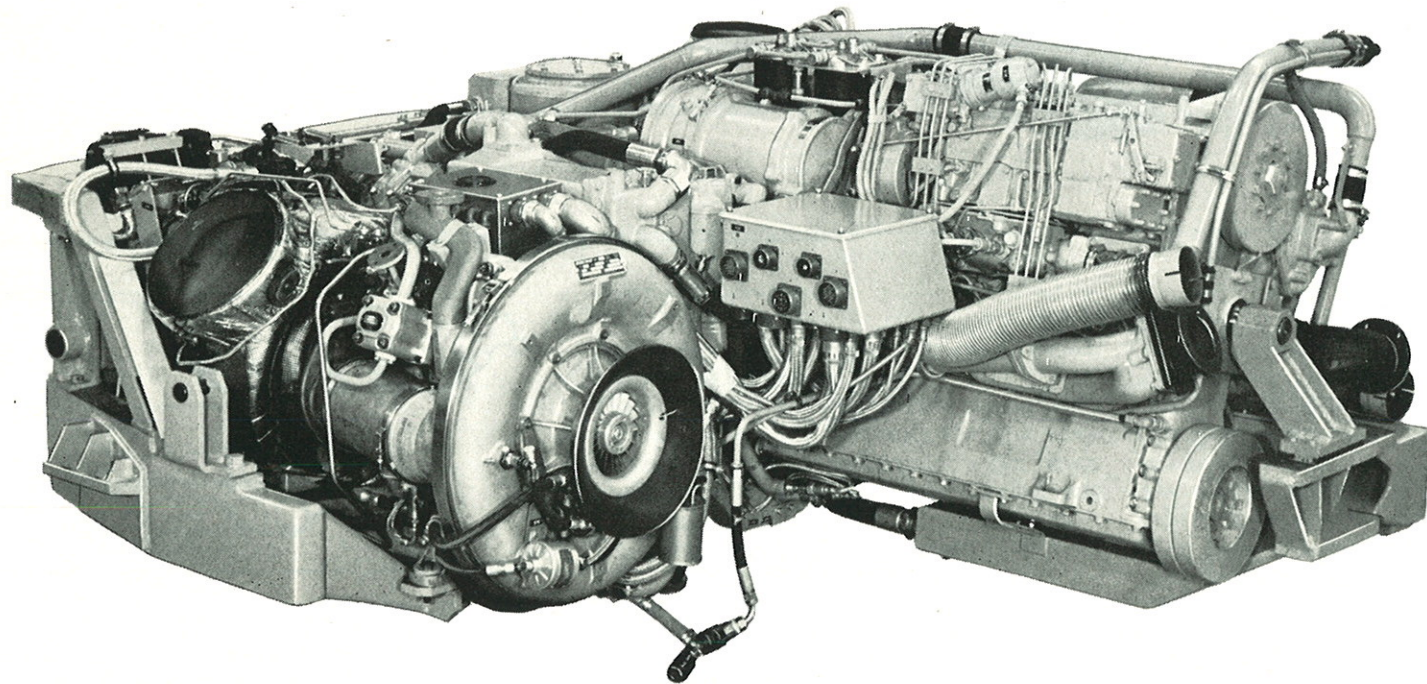


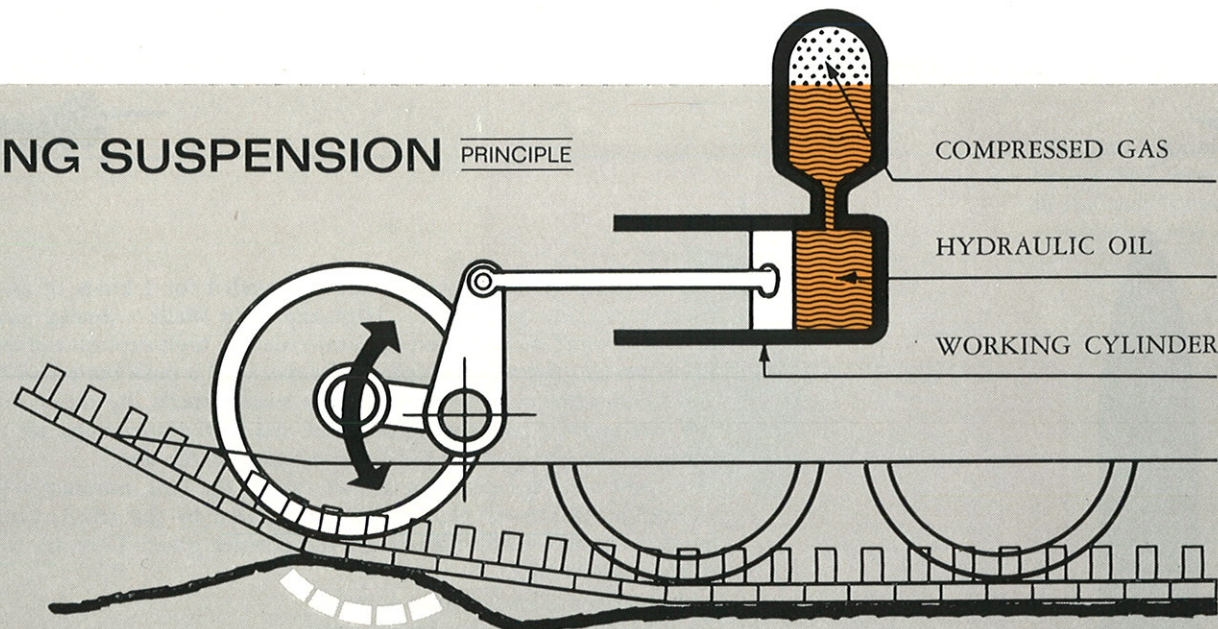
POWER PLANT

GAS TURBINE
 C.I. ENGINE
 TRANSFER GEAR BOX
 LOW/HIGH GEAR BOX
 TORQUE-CONVERTER TRANSMISSION

The power plant with gear boxes are built together into one unit. For major overhauls and repairs, the entire unit can be lifted out of the tank in one operation, and an identical replacement unit can be installed.



