveals the advantage of plastic. With the same number of rounds fired the reduction in muzzle velocity caused by barrel wear is as much as 6 % for coper banded rounds. This not only means an increase in time of flight of the round but more significantly dispersion will be so high that the barrel will have reached the end of its life. On the other hand the barrel firing rounds with plastic rotating band shows almost no reduction in muzzle velocity with similar rounds fired.

It can be quite firmly stated that the high rate of fire of the MAUSER F-30 mm cannon does not lead to a shorter barrel life. The use of the ammunition with plastic rotating band prolongs barrel life and reduces the frequency of barrel replacement and therefore recurrent system costs. Firing efficiency is matched by low barrel replacement cost with the **WILDCAT** system.

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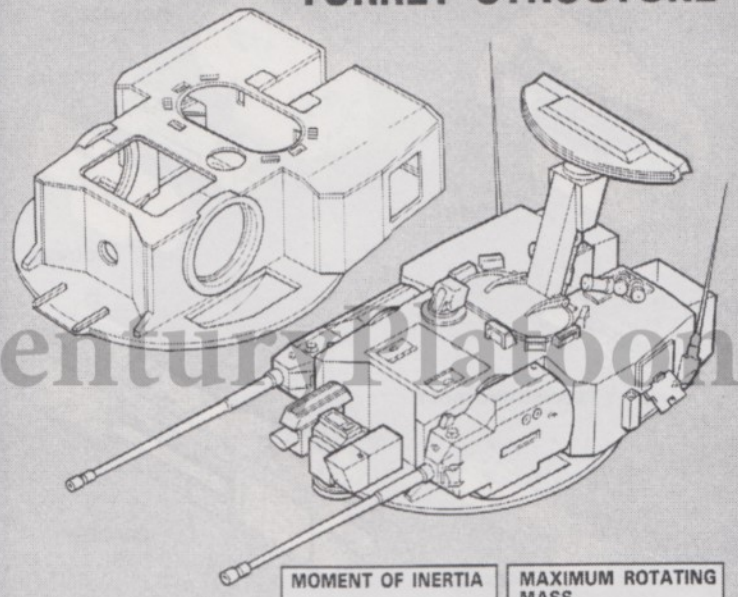
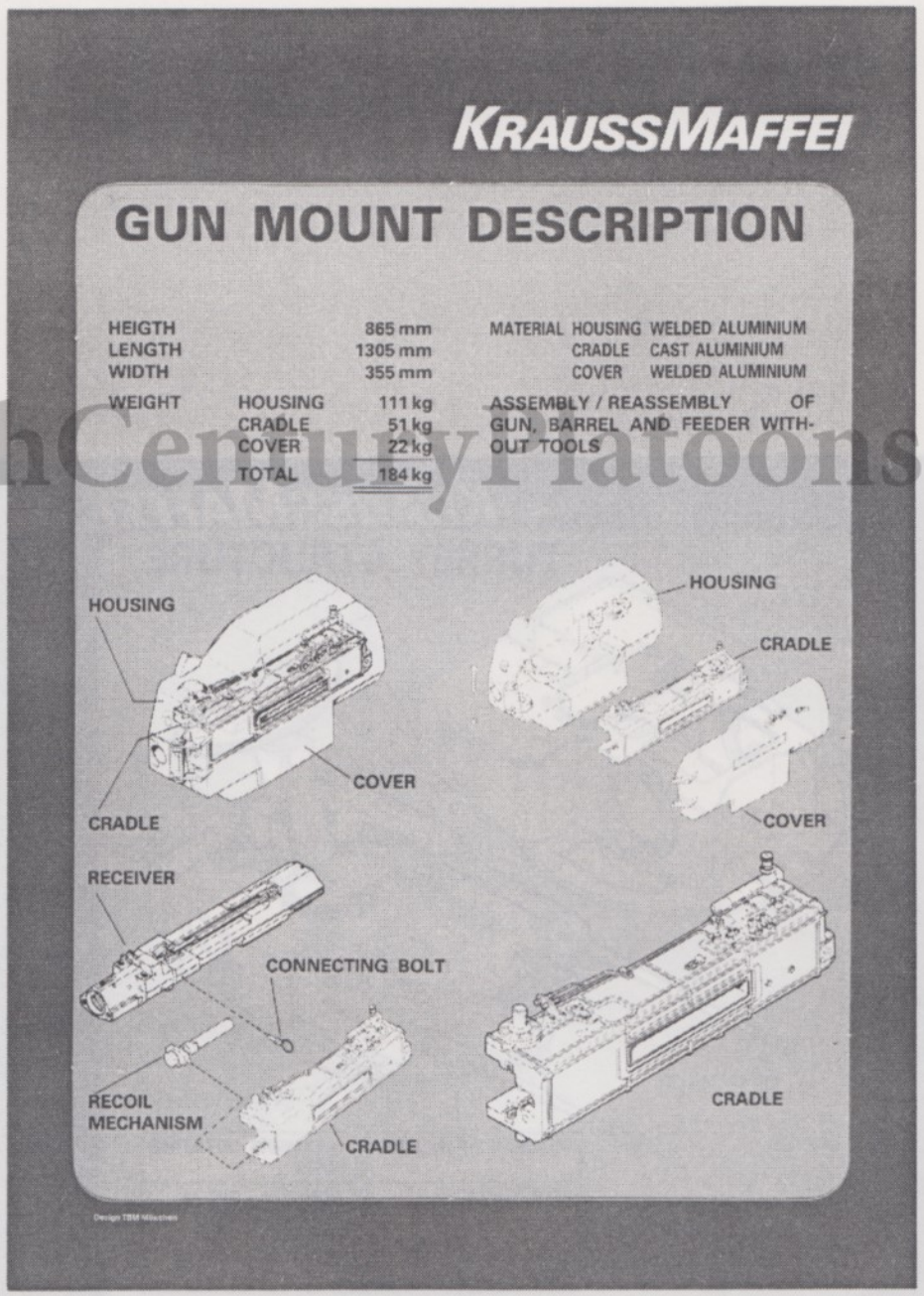
TURRET STRUCTURE



MOMENT OF INERTIA	MAXIMUM ROTATING MASS
AZIMUTH: 6000 kgm^2 ELEVATION: 420 kgm^2 BOTH WEAPONS	AZIMUTH: ~ 5000 kg (TURRET COMBAT LOADED) ELEVATION: ~ 654 kg

