

U.D.F. 7 x 50 blc U-boat sight for torpedo firing

By Anna and Terry Vacani

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Introduction of the binocular

In our collection is another heavy duty binocular for U-boat.

In: 'Militärische Ferngläser und Fernrohre in Heer, Luftwaffe und Marine' book, in chapter 17th - 'Glossary and translation of frequently occurring German terms', Dr Hans Seeger explains the term D.F – Doppel-Fernrohr does mean double telescope, binoculars. After a consultation with Dr Hans Seeger the letter 'U', Dr H. Seeger says: 'I think that UDF means U-Boot-Doppelfernrohr, maybe Unterwasser-Doppelfernrohr'.

The binocular is rare because it is complete: with hood and sights on the right tube. After the war not many were left complete. As far as today, we know only four another collectors, who have in their collections the complete U.D.F. 7 x 50.



The complete U.D.F. 7 x 50 from our collection; Copyright pictures Anna Vacani

Our binocular was completely and professionally serviced by Terry Vacani. As the production number indicated, the binocular was produced c.1943-1945 by Carl Zeiss Jena (blc).



The complete U.D.F. 7 x 50 from our collection; Copyright pictures Anna Vacani
The binocular was built up for U-boats. It was mounted on the surface attack torpedo aiming device.



The picture from "Signal" Magazine edition – H10 1942 page 15 (in our collection)



Picture 1; the picture was taken in April 1942, on U-373



Picture 2; the picture was taken in April 1942, on U-373



Picture 3; the picture was taken on U-402. On the top is seeing a metal shaft, which goes down to the conning tower and is connected to the attack control mechanical computer. Picture No 1; 2 and 3 are from book: "Wolfpack. U-boats at war 1939-1945", b y Philip Kaplan and Jack Currie.¹ The book is in our collection.

As it was explained in the book mentioned above; the conning tower (Turm) was the observation tower or platform of submarine; on a U-boat it contained steering controls; on type IX U-boats it contained the attack periscope eyepieces and torpedo deflection calculator.

Below the conning tower and bridge was located the control room over headed, between two periscopes, were a watertight hatch and a ladder giving access to the coning tower. Once a target had been sighted, in any firing solution could only be obtained by using one of the two available sighting devices: by periscope or by UZO – *Überwasserzieloptik*. As we read in “U-boat Type VII” by Robert C. Stern:

“The UZO was located toward the front of the external tower, between the hatch and the sky periscope. It was composed of two parts: a pair of large rangefinder binoculars (*among them UDF*); and a permanently mounted rotating bracket set in a ring marked off in degrees. The binoculars [...] were mounted on the rotating bracket only when actually needed for surface attack computation. They had to be taken inside the boat before diving because they weren’t waterproof at depth.

Both the attack periscope and the UZO were linked to a mechanical analog attack computer located at the after end in the conning tower. [] When the target was properly lined up, the necessary mechanical connections were made to the gyro compass and the UZO or attack periscope”²³

External features of the binocular

Let’s look at the outside construction of the binocular.



Both sides of our binocular; Copyright pictures Anna Vacani

As we can see in the right picture, it is a heavy brass body construction. Looking at the binocular it does not give an impression that it is very heavy, but the weight of the binocular including hoods is 6,3 kg.

In the right picture is visible the bending bar across the binoculars' body, with micrometer adjustment for eye - width of a user.

In the same picture, on the bending bar, are visible two holes to help locate the binocular in the right position to the torpedo aimer device - look at the pictures above binoculars. The binocular was fastened to the torpedo aimer and the target's bearing was then automatically transmitted below to the conning tower.

The hoods have the covers fitted to the tubes with hinges. When binocular is in used, the covers can be clipped back on the top of the hoods.



Picture of our binocular; Copyright pictures Anna Vacani

Other kinds of clips are integral with rubber eyecups. Both kinds of the clips are very well designed for using the binocular on the sea without any distraction.

The rubber eyecups shape excludes all distracting light from reflecting eyepiece. The eyecups have a unique element – the holes to prevent condensation.

The same design of rubber eyecups has the 7 x 50 H for signalling lamp.



Picture of our binocular; Copyright pictures Anna Vacani

The sights are made from plated steel varnished with shellac. The fore and aft sights are radiant painted.