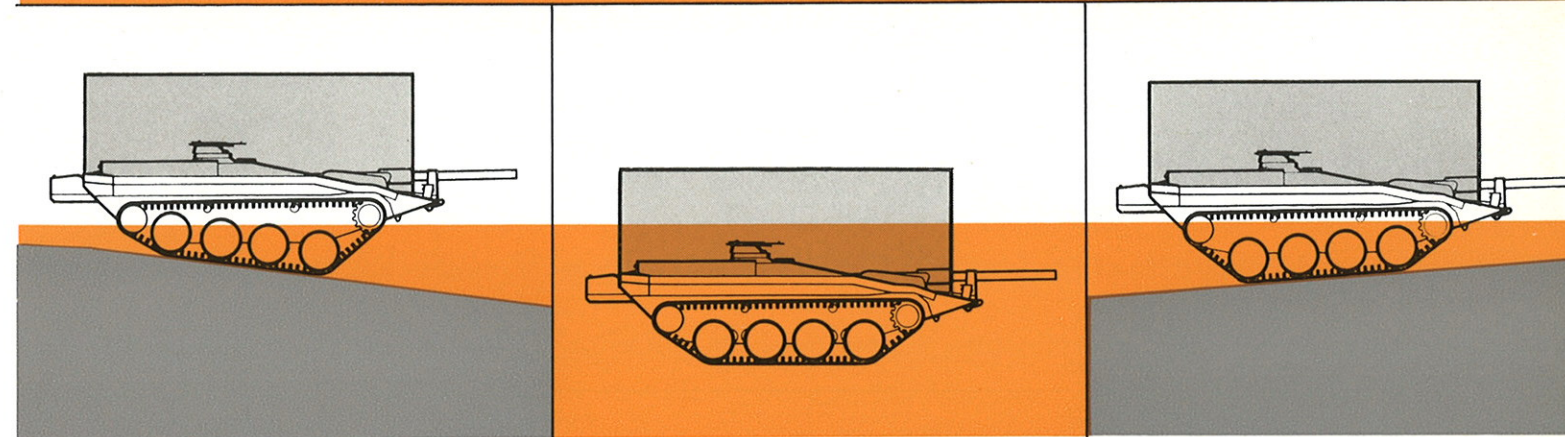
SPRING SUSPENSION PRINCIPLE



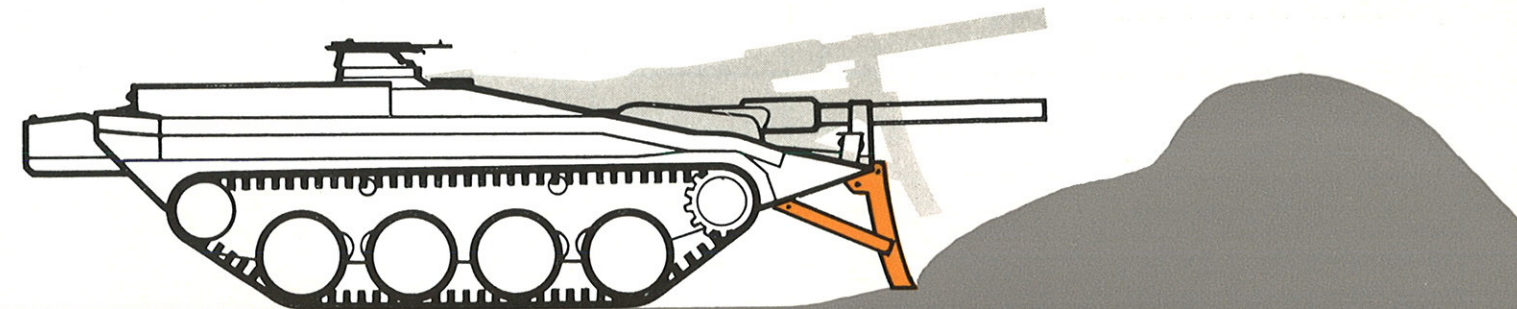
The road wheels have individual, hydro-pneumatic suspension. The oil quantity in the working cylinders for the front and rear road wheels are controlled by the elevating gear.

COLLAPSIBLE SCREEN

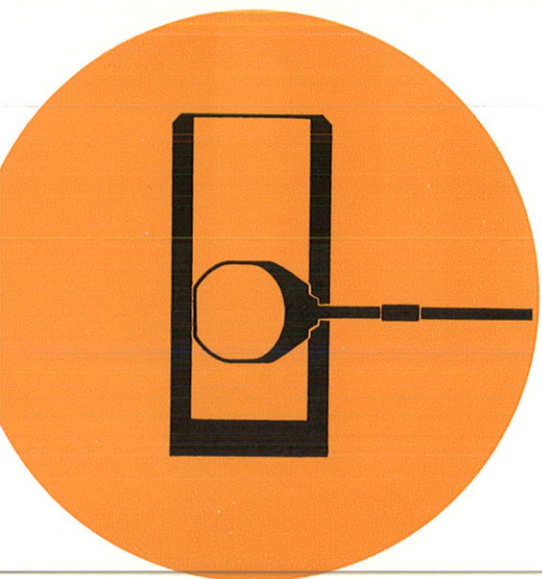
The collapsible screen is carried on the tank, fitted and ready for use, but is kept folded up, and is protected from shell fragments and small-arms fire in a covered trough round the rim of the tank hull. The tank is propelled through water by means of the tracks. Water entry and beaching is facilitated through the use of the elevating gear.