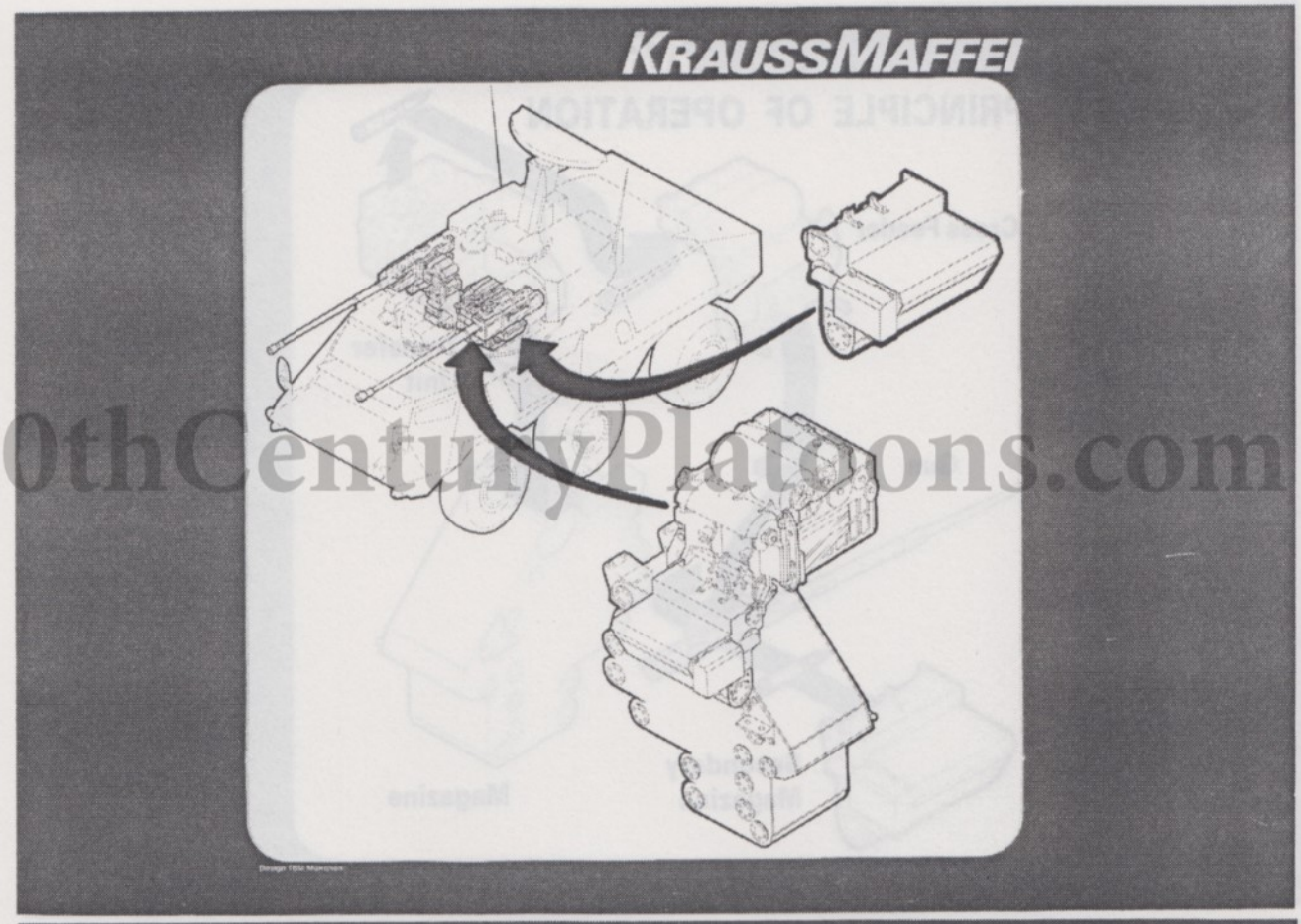
Design TBM München

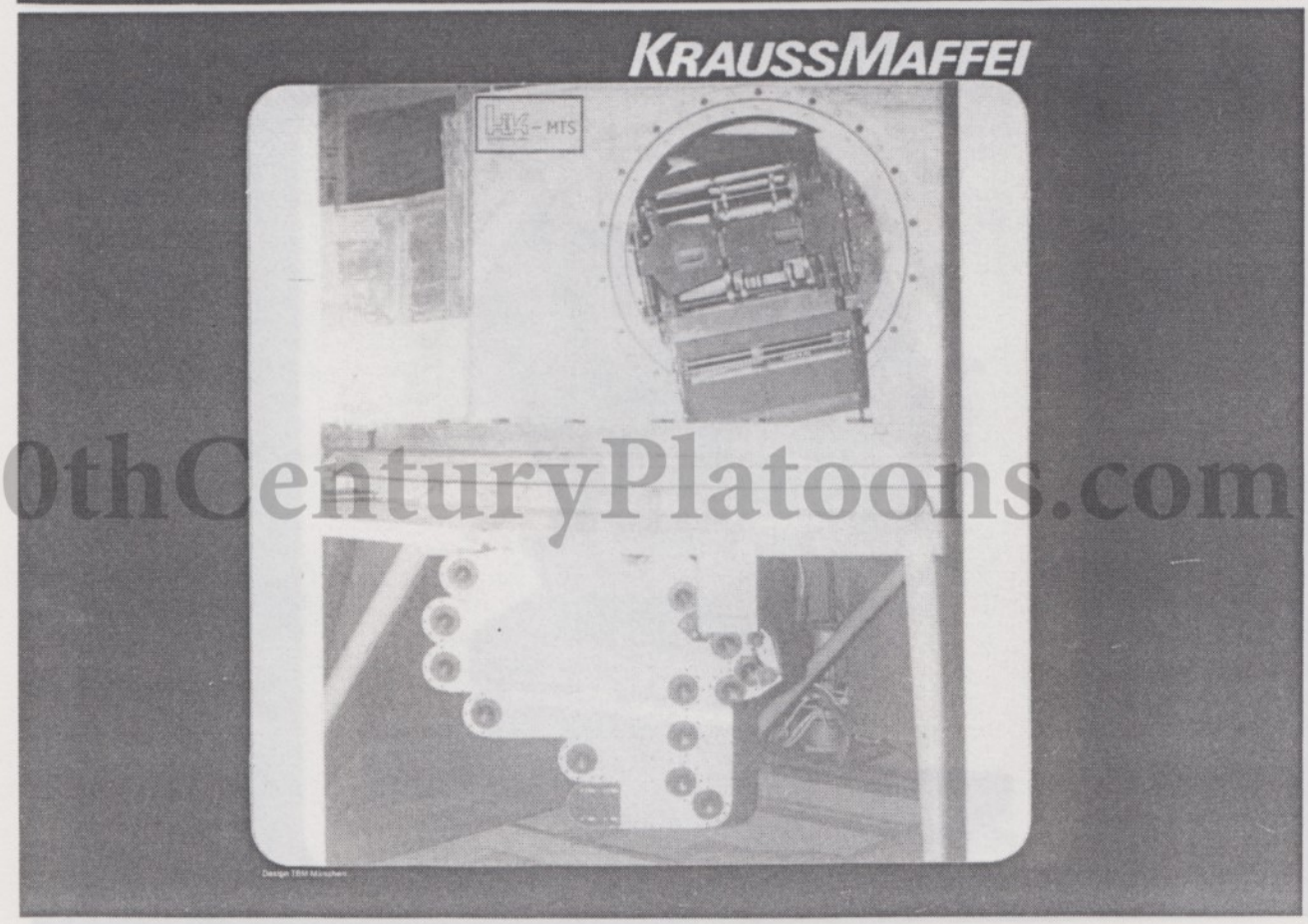


GUN MOUNT

Besides the main components like Acquisition radar, Fire control equipment the turret accommodates the gun mount also.

The guns are cradle mounted in the gun housing which are installed externally on the turret shell. The elevation angles are -5^{o} up to +85^{o}.





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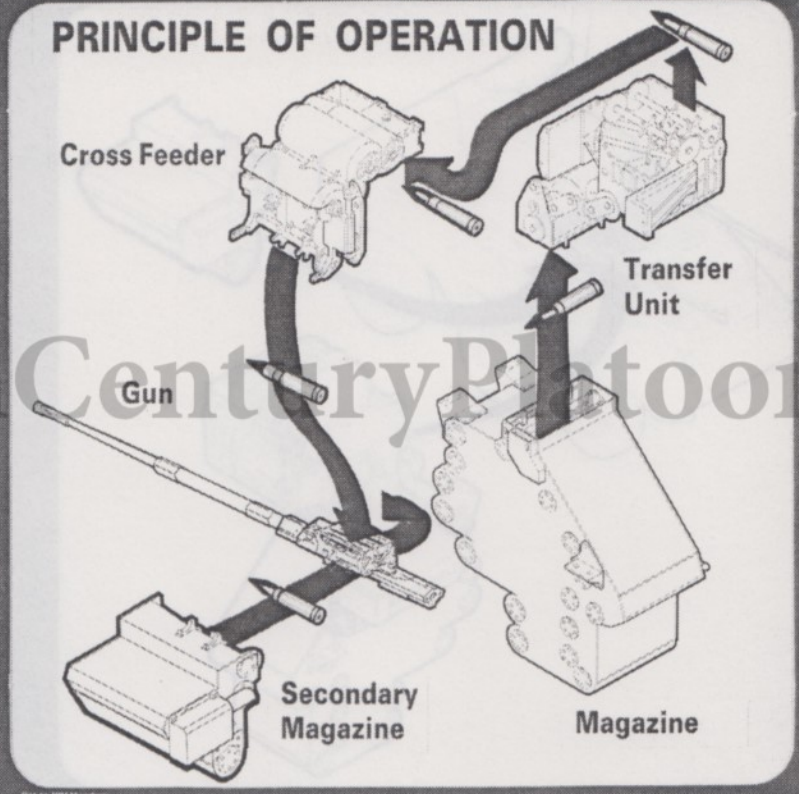
PRINCIPLE OF OPERATION



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LINKLESS AMMUNITION FEED SYSTEM

The **WILDCAT** ammunition feed system consists of a left and right subsystem which is mirror symetric.

