WELCONE TOHELL

WELCOME TOHEMEN

Bofors Test Center



The first Bofors firing range was established in 1886

At present site since 1913

Founded as an independent company in 1999

Perform approximately 600 tests per year

63 employees

Situated in Karlskoga, Sweden





Turnover 2014



87 Million SEK ~ 9.1 Million € ~ 10.8 Million US \$

Business Areas



Testing

Direct & Indirect Test Firing Insensitive Munitions (IM) Environmental Testing Unmanned Aircraft Systems (UAS) Lifetime Extension **Destruction & Demil**

Business Regions

Present

Sweden **United Kingdom** Germany France Norway **Belgium** Finland Switzerland Korea Greece Denmark Singapore Holland USA Australia UAE



Future

Turkey Canada Austria India Italy Spain Brazil

Proving Ground



Restricted Operation Area: 100 km² (200 km²)

Maximum Firing Range: 25 km

Approximate Width: 4 km

Maximum NEQ that can be detonated: 250 kg TNT Equivalent

Restricted Airspace: 30,000 feet (can be extended)

Permanent Test Sites







Six permanent test sites equipped with:

Bunkers for protection of personnel and equipment

Thermal treatment chambers with a temperature range from -54°C to +76°C

Target butts like stone walls and concrete bunkers

Maximum firing ranges at each test site:

Övre	25 km (indirect firing)	600 m (direct firing)
Nedre	25 km (indirect firing)	600 m (direct firing)
Roten	25 km (indirect firing)	600 m (direct firing)
Björnen	25 km (indirect firing)	1,000 m (direct firing)
Abborrtjärn	500 m (direct firing)	
Lillen	600 m (direct firing)	

Temporary Test Sites









Brotorp

Target butt with a height of 18 m Direct firing ranges from 1,000 m - 2,700 m

Älgsimmen

Proximity fuze test area Firing ranges from 600 m – 1,600 m Different target solutions like cylindrical, spherical and missile targets

Beteshult

Anti-tank missile test site Firing ranges from 1,000 m – 1,840 m Different target solutions like T-72, BMP-1 and moving tank targets

Bredtjärnstorp

Anti-aircraft missile test site Firing ranges from 1,500 m – 4,500 m Fixed targets like hovering helicopter Towed targets and UAV targets

Temporary Test Sites



Bonusplan

A 300 x 300 m flat levelled and unobstructed area covered with gravel The maximum firing range to Bonusplan is 19 km Also used for IM tests and testing of UAS



22,000

A 500 x 800 m open soil and gravel surface impact area The maximum firing range to this recovery area is 22 km



Rösimmen Destruction site Maximum NEQ that can be detonated: 250 kg TNT Equivalent

Special Test Facilities





Vibration, Shock, Drop, Bump, Bounce, Acceleration, Climate, Thermal Shock, Sand and Dust, Salt Spray, Solar Radiation, Rain, Pressure



Open Jet Wind Tunnel

Wind speeds from 10 m/s to Mach 3.6 Test items and scale models up to a length of approximately 40 cm The open exhaust allows parts from the test object to separate during testing Air could be pre-heated to maximum 600°C.



Flash X-ray System Used for both static and dynamic firings Widely used for evaluation of shaped charge jets



X-ray and CT inspection system

Proprietary 225kV micro focus X-ray source with 3µm focal spot size High performance image acquisition and volume processing

At Home or Worldwide



Demonstration at Bofors Test Center, 2014 We provided proving ground, personnel, targets, cameras, high speed cameras, spectator platforms, catering, hotel reservations etc.



Demonstration in the Middle East, 20xx With our flexible personnel and mobile measurement equipment we can perform demonstrations for our customers all over the world.























Only your own imagination sets the limits We can provide armour plates, tanks, BMPs, concrete walls, brick walls, earth and timber bunkers, adobe houses, helicopters, UAVs, moving tank targets, air-craft towed targets, boats, cars etc.

Workshops



Mechanical Workshop and Maintenance Hall

We have a complete mechanical workshop where we can repair and maintain gun systems, military vehicles, tanks, and howitzers etc. In our maintenance hall, which is specially built for armoured fighting vehicles, our customers can work on their systems in a safe and secure way with highest level of secrecy.



Ammunition and Explosives Workshop In our ammunition and explosives workshop our skilled personnel can manufacture, reload and adjust ammunition and most other products containing explosives.

Firing Systems

Direct Firing

20 mm High Pressure High Pressure 30 mm High Pressure 40 mm **High Pressure** 57 mm **High Pressure** 71 mm High Pressure 73 mm **High Pressure** 76 mm Recoilless 84 mm Recoilless 90 mm High Pressure 90 mm High Pressure L51 and L62 105 mm Recoilless 106 mm L44 Leopard II 120 mm

Indirect Firing

81 mm 105 mm 120 mm 155 mm

L16 and L19



Instrumentation

LDS Nicolet High Speed Data Acquisition Systems

Kistler and PCB Pressure Transducers

Weibel Radar systems

Photron High Speed Colour Video Cameras

Sony HD-Video Cameras

Vaisala Meteorological Systems

IMAGO Mobile Optical Tracking System

JDA Telemetry System

At the Test Site

- Target prep. etc.

- Ammunition prep.



BOFORS TEST CENTER

(if any)

Various

Destruction and EOD

Destruction of Explosives

At our destruction sites we annually destroy 1,200 tons of explosives by open burning and 60 tons by open detonation. We have also a heated kiln where we destroy smaller objects like fuzes and small arms ammuniton.

EOD Work at Test Sites

In case of misfiring creating duds at test sites or impact sites, we have EOD specialists employed who have been trained by the Swedish Armed Forces. There are routines established of how we handle our EOD work and we have suitable EOD charges in stock.

Underwater Testing; Scaled Tests

Test site S15 at Grindsjön

Controllable environment 6 m basin depth Heavy and large objects Maximum NEQ that can be detonated: 1 kg TNT Equivalent Clean water, enabling underwater video footage

Underwater Testing; Large Items

Älvsnabben, Muskö

Military test site, restricted area Maximum NEQ that can be detonated: 300 kg TNT Equivalent Depth: 40 m Flat sea bed No tide and flood

Performance tests Shock tests on items and ships (static and run-by) Non-contact impact tests

A Final Comment

"TDW Gesellschaft für verteidigungstechnische Wirksysteme mbH, the European leader for Terminal Effect & Warhead Systems, selected Bofors Test Center's test range in Karlskoga to perform Insensitive Munition (IM) Tests in autumn 2008. Bofors Test Center performed five different IM tests with test setups and conditions iaw acknowledged standards verifying the compliance of a new Warhead System. Within a noticeable short term BTC performed and analyzed the complete test campaign due to their high degree of professionalism, commitment and flexibility. Recently BTC prevailed in another competitive tendering process for a test campaign of a TDW heavy weight torpedo IM Warhead System."

DEFEATING THE IMPOSSIBLE SINCE 1886