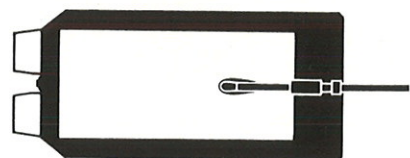
THE TANK IS ITS OWN BULLDOZER.



When equipped with a readily-fitted bulldozer blade, tank S can carry out simple grading work.

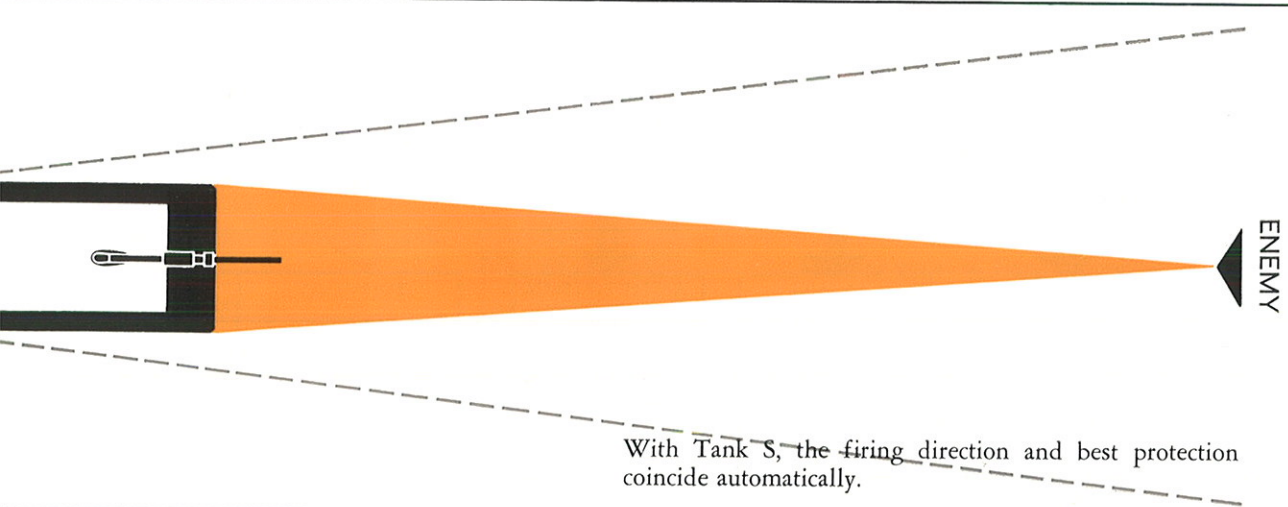
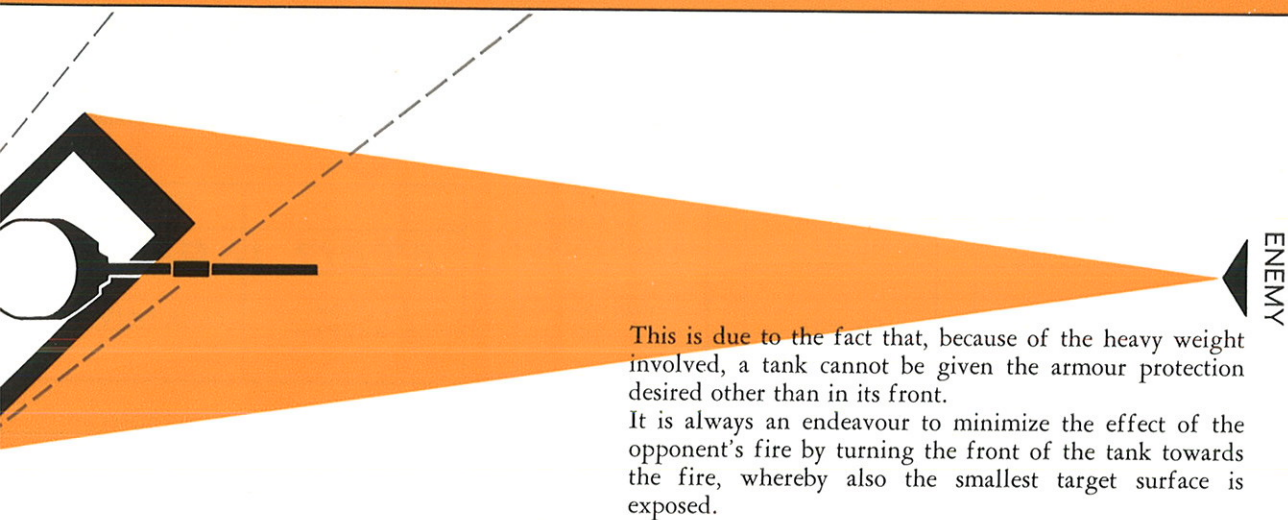


As a rule, a turret tank can fire in all directions in relation to the tank. Thus, in principle, firing is independent of the direction of the gun.



Tank S fires only in the direction which it is facing.

of armour battles show that, after the shortest possible time, all tanks adjust their positions so that firing takes place in which the tank is turned.