EACH of the subsystems comprises:

- Cross feeder
- Transfer unit
- Secundary-magazine (APDS)
- Magazine (HEI/SD)
- Control electronic
- Hydraulic

The flow of HEI/SD ammunition starts from the magazine through transfer unit, cross feeder into the double feeder of the gun.

The APDS-ammunition will be feeded directly into the double feeder.

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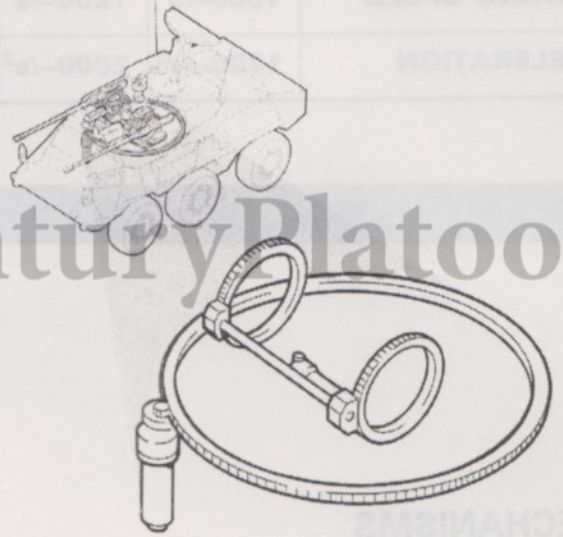
TURRET / WEAPON DRIVE



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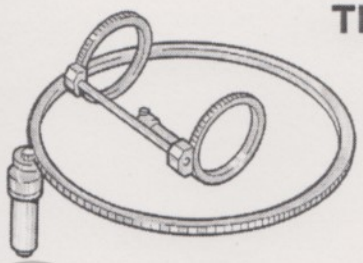
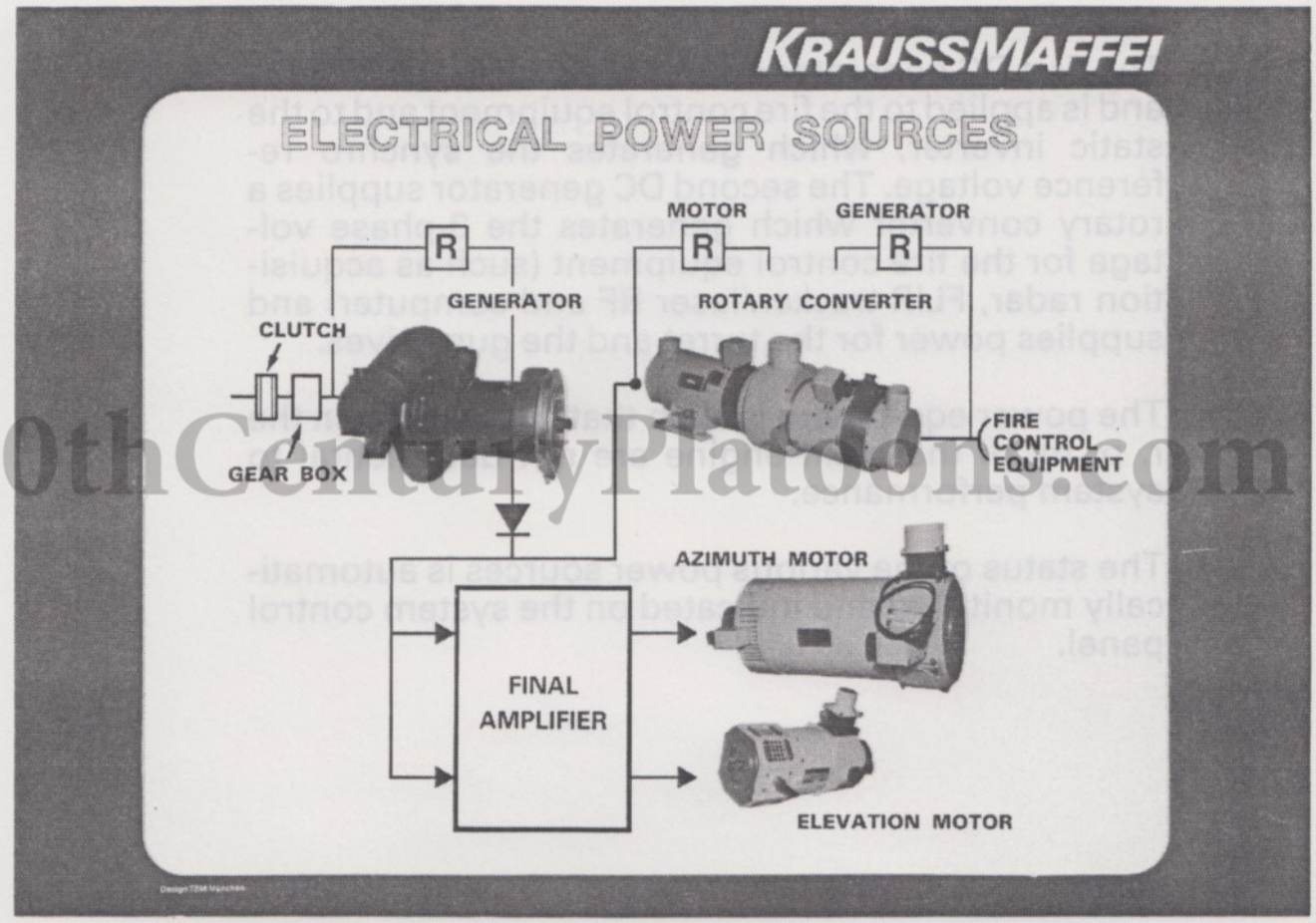
TECHNICAL DATA



	AZIMUTH	ELEVATION
DRIVE 110 V DC	27.5 kW	10 kW
SLEEWING SPEED	1600–/s	1200–/s
ACCELERATION	1200–/s^2	2000–/s^2

SERVO-MECHANISMS

Four servo-mechanism systems are used throughout the WILDCAT vehicle. The turret and weapon drive, the director, and periscope system, are synchrotype electro-mechanical systems. The fourth servo system, the ammunition transport system, is of the electro-hydraulic type. All four of these servo systems are based on mature designs which have been operationally demonstrated.



ELECTRICAL POWER SOURCES

The Electrical Power Unit (EPU) provides all power necessary for the fire control equipment and its accessories. It is mounted in the engine compartment. The main EPU generator assembly consists of two separate generators mounted on a common shaft driven through the hydraulically operated clutch and the constant-ratio gearbox. The gearbox adjusts the revolutions of the generators so that the fire control equipment can function properly when the engine is idling. A rotary converter, a static inverter and relay boxes are mounted at various locations throughout the vehicle. The main engine generator is also part of the power supply equipment, and can be used as back-up power for the 28 V DC stabilizer circuit, if necessary.

The first DC generator output is stabilized at 28 V DC and is applied to the fire control equipment and to the static inverter, which generates the synchro reference voltage. The second DC generator supplies a rotary converter which generates the 3-phase voltage for the fire control equipment (such as acquisition radar, FLIR tracker/laser RF and computer) and supplies power for the turret and the gun drives.

The power equipment is such that fluctuations in the r. p. m. of the main engine are not detrimental to system performance.

The status of the various power sources is automatically monitored and indicated on the system control panel.

