



Figure 6. From the test firing in September 1943. First a salvo with only slight elevation was fired in order to check that the mounting work had been carried out correctly. (Photo from the Norwegian Armed Forces Museum's (FMU) archives).

– three 40 mm (1.6 inches) Bofors anti-aircraft guns (AA-guns).  
 – six 20 mm (0.8 inches) anti-aircraft (AA) guns (Flak – Flugabwehr Kanone).

Some of the latter anti-aircraft guns were placed on wooden platforms.

At the same time Lundahaugen was taking shape, blasting and concreting work was also being carried out in Lørbern, approximately three kilometres further northeast. This is where the fire-control centre for the battery was built. The building and installation work was finished in September 1943 and the technical test firing was carried out in September 1943.

The triple turret at Lundahaugen has never seen battle as coastal artillery. The German gun-turret crew consisted of ten officers and 107 soldiers, as well as the thirty men in the fire-control centre at Lørbern. In addition to this, there were men for the other weapons in the area and a smaller local defence force and administrative personnel.

The turret battery's fire-control centre was in Lørbern. The measuring instruments in the fire-control centre were tracking columns, model 1938,

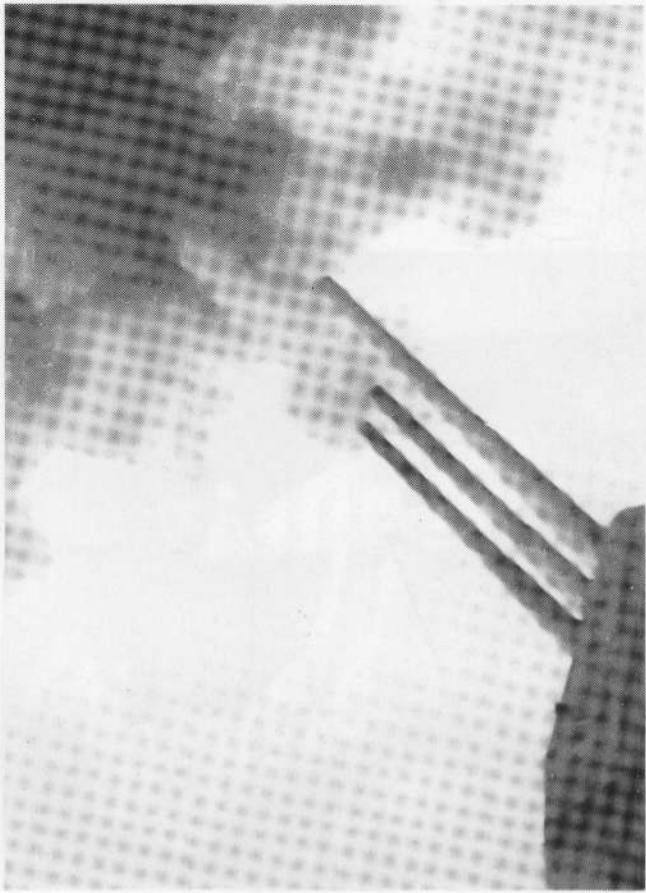


Figure 7. From the test firing of September 1943. Here a high-elevation salvo is being fired. Elevation: The gun barrel's angle to the horizontal plane (erection). (Photo FMU).

which gave the bearing to the target, as well as a 10.5 metre (34.5 feet) stereoscopic range-finder. There were four forward tracking stations at Tarva, Garten, Løkhaug (Agdenes) and Skippervik (Nes). Their bearings were converted to bearing and distance to the target from the battery's fire control centre. The corrections were made with instruments in the fire control centre.

In the spring of 1945 the turret guns were jointly taken over by Norwegian and English forces. The guns were test fired for the first time after the war by German soldiers with Norwegian/English observers on 2 October 1945. In 1945 the battery became part of the Trøndelag coastal artillery brigade, later called Fort Austrått.

Training of the Norwegian battery crew took place in 1948 and refresher training courses were held in that year and in 1951 and 1953. Late in the summer of 1948 the 8.8 cm interior guns were test fired, but the full calibre firing planned in 1951 had to be cancelled because of fog. During the exercises in 1953 full calibre firing took place on 16 June with good results. The target used consisted of drifting rafts which were put out to sea at Tarva.