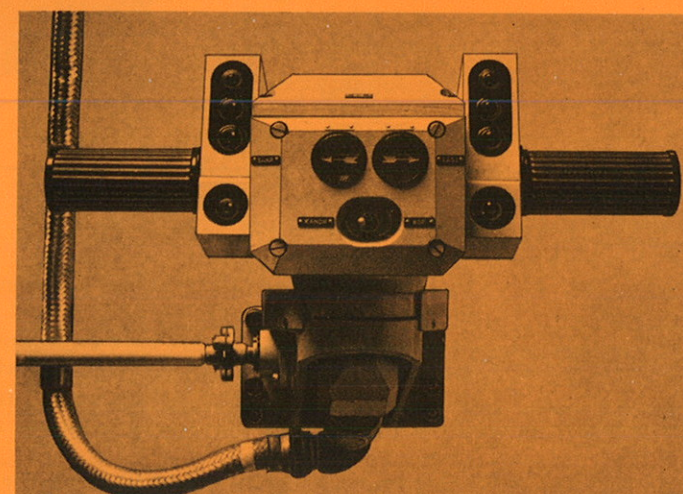
TRAVERSING

WHEN SLEWING ON TARGET

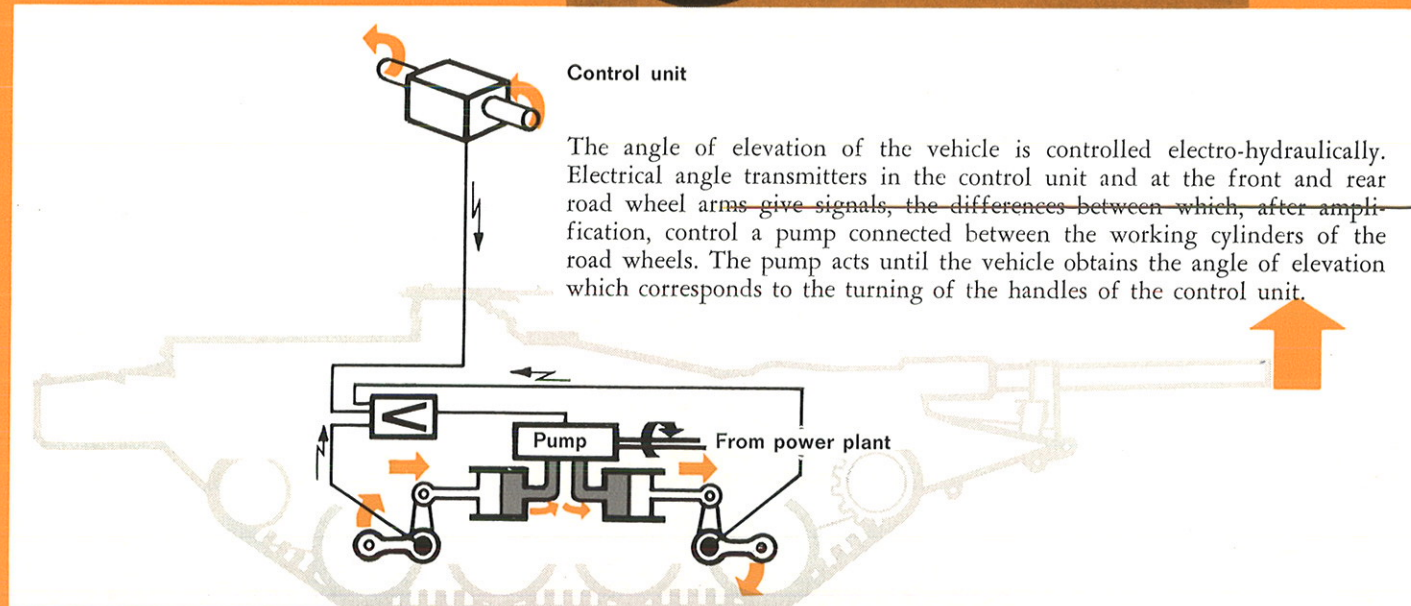
When big traversing movements are required for slewing on targets, the vehicle continues to turn around the braked track as long as the control unit is deflected more than 20°.

WHEN FIRING

The speed F is then zero, and the vehicle is braked. When traversing towards the left, the left track turns in reverse and the right track turns forwards — and vice versa when traversing towards the right. The traversing speed is controlled by the deflection of the speed gear which, in turn, is controlled by the angle to which the control unit is deflected from the neutral position.