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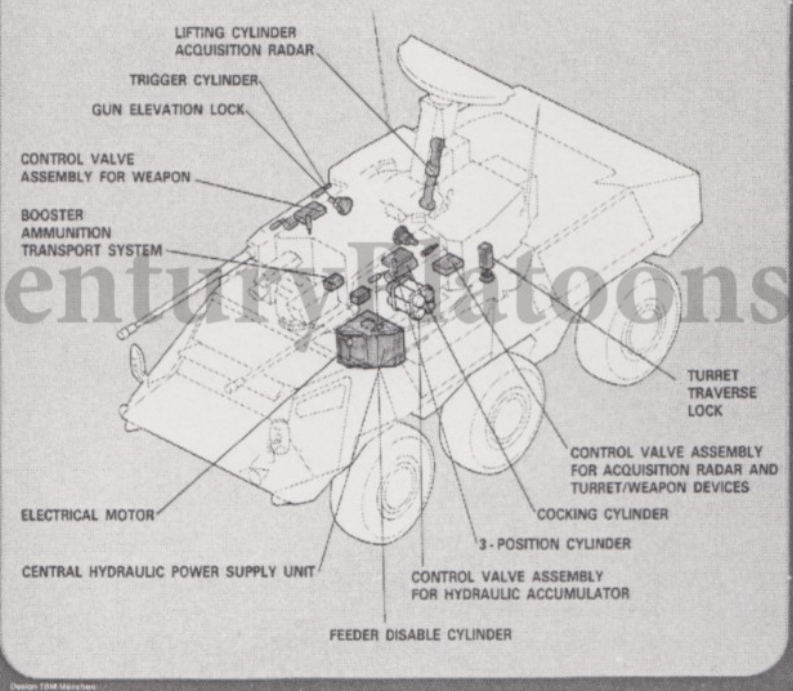
HYDRAULIC OPERATING SYSTEM



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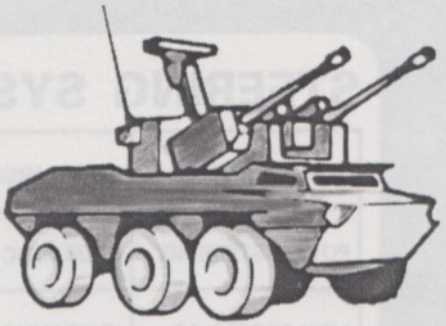

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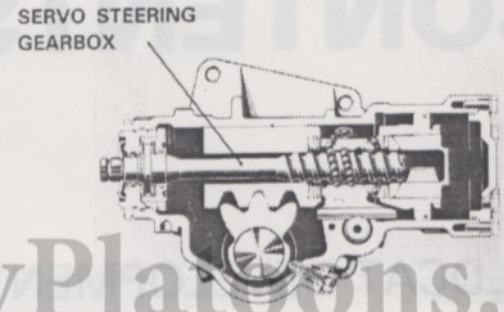
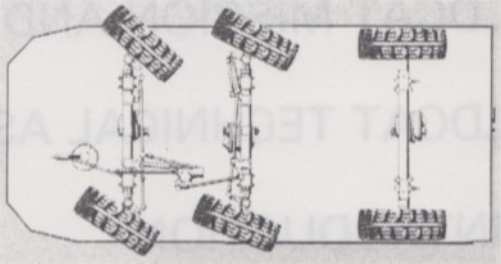
STEERING SYSTEM

PARAMETERS	FEATURES
POWER STEERING	HYDRAULIC ASSISTED
LOW FORCES AT STEERING WHEELS SHOCK FREE STEERING	HYDRAULIC ASSISTED
AXLES STEERING	FRONT AND CENTER AXLE STEERING
TURNING ANGLE	42°
TURNING CIRCLE	17 m



DRIVES 1 st and 2 nd AXLE



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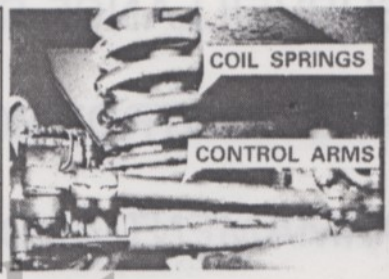
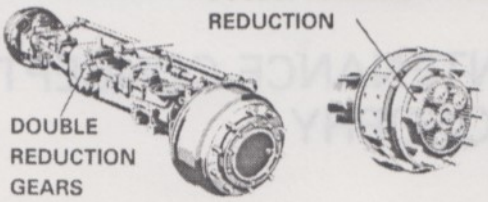
RUNNING GEARS

PARAMETERS	FEATURES
AXLE SPRING TRAVEL	290 mm BY MEANS OF PROGRESSIVELY ACTING COIL SPRINGS
AXLE CONTROL	EXACT CONTROL BY CONTROL ARMS



AXLES

GROUND CLEARANCE	DOUBLE AXLE REDUCTION IN THE CENTER PORTION OF THE AXLE DOUBLE PLANETARY RE-DUCTION IN THE WHEEL HUB. BOTH TOGETHER PROVIDE LARGE GROUND CLEARANCE



TIRES

SIZE TYPE RUN FLAT/RADIAL PLY 14.00 x 20

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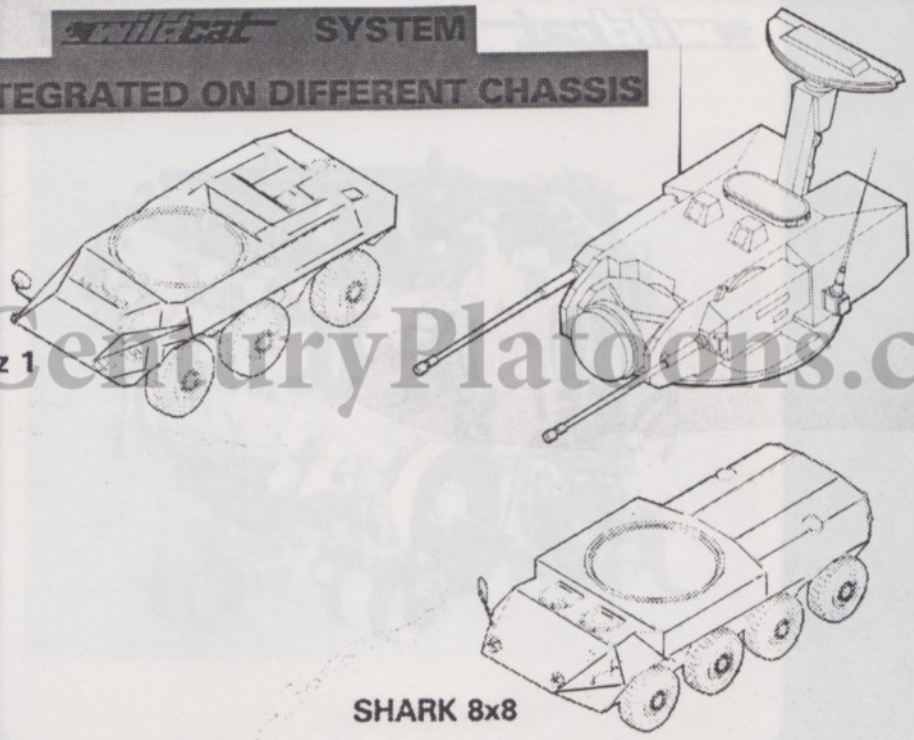
wildcat SYSTEM

