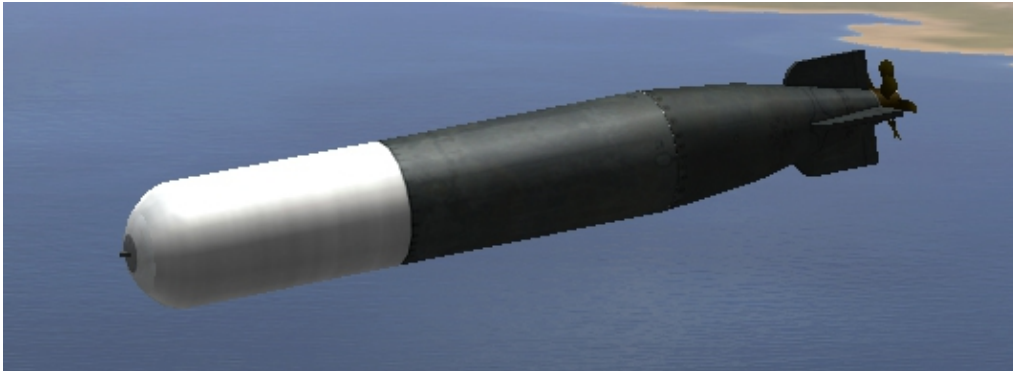


IL2 Phase 7 Torpedoes

USA



Mark 13 Mod 1

Weight: 874 kg

Max.Range: 3800 m

Max. Speed: 30.5 kts

Max. Drop Altitude: 15 m

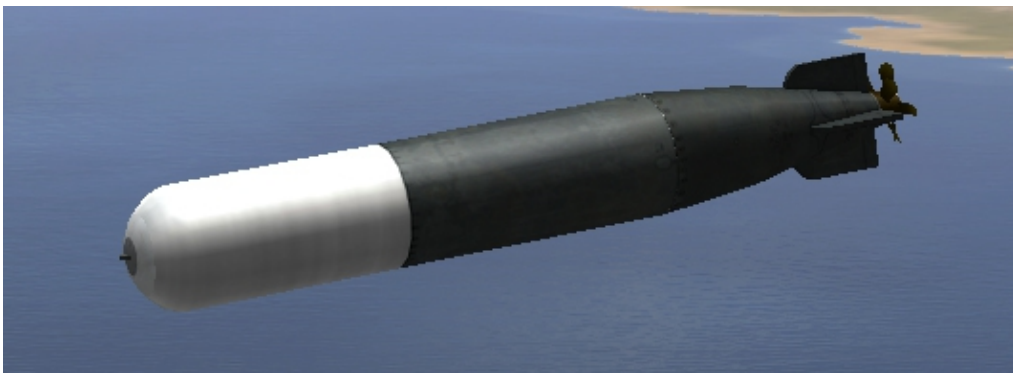
Max. Drop Velocity: 205 km/h

Recommended Entry Angle: 14 - 20°

Min. Arming Time: 7 sec.

Warhead: 178 kg

The US Navy's torpedo at the start of the war, the early Mark 13 was disastrously inept. The munition's launch parameters were very strict, and the slow required launch speed left the carrying aircraft quite vulnerable. Most of these weapons failed to run; many sank or broke up on impact, and the few that did hit their targets often failed to detonate.



Mark 13 Mod 2A

Weight: 910 kg

Max.Range: 3800 m

Max. Speed: 33 kts

Max. Drop Altitude: 360 m

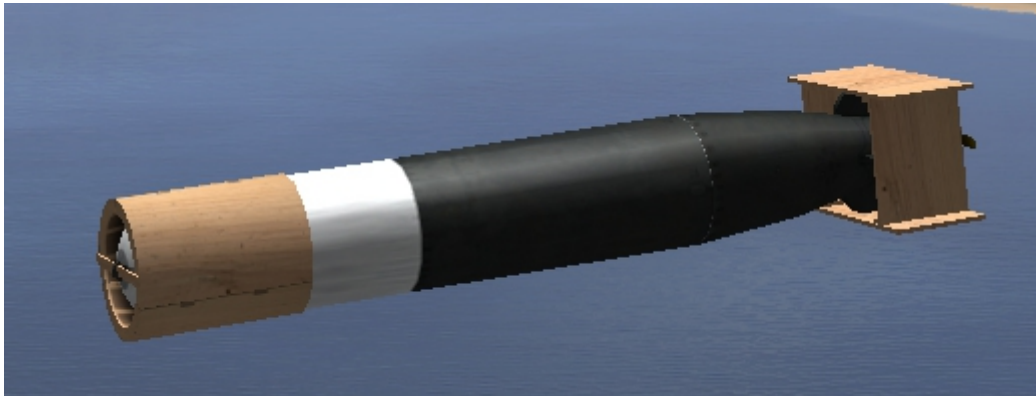
Max. Drop Velocity: 255 km/h

Recommended Entry Angle: 16 - 35°

Min. Arming Time: 5 sec.