ELEVATION



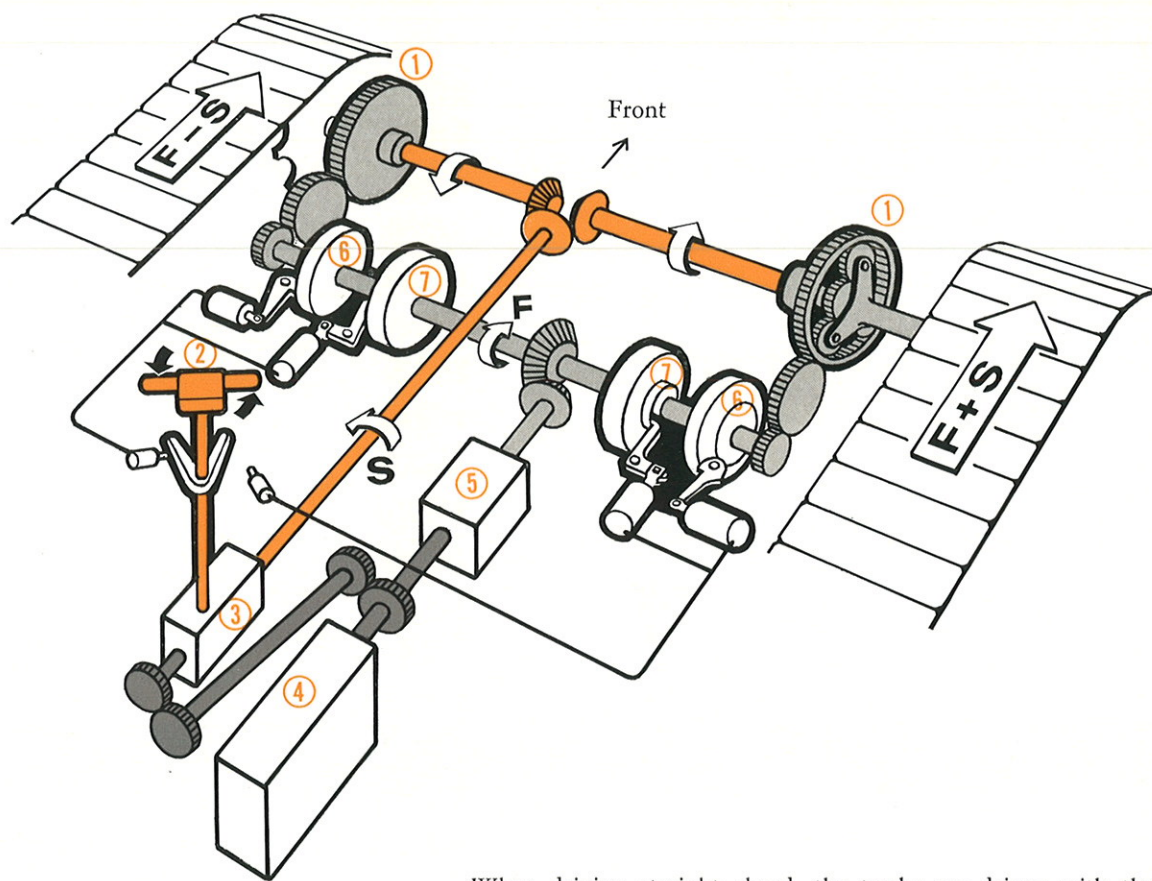
can be made
Tank S requires

be pierced is
is 500 meters

of ammunition:
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shells, or vice
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are carried out

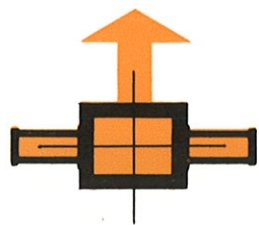
tically, through
Consequently,
re in an ABC-

STEERING DURING NORMAL DRIVING

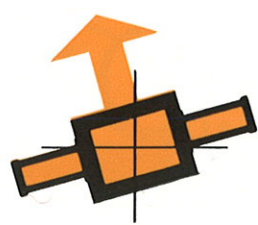


- ① Planetary gear
- ② Control unit
- ③ Speed gear
- ④ Engine
- ⑤ Gear box
- ⑥ Brake
- ⑦ Clutch

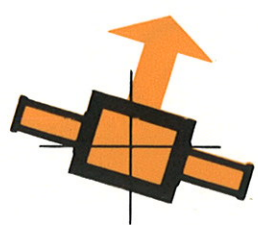
When driving straight ahead, the tracks are driven with the speed F . When turning, the speed of the tracks is increased or reduced by a speed S , the size and sign of which depends upon the deflection of the hydraulic speed gear.



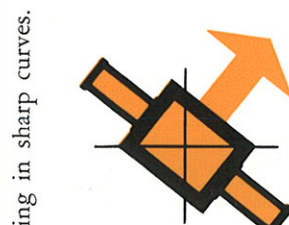
Deflection zero.
 S is zero.
 Both tracks driven with speed F .
 The tank has a straight course.



Deflection to the left. (Diagram above)
 S is negative for the left track and positive for the right track.
 The tank turns to the left.



Deflection to the right.
 S is positive for the left track and negative for the right track.
 The tank turns to the right.