INTEGRATED ON DIFFERENT CHASSIS



TPz 1

SHARK 8x8

Design TBM München

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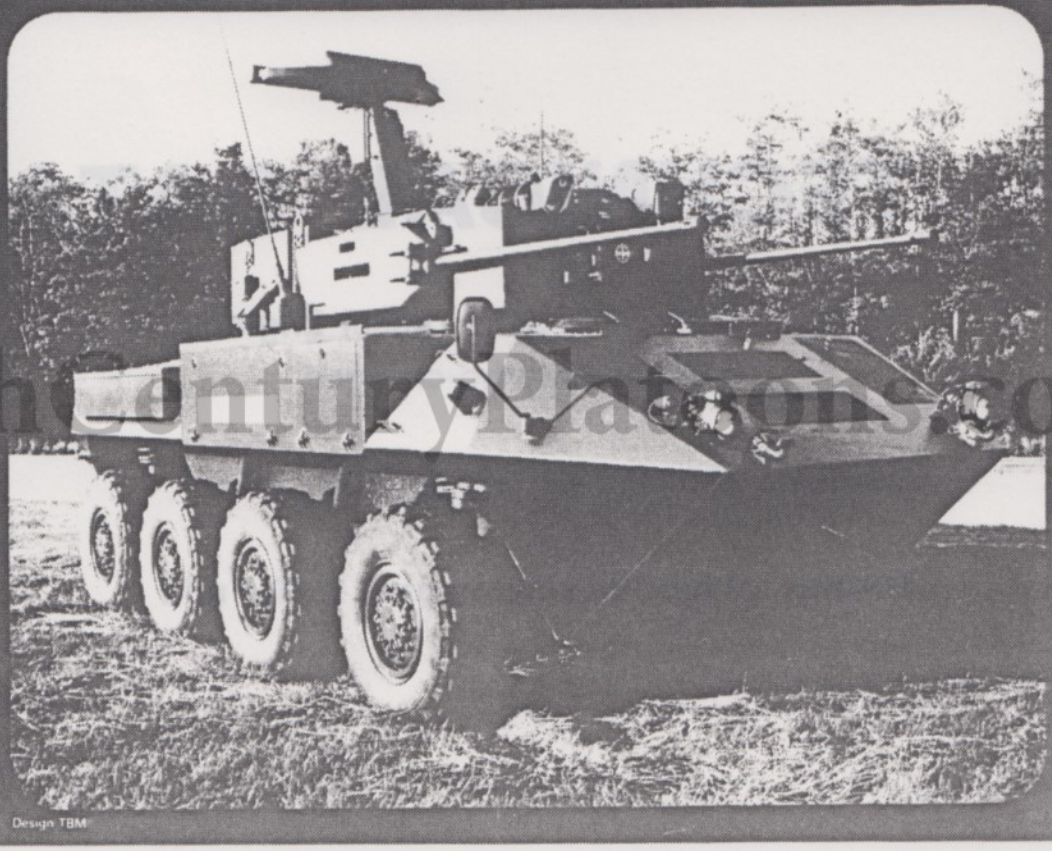

Design TBM

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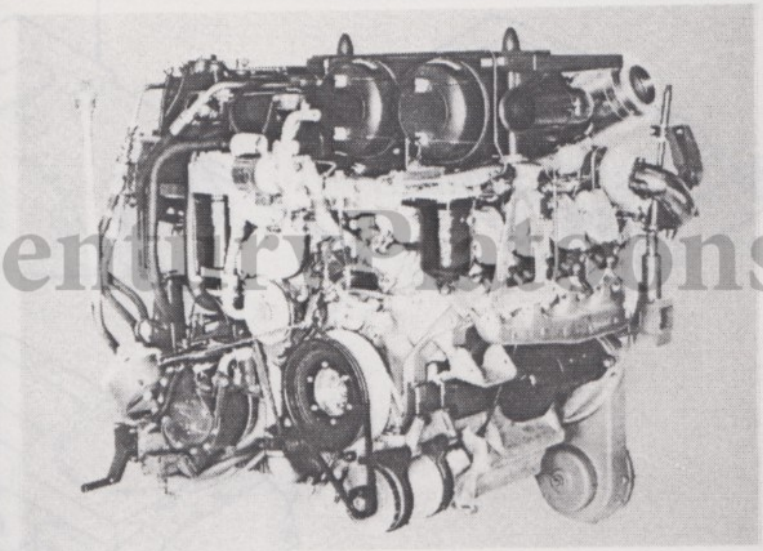
wildcat POWER PLANT



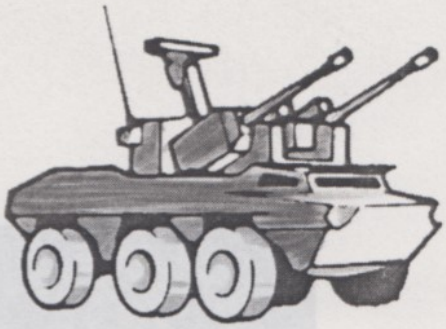
TECHNICAL DATA

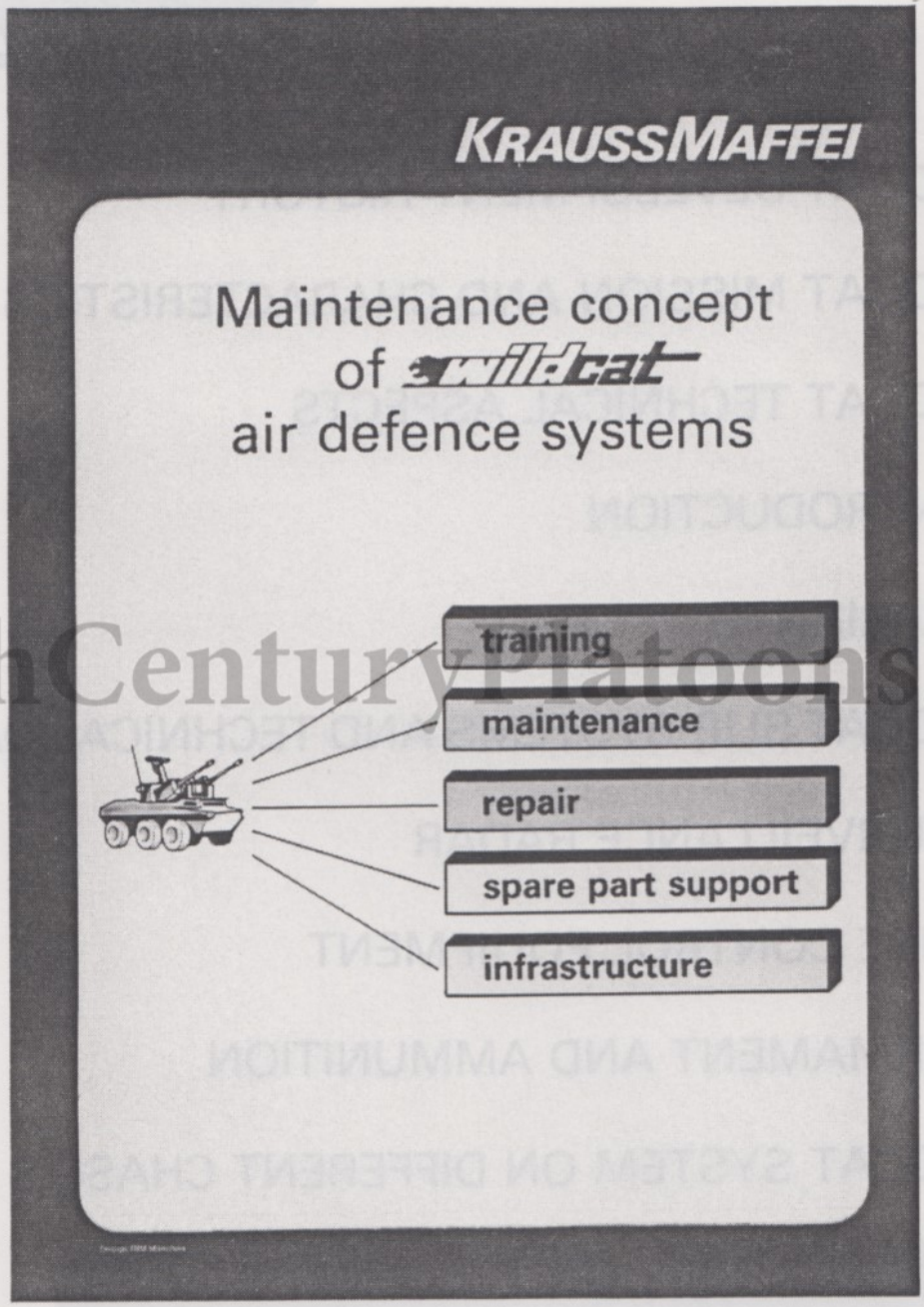
Engine: Mercedes Benz Diesel Engine OM 402 A
8 Cylinder turbo-charged