Picture of our binocular; Copyright pictures Anna Vacani

The binocular was stored in a metal box suitably adapted to the binoculars and to the hoods. We do not have the box in our collection. It seems that box is rarer than binoculars. It is very hard to find one.

Dr Stephen Rohan kindly sent the pictures of the box from his collection for this article. Unfortunately, the previous owners had removed the wooden partitions from the lid of the box and from inside the box.



Copyrights picture Dr Stephen Rohan



Copyrights picture Dr Stephen Rohan

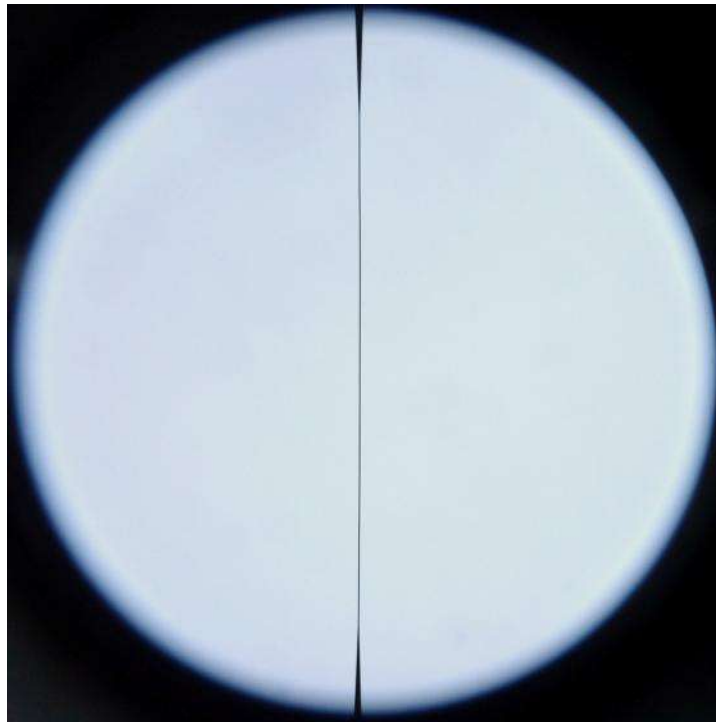
The box contains the only two binoculars and two pairs of hoods. On the inside of the box lid is placed the picture showing, in which way the contents of the container should be stored:



Copyrights picture Dr Stephen Rohan

Internal features of the binocular

The binoculars' reticule is round with a black horizontal line.



The reticule in our U.D.F. visible in the picture; Copyrights picture Anna Vacani

The illumination mechanism of reticule is exceptional.



The mechanism under the right hand top plate

The illumination is emitted from the ring, partly painted with a radiant paint.



The pictures from Dr Hans Seeger book (mentioned above) previously had taken by Terry Vacani

At that time in the German army were applied two illumination sources: incandescent lamps and radiant paint. The radiant paint is losing luminosity after fifteen to twenty years of manufacturing. The adjustment lever of the illumination mechanism is on the right plate of the binoculars.



The external lever of the illumination mechanism; Copyrights picture Anna Vacani

The word 'Hell' means bright, and 'Dunkel' – dark. The external mounted lever turns a shaft with a gear on the end that engages with another gear to rotate the painted ring.



The pictures from Dr Hans Seeger book (mentioned above) previously had taken by Terry Vacani

The optics is fully coated. The binocular has fixed focus. If it is out of focus it is not possible to adjust without dismantling of the binocular. This service is nearly impossible without some damages, as the body is sealed.

The prisms are Porro II.

A short post war history of the binocular

After the war U.D.F. binoculars were not popular, it was difficult to use as handheld binocular because of the weight. But it was often advertised, in shops catalogues as 'Zeiss

battleship model binoculars', in London by 'Headquarter and General Supplies Limited' and in Scotland' by 'Charles Frank Glasgow'.

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Picture of the catalogue from c.1955 from our collection

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Picture of the catalogue from c.1972 from our collection

At the present time it is very collectable binocular. It is very hard to find this binocular in a good condition and complete with the rain hoods.

We hope this short article will develop your knowledge about this binocular.

¹ Philip Kaplan and Jack Currie - "Wolfpack. U-boats at war 1939-1945", published by Naval Institute Press, Annapolis, Maryland in 1999.

³ Stern, Robert C. - "Type VII U-boats"; 1991 London; ISBN 1-85409-011-9;