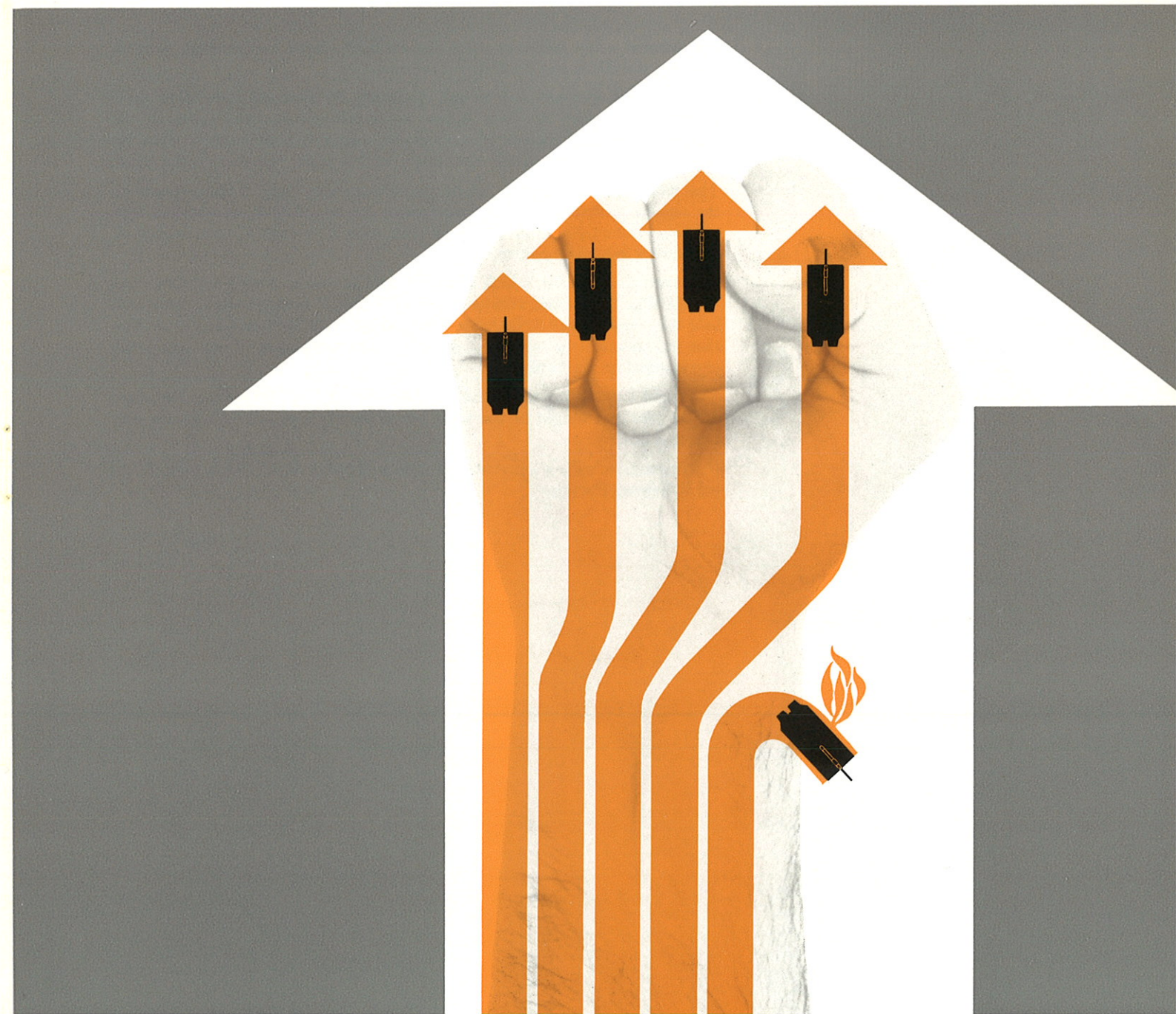


Driving in sharp curves.

When the deflection is more than 20° , the clutch/brake system is automatically engaged, and the turn is made by disengaging and braking the inside track.

If a turret tank, owing to some breakdown (usually a damaged track) is immobilized, it has greater possibilities of aiming and firing than Tank S. Is this of any importance? Mobility is a distinguished feature of armoured combat. A tank which loses its mobility is usually worthless from a tactical point of view. It is most probable that it will be left behind in a place where its prospects of

contributing towards reaching the objective are very small. Moreover, experiences from modern armoured combat show that in most cases the crew immediately leaves the tank if it has become immobile. The possibility of firing after a track has been damaged thus cannot be deemed to have any significance to the combat value in normal armoured combat operations.



THE COMBAT VALUE OF TANKS

ELEVATION PRINCIPLE

The combat value increases when the mobility, rapid functioning, weapon capacity, durability and reliability is increased.

The mobility, weapon capacity and durability are mutually dependent upon each other, as each of these factors represents an essential share in the weight of the tank. These properties, in relation to each other, must be subject to a balance within the scope of the total weight of the tank.

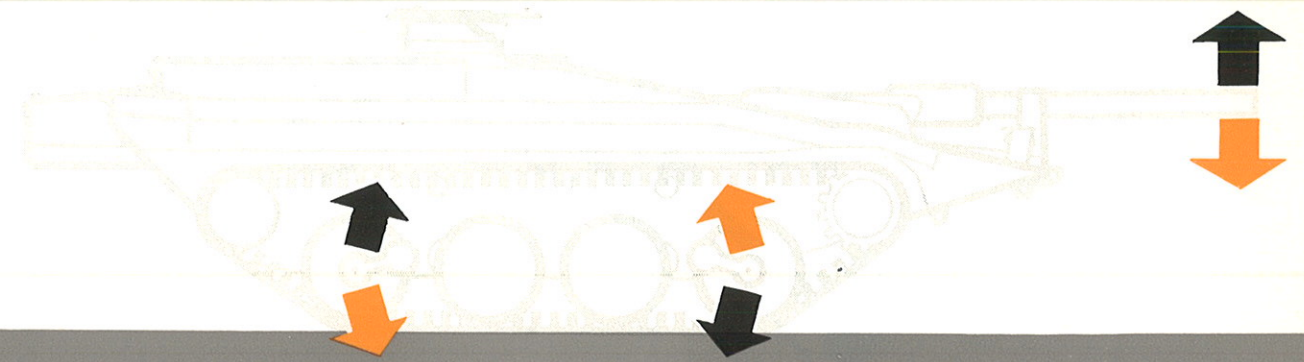
The mobility, for instance, can be given a greater share at the expense of the armour protection, whereby superiority can be obtained, in a certain type of tactical situations, over a type of tank with a "balanced" distribution of the combat value components.

However, this opinion, which has had many advocates during the time after World War II, has met with great resistance from, among others, those who base their opinion upon combat experiences and who demand such protection that the tank will be capable of surviving hits from most of the opponents encountered on the battle-field.

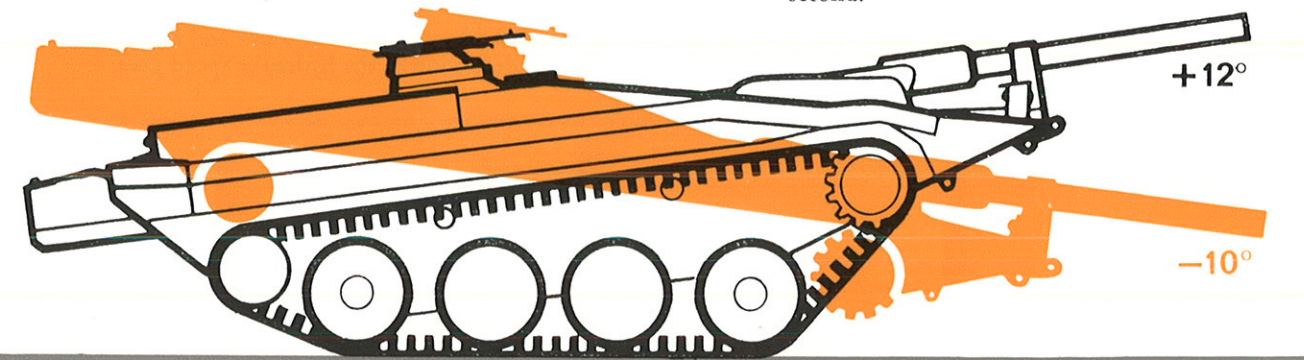
The rapid functioning and reliability need not necessarily have any influence on the size and weight of the tank, but is mainly a product of system concept and quality.