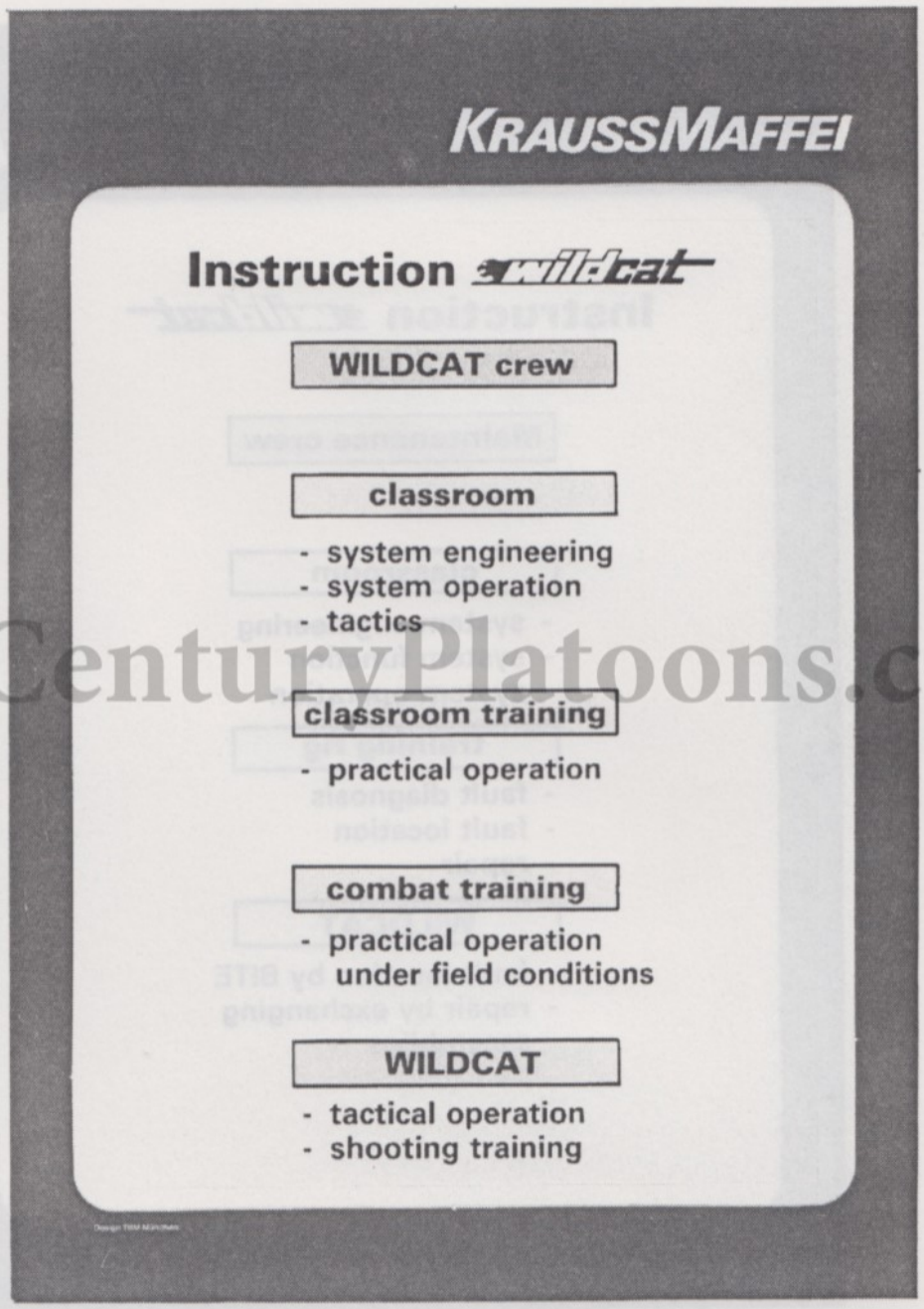
Output: 235 kW (320 HP) at 2500 / min

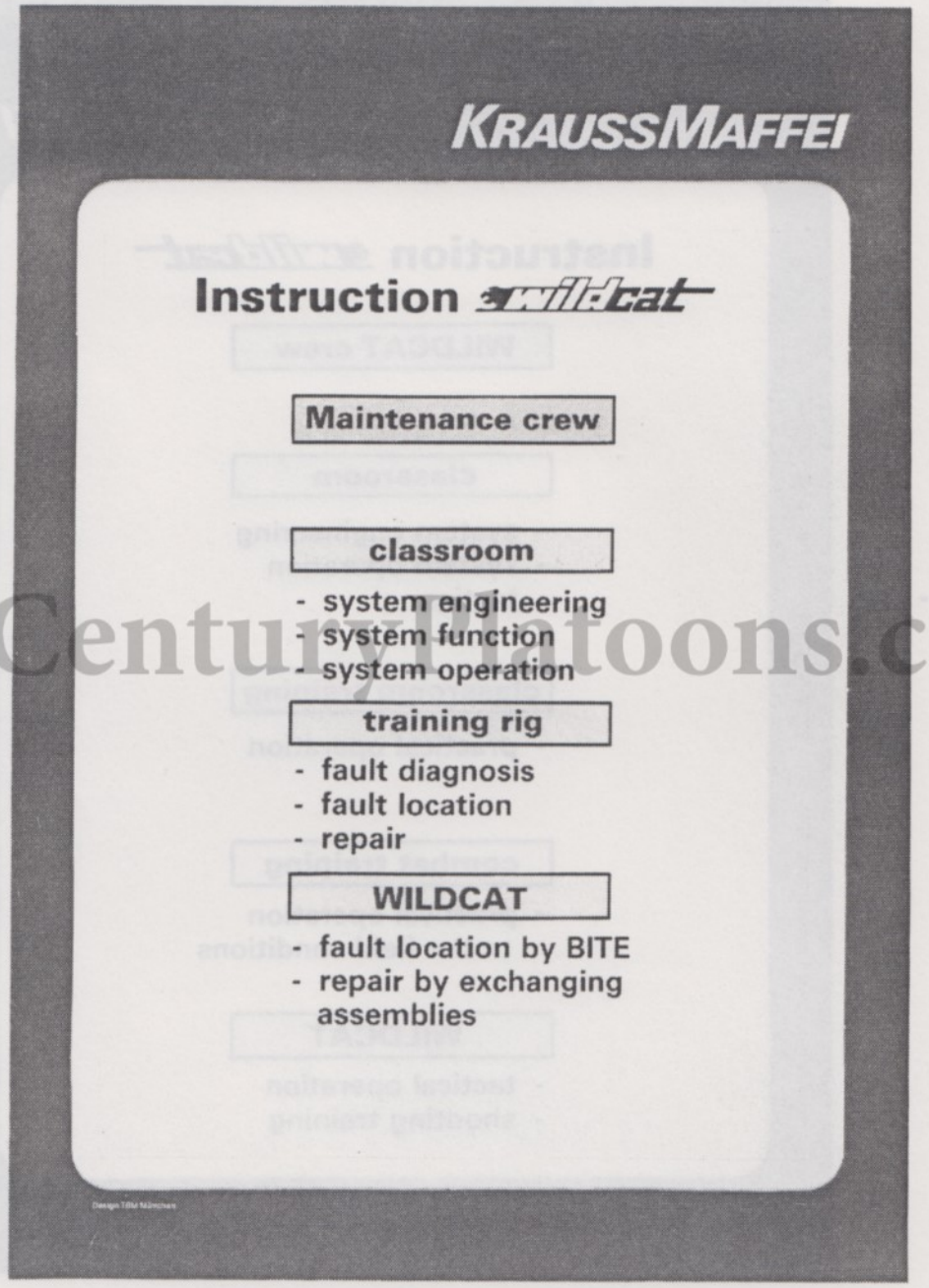
Torque: 1128 Nm (115 mkp) at 1500 / min

CONTENTS

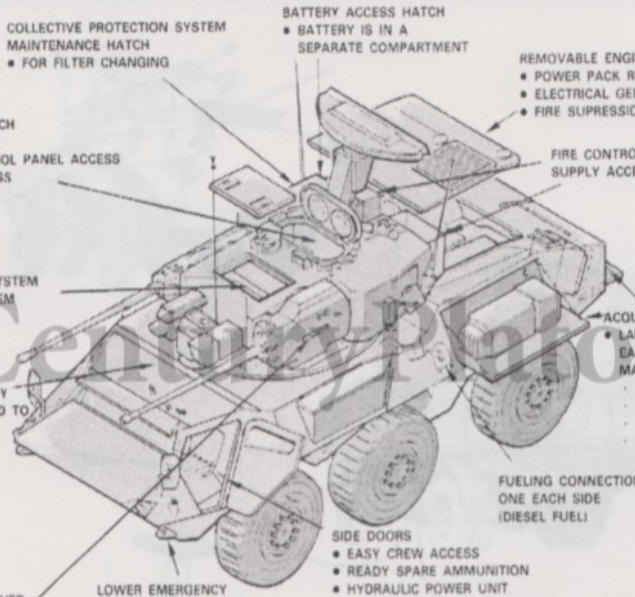








SIMPLE MAINTAINABILITY



COLLECTIVE PROTECTION SYSTEM MAINTENANCE HATCH
• FOR FILTER CHANGING

BATTERY ACCESS HATCH
• BATTERY IS IN A SEPARATE COMPARTMENT

REMOVABLE ENGINE ACCESS HATCH
• POWER PACK REPLACEMENT
• ELECTRICAL GENERATING EQUIPMENT
• FIRE SUPRESSION SYSTEM

MAIN TURRET HATCH
• CREW ACCESS
• DISPLAY / CONTROL PANEL ACCESS
• SLIP RING ACCESS

FIRE CONTROL COMPUTER AND POWER SUPPLY ACCESS AT REAR OF TURRET

MAINTENANCE HATCH
• AMMUNITION FEED SYSTEM
• WEAPON DRIVE SYSTEM

ACQUISITION RADAR ACCESS
• LARGE ACCESS DOOR ALLOW EASY ACCESSABILITY AND MAJOR MODULE REMOVAL FOR