Warhead: 190 kg

The Mod 2A represented an improvement in many respects to the earlier versions of Mark 13. Examples of these torpedoes began to appear in carrier use by the start of 1943.



Mark 13 Mod 10

Weight: 1005 kg

Max.Range: 3800 m

Max. Speed: 33 kts

Max. Drop Altitude: 2000 m

Max. Drop Velocity: 275 km/h

Recommended Entry Angle: 16 - 85°

Min. Arming Time: 5 sec.

Warhead: 275 kg

The Mark 13 torpedo was continuously improved and modified throughout the war. By 1944, the Mod 10 was fitted with wooden "cuffs" over the warhead and fin, which both slowed the munition on drop and protected it upon entry into the water (upon which they fell away). As a result, the launch parameters were very generous, and a more powerful warhead was fitted in addition.

United Kingdom



Mark 12

Weight: 702 kg

Max.Range: 3200 m

Max. Speed: 37 kts

Max. Drop Altitude: 40 m

Max. Drop Velocity: 250 km/h

Recommended Entry Angle: 14 - 27°

Min. Arming Time: 3 sec.

Warhead: 176 kg

The standard British torpedo at the outbreak of war, the Mk XII was small and light for such a munition, but featured good running speed and range. The lightly built casing required the weapon to be launched from very modest altitude, however.



Mark 15

Weight: 817 kg

Max.Range: 3200 m

Max. Speed: 33 kts

Max. Drop Altitude: 40 m

Max. Drop Velocity: 250 km/h

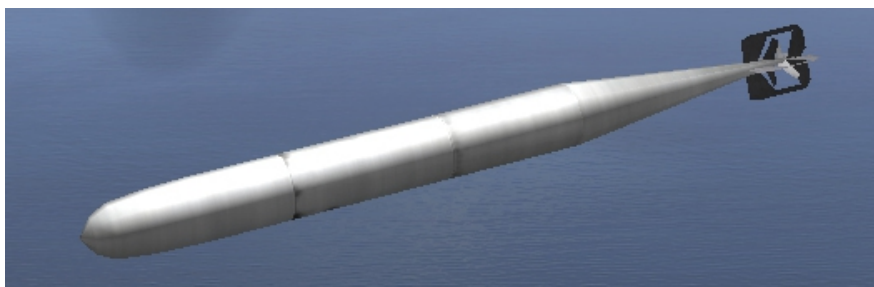
Recommended Entry Angle: 14 - 27°

Min. Arming Time: 3 sec.

Warhead: 247 kg

The Mark XV torpedo was an improved model of its predecessor, the Mk XII, and was the standard British munition of this type for the second half of the war. The unit's operation was virtually identical to the earlier Mark, but the warhead was much more powerful.

Soviet Union



Model 45-36AN

Weight: 935 kg

Max.Range: 4000 m

Max. Speed: 39 kts

Max. Drop Altitude: 100 m

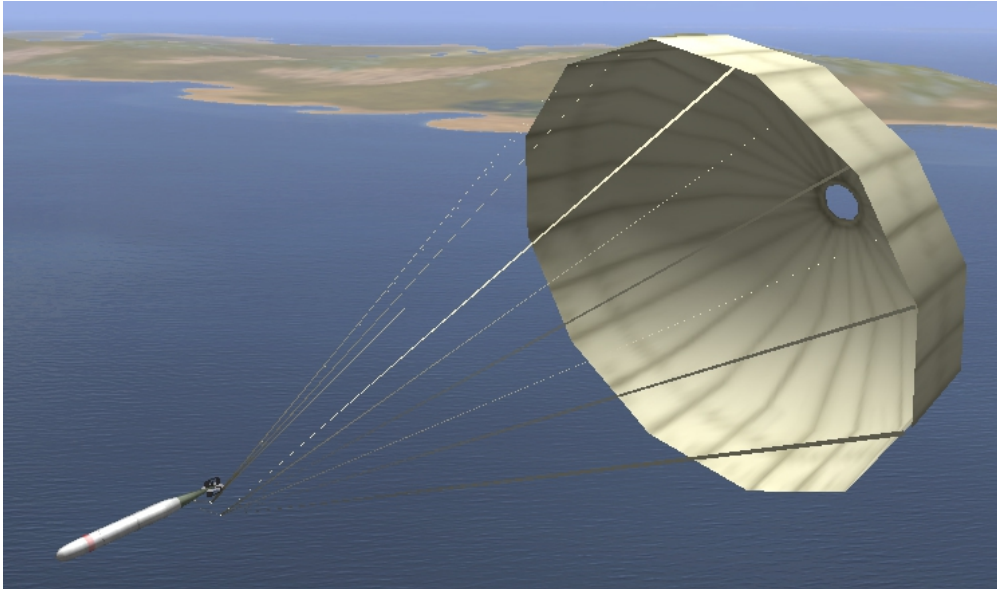
Max. Drop Velocity: 300 km/h

Recommended Entry Angle: 14 - 36°

Min. Arming Time: 3.5 sec.

