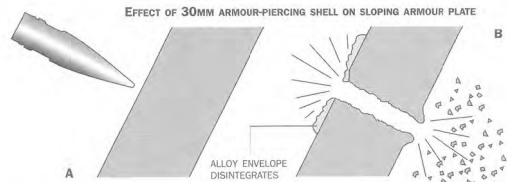


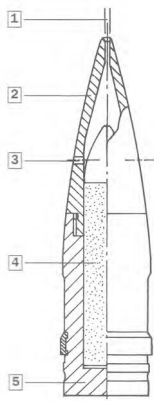
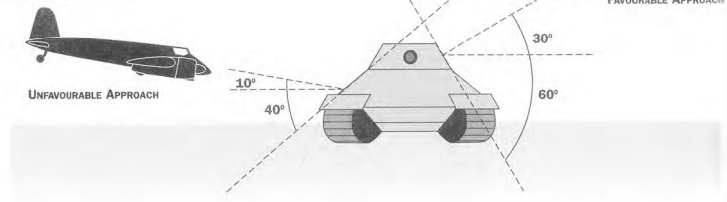


A Luftwaffe officer inspects the pierced 78-85 mm thick cast turret side of a T-34.



A) The slim pointed shape and the high density of the tungsten-carbide core enables the anti-tank shell to travel at very high velocity.
 B) The core punches through sloping armour. Externally unimpressive, the effect inside the turret would be devastating.

Upon entering, the 30 mm² tungsten-carbide shell broke up into hundreds of jagged pieces which, together with fragments of the turret armour ricocheted around the interior of the turret and crew compartment.



30 MM SOLOTHURN TUNGSTEN CARBIDE SHELL
 1. VENT HOLE
 2. LIGHT ALLOY BALLISTIC CAP
 3. 2 VENT HOLES
 4. TUNGSTEN-CARBIDE CORE
 5. LIGHT ALLOY ENVELOPE

with further development, could possibly be modified to accept a 40-50 round magazine. These investigations showed, however, that while the MK 103, Flak 18 and Pak 38 were all feasible options, the Flak 41 was too heavy.

At the beginning of 1942, instructions had been issued to investigate the use of the Army's new 75 mm Pak 40 anti-tank gun as an aircraft weapon which could be suitably adapted and despatched to the front without delay. Contracts calling for this gun for Army use had been placed in 1939 but, due to the pressures of other work, it was not ready for production by the opening of the Russian campaign. Once the limitations of the existing equipment were seen, the Pak 40 contracts were sped up and the gun went into full-scale production. It was used with considerable success throughout the rest of the war and its performance

and ability to penetrate 94 mm (3.7 inches) of armour plate at 30 degrees at 1,000 m (3,280 ft) was considered entirely satisfactory.

Rather than develop a fully automatic loading mechanism for the Pak 40 it was thought that a semi-automatic mechanism would present fewer difficulties and could therefore be in service earlier. However, as a semi-automatic cannon would require a member of the crew to assist with the loading operation, a single-seat aircraft was out of the question and the robustly constructed Ju 88 with its crew of four and general good strength was a natural choice. As will be related later, the results of the Ju 88 trials, although disappointing from an operational viewpoint, would eventually benefit the development of a 75 mm fully-automatic cannon for use in the Hs 129 and a version so equipped did see service in the autumn of 1944.

1 *KAMPFERSTÖRER*: LITERALLY "BATTLE DESTROYER" OR HEAVY-FIGHTER, BUT BASICALLY A MULTI-PURPOSE AIRCRAFT COMBINING THE ROLES OF HEAVY FIGHTER, LIGHT BOMBER, RECONNAISSANCE AND GROUND-ATTACK.
 2 IN AN ALLIED COMBINED SERVICES DETAILED INTERROGATION REPORT DATED 24.5.43., *GEN. MAJOR BASSENGE*, AT THE TIME OF HIS CAPTURE GERMAN AIR DEFENCE COMMANDER OF TUNIS AND BIZERTE BUT WHO SERVED AS A GROUP LEADER IN THE *TECHNISCHES AMT* UNTIL EARLY 1938, STATED: "THIS 30MM GUN WAS READY FOR USE IN SPRING '37 AND UDET FORBADE ITS FURTHER DEVELOPMENT. HE SAID TO ME PERSONALLY, "YOU MUST KNOW YOURSELF I DON'T NEED SUCH A GUN AT 50 METRES. I BLAZE AWAY WITH A MACHINE-GUN OR WITH 2 OR 4 MACHINE GUNS.""