- TRANSMITTER/RECEIVERS
- AIR COMPRESSOR
- COOLING UNIT
- HIGH VOLTAGE POWER SUPPLIES

INTERNAL TURRET TO VEHICLE HATCH
• ACCESS IS POSSIBLE ONLY WHEN TURRET IS TRAINED TO ZERO AZIMUTH

FUELING CONNECTION ONE EACH SIDE (DIESEL FUEL)

SIDE DOORS
• EASY CREW ACCESS
• READY SPARE AMMUNITION
• HYDRAULIC POWER UNIT
• PPI CONTROL UNIT
• AUXILIARY ELECTRICAL DISTRIBUTION
• WEAPON DRIVE POWER OUTPUT STAGE
• WEPON CONTROL UNIT

GUN MAINTENANCE COVER
• PROVIDE EASY ACCESS TO GUN COMPONENTS

LOWER EMERGENCY ESCAPE HATCH
• CREW EXIT THROUGH VEHICLE FLOOR

NOTE: ALL HATCHES AND DOORS ARE SEALED WITH SPRAY TIGHT GASKETS

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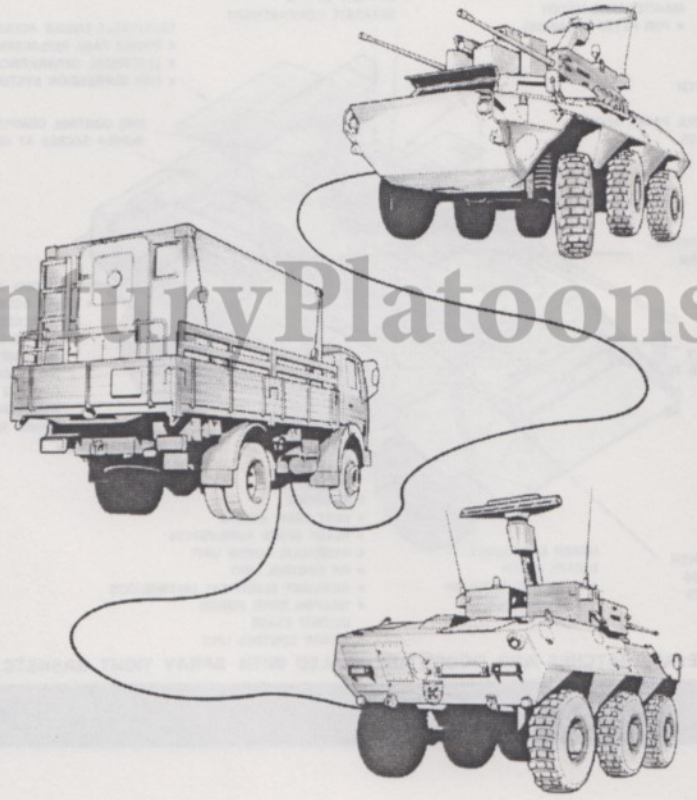
COMBAT TRAINING



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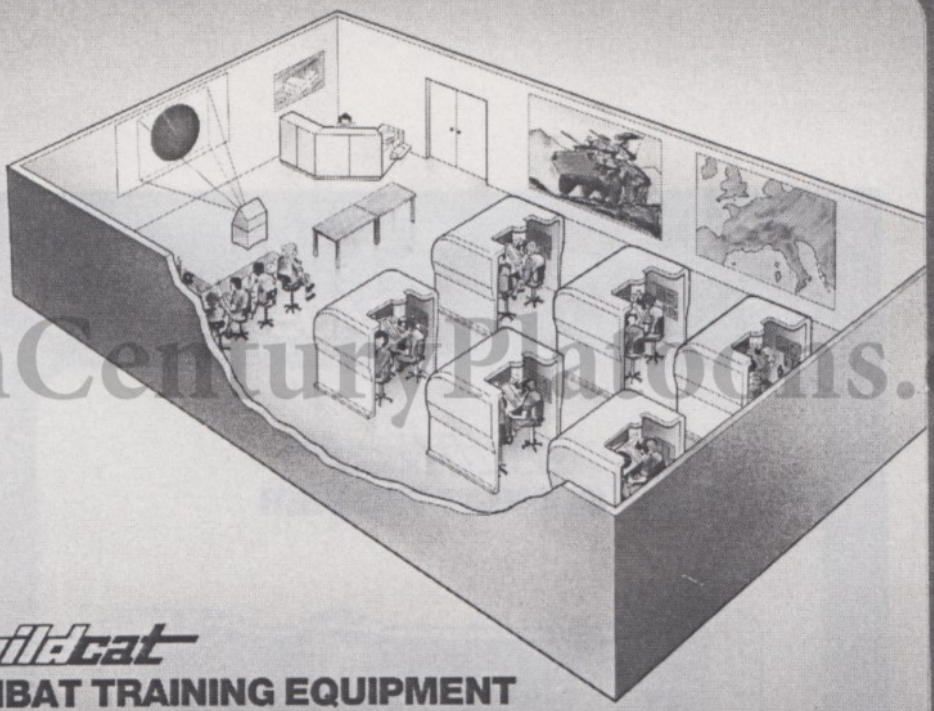