Figure 8. German soldiers transporting shells in the battery. (Photo FMU).

They were fired at from a distance of approximately 22,000 metres (13,670 miles). The Norwegian crew was the same size as the German's had been.

In order that everything was in top condition at all times, daily and periodic inspection routines were necessary. This included operating the turret and the power units in the machine station. Therefore two technical officers were employed at the turret to do the necessary work. The battery was closed down in 1968, but some maintenance work was carried out until 1977.

While the battery was still in commission after the war it was visited by several famous people. The then Crown Prince Olav attended the planned full calibre firing in 1951, but mother nature had other ideas as fog prevented the firing from taking place.

The Deputy Commander of Nato's European Command at the time,

Field Marshall Montgomery of Alamein, visited the Austrått battery in the 1950s. Several committees and commissions, including the National Defence Committee, have visited the battery. It is said that not all members of the Defence Committee had a successful tour. Ladders and manholes were so narrow that the size of the midrifts of some members of the committee unfortunately prohibited their passage.

In 1990 the Defence Department gave 1.1 million kroner for the restoration of the turret. The Ministry of Defence's building service, Trøndelag Section, has been in charge of the work while planning was done together with the Norwegian Armed Forces Museum and the Trøndelag Naval Defence District. After restoration, the battery was handed over to the municipality of Ørland as a tourist attraction.

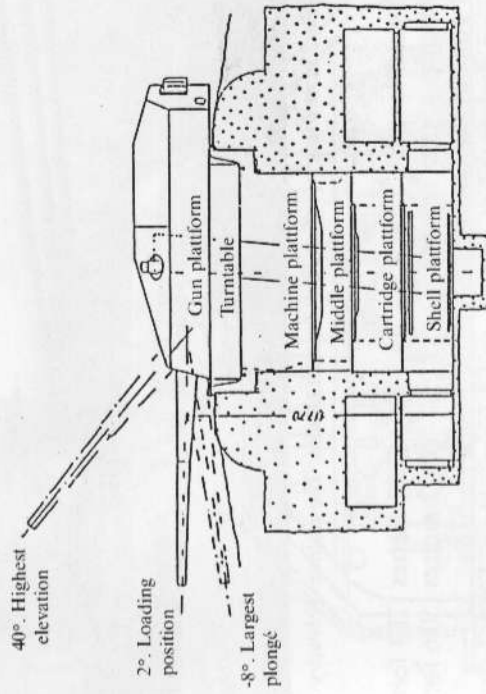


Figure 9a. Cross section of the gun turret at Fort Austrått.

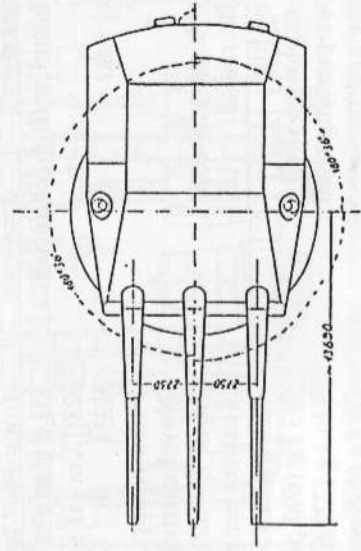


Figure 9 b. Dimension plan view of the gun turret at Austrått.

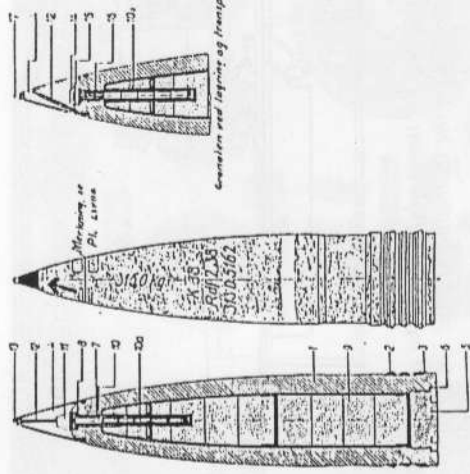
### Technical specifications:

Figure 9a shows a cross section of the triple turret and figure 9b shows a plan view of the turret at Lundahaugen. The drawing shows the most important dimensions. The height from the floor of the shell platform up to the gun barrel's loading point (cradle trunnions) is 11.77 metres (38.6 feet). All this is rotated when the gun turret is traversing.



