

TECHNICAL UPDATE

DEEP SEA BINOCULAR MODELS AB10160/AB10510/AB10798 INSTRUCTIONS FOR USE OF INTERNAL RANGEFINDER AND DIRECTIONAL COMPASS

To use the rangefinder scale (Fig 1.), you will need to know either (1) the size or (2) the distance of the object. When the size of the object is known, the rangefinder scale indicates the distance to the object. When the distance to the object is known, the rangefinder scale tells you its size. Each mark on the vertical scale has a value of 5 MIL (1 MIL is equivalent to an angle that can determine an object one meter in height at a distance of 1000 meters.) Therefore, if a navigation chart gives the height of an object, by sighting on it and counting the number of MILs, you can determine how far away the object is. The horizontal scale should be aligned with the base of the object that you are sighting on. The increments on the horizontal scale can be used to determine the distance to the object if the width of the object is known and calculated using the formula below.



AB10510



AB10160



AB10798



Fig. 1 - Rangefinder Scale
 & Directional Compass



Fig. 2 - Distance Scale
 (Models AB10160 and AB10798 only.)

1. To measure the DISTANCE (object size must be determined):

$$\text{Distance} = \frac{100 \times \text{Object Size}}{\text{Rangefinder Scale Reading}}$$

2. To measure the SIZE (object distance must be determined):

$$\text{Object Size} = \frac{\text{Distance} \times \text{Rangefinder Scale Reading}}{100}$$

3. To determine the DISTANCE using the Distance Scale (object size must be determined) Fig. 2:

- Use the binoculars to focus on an object of which you know the size (for example 20m in height). Count the number of lines the object fills out on the scale (for example 4 lines).
- Turn the upper ring of the rangefinder to ANGLE; the arrow must point to 4.
- Now locate the size of the object (for example 20m) on the middle scale OBJECT SIZE.
- You can now read the distance at which the object is located on the lower scale DISTANCE (for example 500m distance).

4. USING THE DIRECTIONAL COMPASS - The compass scale is in one degree increments. It is aligned with the vertical range finding scale. North is represented as 0°, East as 90°, South as 180° and West as 270°. When using the compass, bear in mind the local variation between magnetic North and true North.