wildcat
COMBAT TRAINING EQUIPMENT

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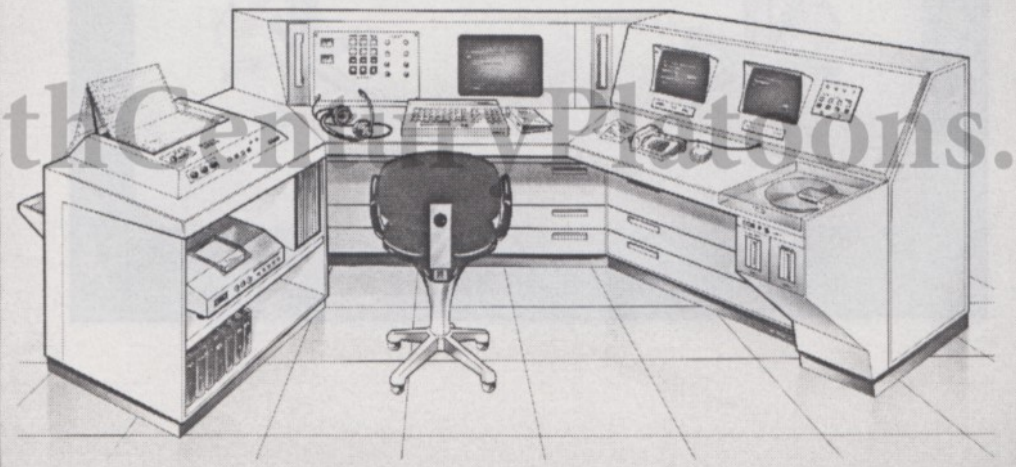
wildcat
INSTRUCTOR STATION



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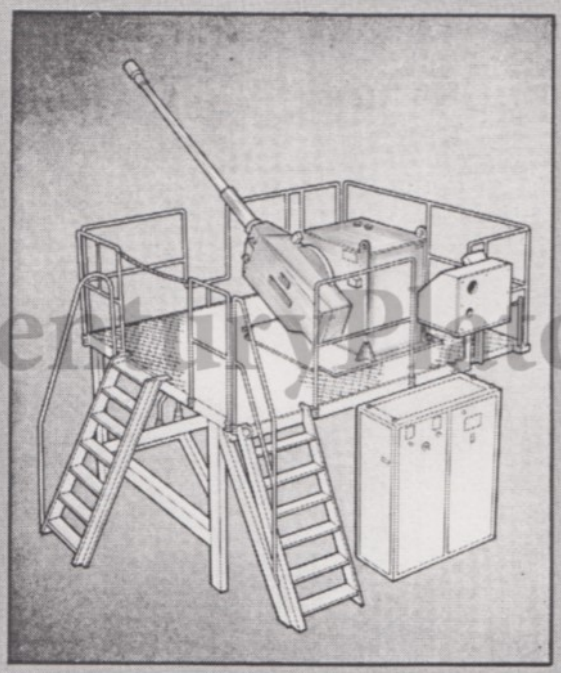
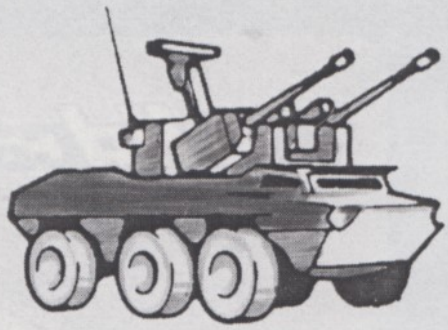
Maintenance Training

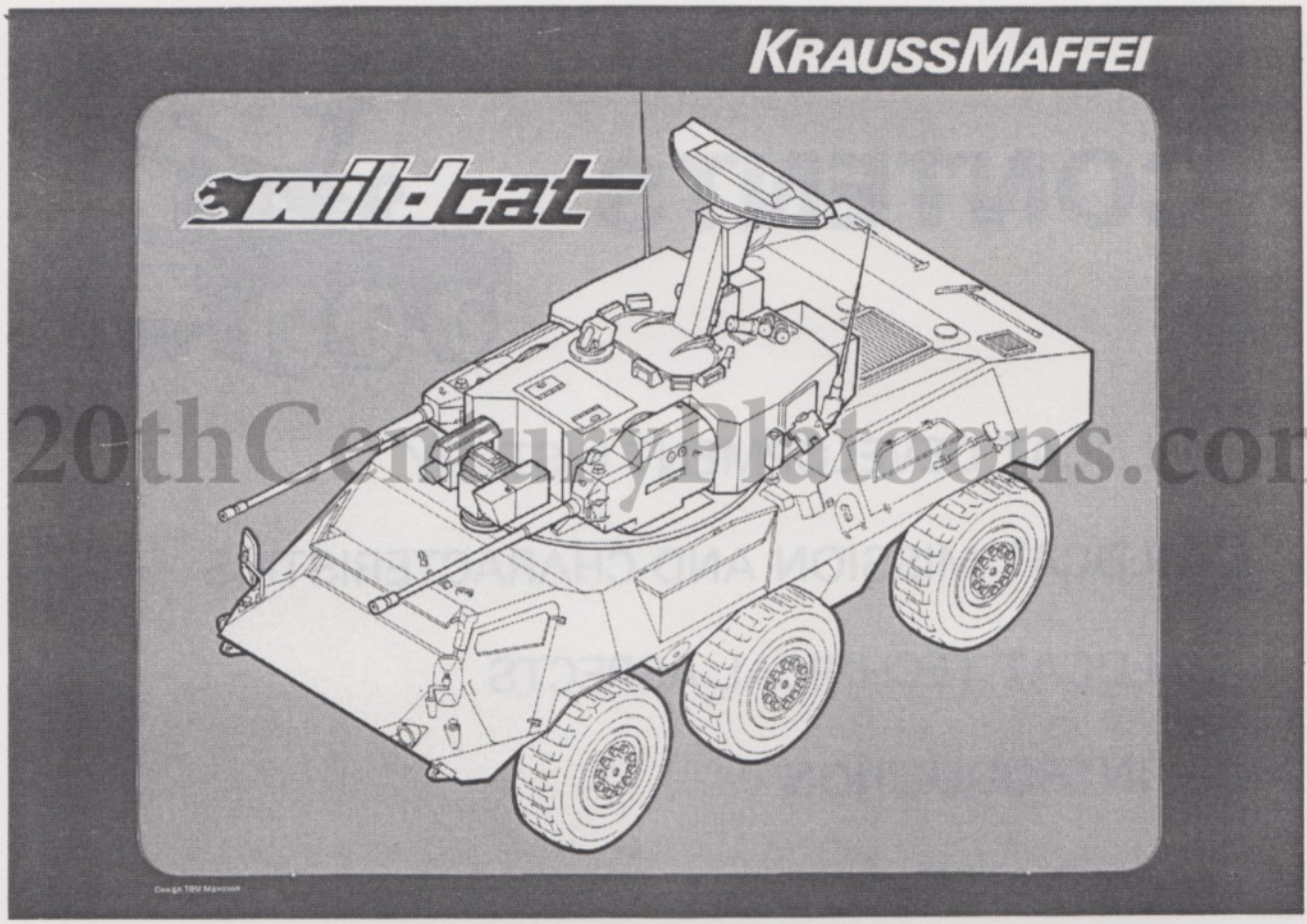


Weapon repair rig

consisting of - the weapon
- the hydraulics
- the control electronics

CONTENTS





WILDCAT is a leightweight highly mobile wheeled vehicle. Its mobility means that enemy reconnaissance cannot pin-point its position and therefore planning an air attack or an airborne assault on the airfield is made much more difficult. Pre-planned raids on air defence are impossible when the air defence system is **WILDCAT**. Following a reconnaissance flight, **WILDCAT** can move immediately. It might take an hour or even more to move a towed system to another position!

Against an airborne assault the mobility and fire power of **WILDCAT** are invaluable. It can move quickly to provide firepower support wherever it is needed without the need of high man power and can quickly change from air defence role to ground defence role.

Although traditional air defence systems may have a capability of engaging ground targets, it is doubtful that this capability could be used.

The multi-role capability of **WILDCAT** offers unprecedented flexibility matched with an extraordinarily low-life cycle cost. **WILDCAT** is the finest system recently available for the defence of fast moving mechanised infantry as well as for the defence of airfields against both sophisticated aerial attacks and assaults by airborne troops in combat vehicles.