Figure 10. The 28 cm triple turret at Fort Austrått (Photo: The author, February 1990).

- The turret's total length 21.72 metres (71.3 feet)
- The gun's length 15.42 metres (50.6 feet)
- Number of guns in the turret 3
- The guns were designated as no. 1, 2, and 3 from right to left.
- Traversing clearance 360°
- Elevation clearance from +40° to -8°
- Weight of gun barrel with mechanism 53.2 tons
- Calibre 28.3 cm (11 inches)
- The gun's model year 1934
- Manufacturer Fried Krupp, Essen
- Mounting Naval carriage, model 1928
- Muzzle velocity/initial velocity from 890 m/s to 900 m/s
- Rate of fire/cyclic rate 3 salvos per minute
- Greatest range of fire 42.6 km (26.5 miles)
- Weight of high-explosive shell 313 kg (690 pounds)
- Weight of armour-piercing shell 330 kg (727.6 pounds)
- Propellant in case approx. 76 kg (168 pounds)
- Additional propellant in «charge bag» approx. 41 kg (90 pounds)



1. Kulspruta	1. Kulspruta
2. Kulspruta	2. Kulspruta
3. Kulspruta	3. Kulspruta
4. Kulspruta	4. Kulspruta
5. Kulspruta	5. Kulspruta
6. Kulspruta	6. Kulspruta
7. Kulspruta	7. Kulspruta
8. Kulspruta	8. Kulspruta
9. Kulspruta	9. Kulspruta
10. Kulspruta	10. Kulspruta
11. Kulspruta	11. Kulspruta
12. Kulspruta	12. Kulspruta

Figure 11. High-explosive shell with instantaneous fuze (percussion/impact action fuze) (from the regulations).

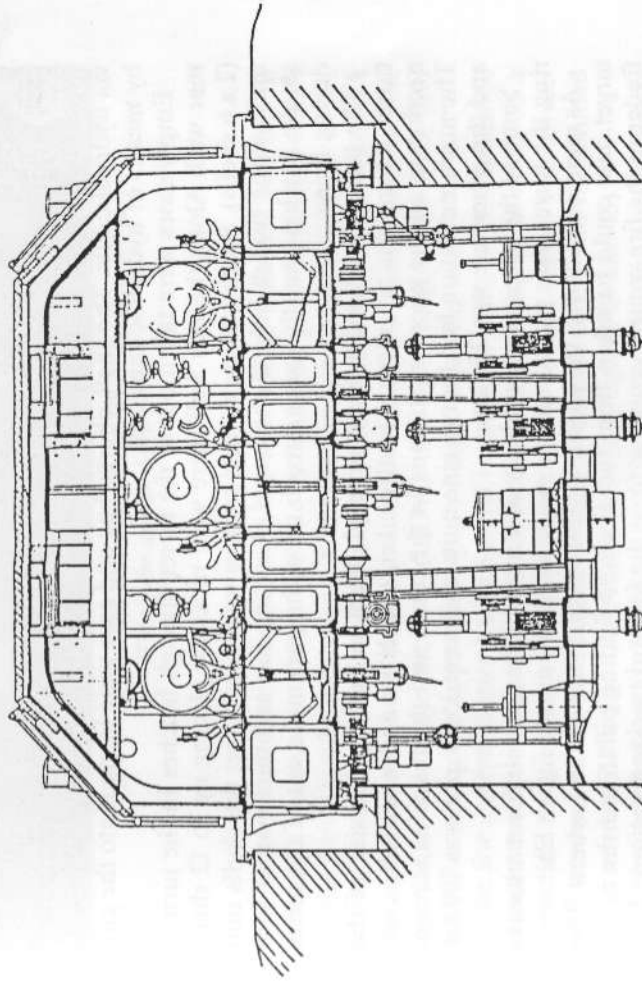


Figure 12. Cross section of the gun turret, turntable and machine platform. You can see the ammunition lifts between gun barrels no. 1 and 2 and to the right of barrel no. 3.