In comparison with a conventional, medium-heavy turret tank, tank S has the following features:

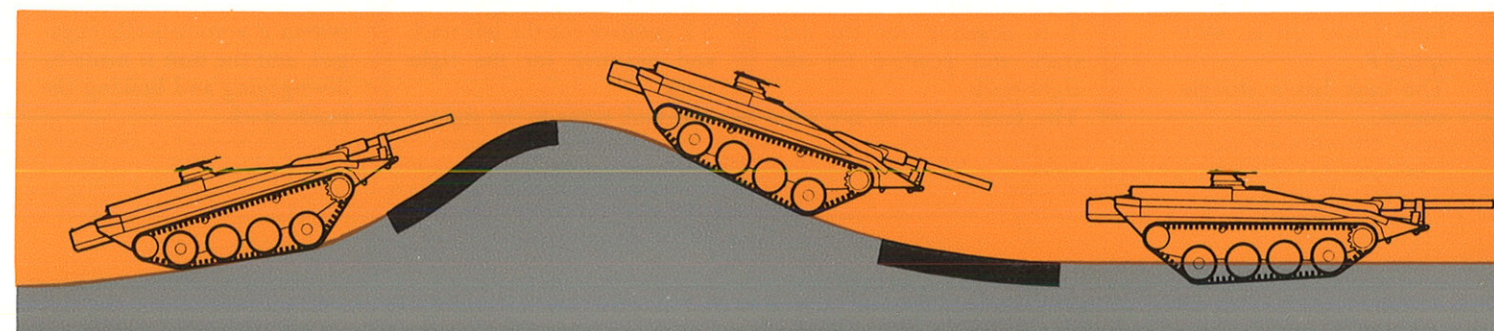
Elevation is carried out by changing the vertical positions of the front and rear road wheels.



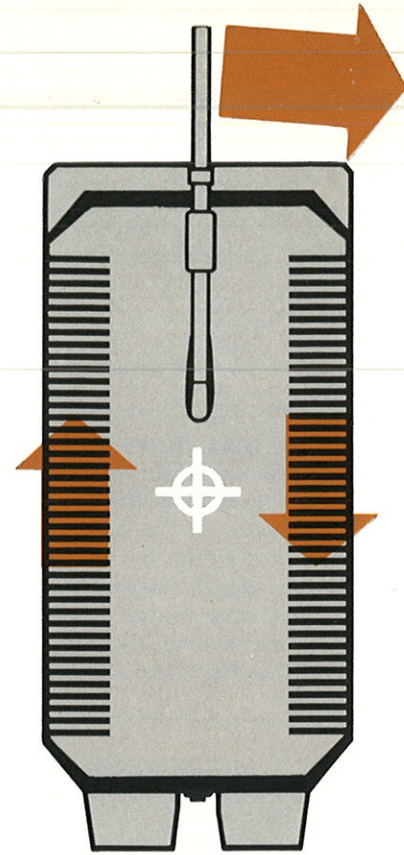
The elevating velocity is continuously variable, from zero to a maximum of 5 degrees per second.



The elevating gear can be engaged while driving, and used to facilitate climbing over steep ground formations and obstacles and when travelling over marshlands.



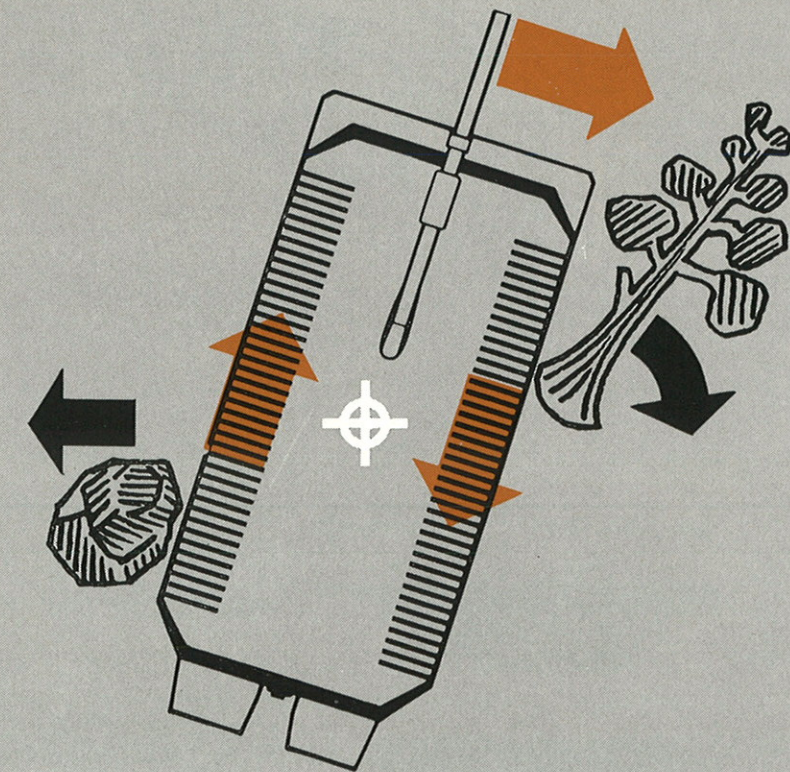
TRAVERSING PRINCIPLE



When traversing, the entire vehicle is turned, by driving the tracks in opposite directions.

The traversing velocity is continuously variable through zero.