Warhead: 200 kg

At the start of the Second World War, the USSR possessed what was surely one of the finest all-round torpedoes in the world. The 45-36AN featured outstanding range and velocity along with a powerful 200 kg warhead. Curiously, this weapon was never upgraded during the war, and served in its original form throughout.



Model 45-36AV-A

Weight: 935 kg

Max.Range: 4000 m

Max. Speed: 39 kts

Max. Drop Altitude: 2000 m

Max. Drop Velocity: 330 km/h

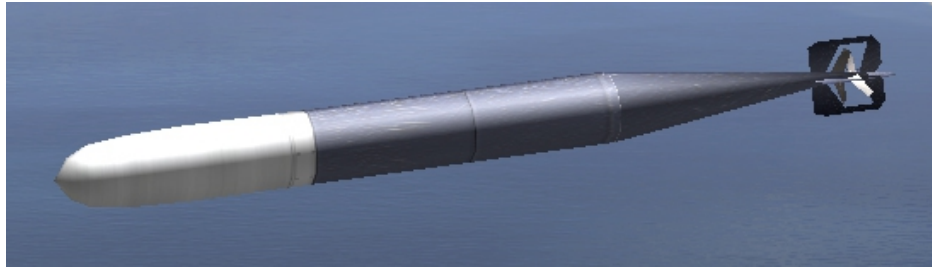
Recommended Entry Angle: 14 - 90°

Min. Arming Time: 3.5 sec.

Warhead: 200 kg

The 45-36AV-A was a high-altitude launch capable version of the AN. The weapon deployed a parachute after release to slow its descent, permitting a drop altitude of 2000 meters, or more. However, the parachute could affect the munition's orientation during a long descent, and most of these weapons were released from under 1000 m.

Germany



(LT) F5b

Weight: 750 kg

Max.Range: 2000 m

Max. Speed: 40 kts

Max. Drop Altitude: 120 m

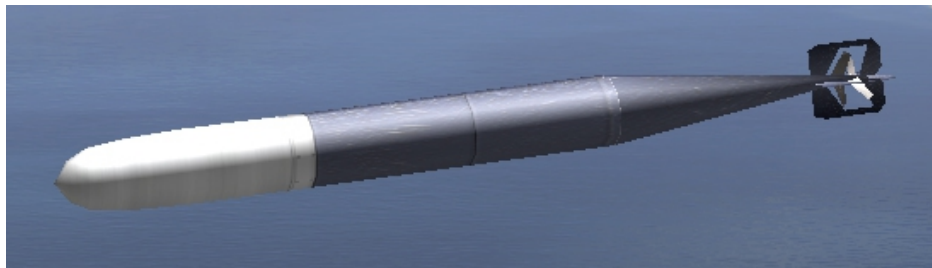
Max. Drop Velocity: 280 km/h

Recommended Entry Angle: 15 - 30°

Min. Arming Time: 3 sec.

Warhead: 200 kg

At the end of 1941 the Luftwaffe introduced the F5b to replace the ageing F5 unit (an obsolete pre-war Norwegian torpedo). The F5b was a good all-round munition and featured a two-speed setting for long range launches (6000 m @ 23 kts), albeit this was rarely used. The lightly built casing required strict attention to launch parameters, however, and a disciplined attack approach was a necessity with this weapon.



(LT) L2

Weight: 812 kg

Max.Range: 2000 m

Max. Speed: 40 kts

Max. Drop Altitude: 120 m

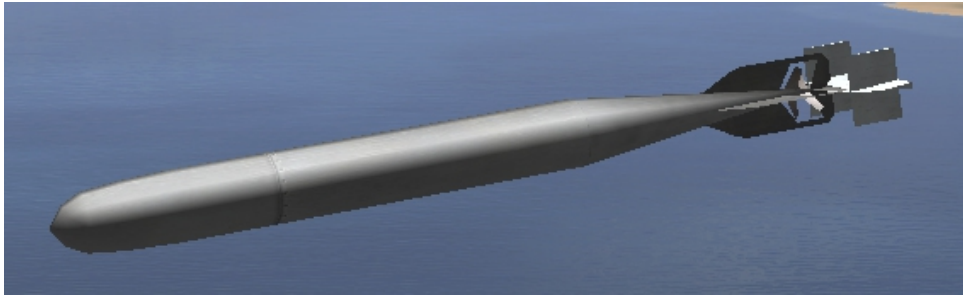
Max. Drop Velocity: 340 km/h

Recommended Entry Angle: 15 - 30°

Min. Arming Time: 3 sec.

Warhead: 250 kg

The L2 was a progressive improvement of the F5b and appeared early in 1944. The case was moderately strengthened, allowing for a greater launch velocity, and the warhead was considerably more powerful.



Fiume F200 (*used by Luftwaffe as the "F5W"*)

Weight: 905 kg

Max.Range: 3000 m

Max. Speed: 40 kts

Max. Drop Altitude: 60 m

Max. Drop Velocity: 300 km/h

Recommended Entry Angle: 20 - 31°

Min. Arming Time: 3.5 sec.

Warhead: 200 kg

The 'Fiume' was widely used by both the Italian and German Air Forces throughout the war. The wooden stabilising fin broke away on impact with the water, and was said to increase the munition's accuracy. The launch parameters for this weapon were notoriously strict, with special care required to monitor the impact angle with the greatest care.



Fiume W120 (*used by Luftwaffe as the "LT350"*)

Weight: 350 kg

Max.Range: 15000 m

Max. Speed: 13.5 - 4 kts (slowed as battery consumed)

Max. Drop Altitude: 100 m

Max. Drop Velocity: 300 km/h

Recommended Entry Angle: 14 - 31°

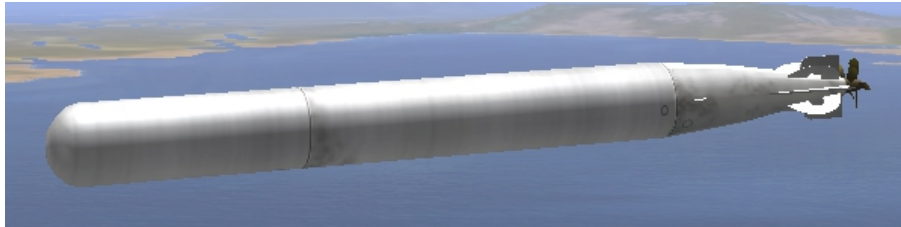
Min. Arming Time: 3.5 sec.

Warhead: 120 kg

This tubby little torpedo was developed by the Italians as an anti-convoy munition, and it was used as well by the Luftwaffe in the same role. The W120 was battery powered, and thus it slowed gradually as the capacity weakened. During its run, the munition was programmed to perform various semi-circle manoeuvres, but these were of a highly erratic nature, and exacerbated the unit's low velocity. The warhead was not particularly powerful, but the over-all weight of the W120 was appreciably

low. A parachute equipped version was also developed.

Japan



Type 91 Mod 2

Weight: 935 kg

Max.Range: 2000 m

Max. Speed: 42 kts

Max. Drop Altitude: 40 m

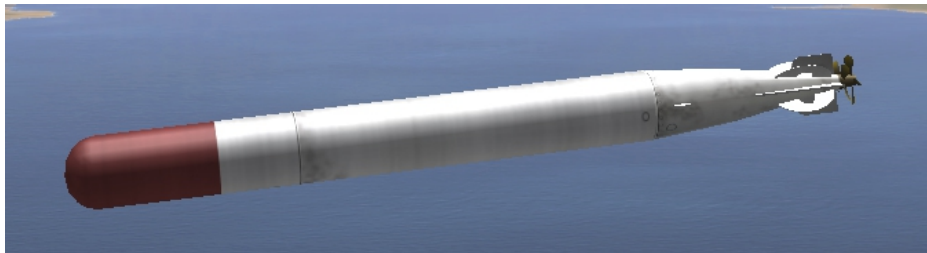
Max. Drop Velocity: 260 km/h

Recommended Entry Angle: 15 - 25°

Min. Arming Time: 3 sec.

Warhead: 205 kg

The Type 91 was standard Japanese Navy torpedo at the start of the war, featuring in many of the famous battles of 1941-42 (a modified Type 91 with fins was using in the Pearl Harbour attack). The Japanese seemed to have a flair for torpedoes, and indeed the Type 91 was an outstanding munition, being both fast and powerful. Its main drawback was the need for a low drop altitude and velocity, again resulting from a lightly built casing.



Type 91 Mod 3, improved

Weight: 850 kg

Max.Range: 2000 m

Max. Speed: 42 kts

Max. Drop Altitude: 65 m

Max. Drop Velocity: 300 km/h

Recommended Entry Angle: 13.5 - 26.5°

Min. Arming Time: 4 sec.

Warhead: 240 kg

The Type 91 was progressively improved during the war, and by later 1943 the Mod 3 (improved) appeared in service. Launch parameters were expanded, and the unit received a more powerful warhead. Remarkably, it was also nearly 85 kg lighter than earlier examples.