Small trees and stones do not obstruct the traversing movement.



When the tank comes into contact with a stationary object, e.g. protruding bedrock, the pivoting centre shifts to the point of contact. This has no influence on the aiming, and is not at all noticeable to the gunner.



MOBILITY

— greater, due to the lower weight of the tank and more ease in making turns.

DURABILITY

— greater because of the smaller target area and more sloping armour plates. Moreover, it is easier to keep the tank ABC-tight.

WEAPON CAPACITY

— greater, since the automatization involves a higher rate of fire, the fixed mounting of the weapon permits a higher muzzle velocity, the powder gases do not inconvenience the crew, and the problem of the spent cartridge cases has been eliminated.

RAPID FUNCTIONING

— ensured by an improved design of the control system and a more appropriate internal combat organization, whereby the high weapon capacity and the very good protection gives 100 % effect, with a minimum of delay.

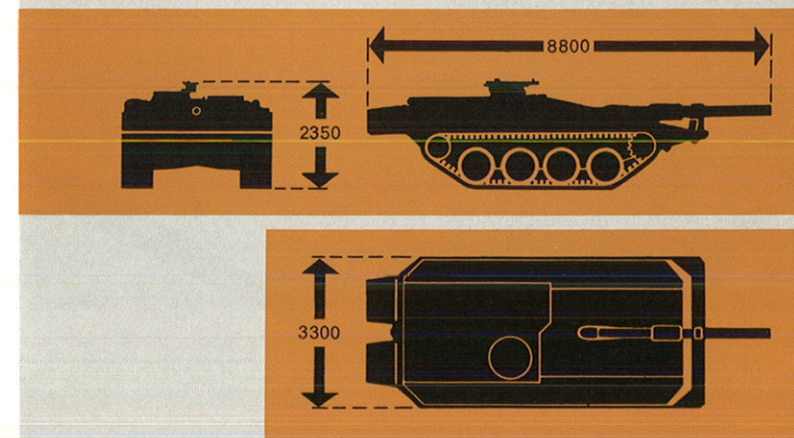
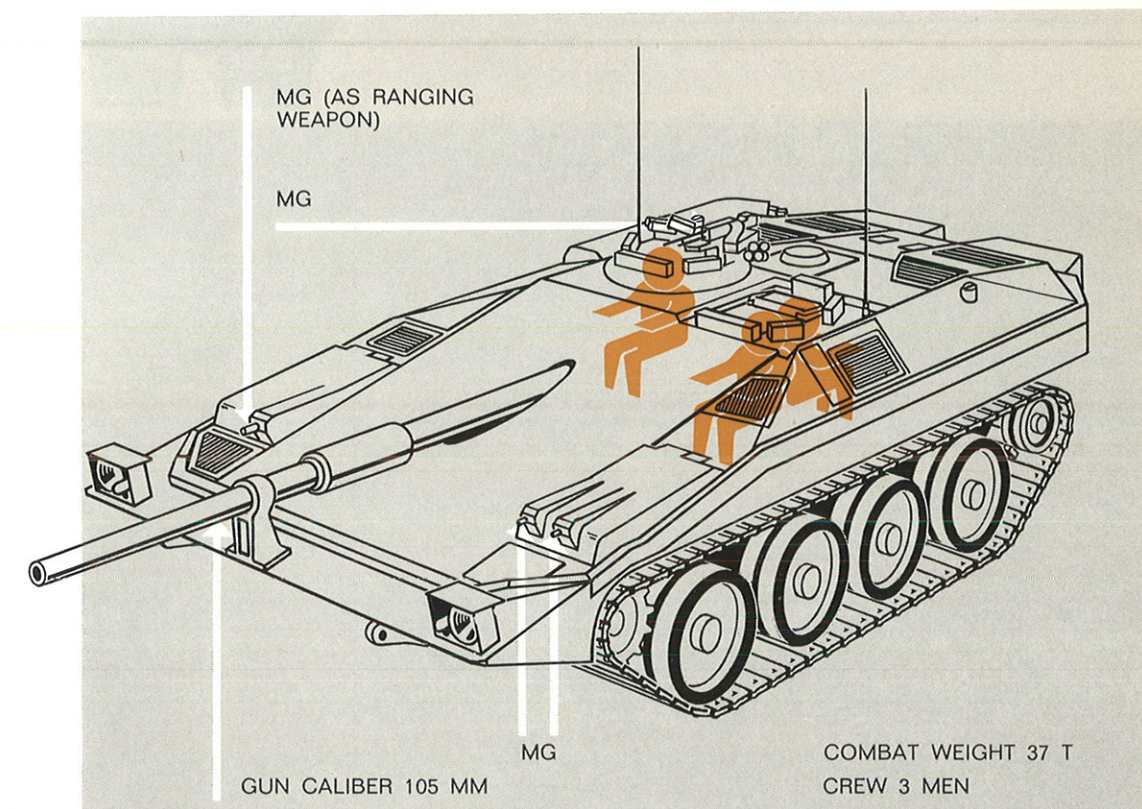
RELIABILITY

— greater, since it has been possible to make the tank, as a weapon system, more simple from the point of view of functioning.



The main difference between Tank S and conventional tanks with turrets is that in Tank S the main weapon is an automatic gun with fixed mounting in the tank. When firing, the weapon is aimed by carrying out aiming movements with the entire vehicle. The same control devices are used for aiming as for steering when driving. In combat, when the tank is driven cross-country

and engages enemy targets, the driver/gunner manoeuvres Tank S in about the same way as a fighter plane pilot manoeuvres his plane in an aerial battle. This brochure is intended to give a general idea of Tank S: the principles of its design, the most important data and some basic concepts and judgements upon which the design has been based.



TANK S



TANK S

