



Selecting a Marine Sextant

The first choice to make is between plastic or metal construction. Today's low-cost metal sextants offer high accuracy and ease of use. These reward the beginner's efforts and satisfy the professional's demands.

Plastic models are perfect for lifeboat provisioning, and for restricted budgets. They are also acceptable to some experts who don't mind making frequent adjustments. The following characteristics of sextants should be considered.

NEW OR USED?

Older sextants tend to have smaller mirrors and scopes which make them harder to use. Spare parts and maintenance are also more uncertain. Avoid discontinued models (ie. those not shown in this catalog), and those greatly out of date. Purchase only from someone you know and trust, or a reputable dealer. You will find that today's low cost metal sextants are very competitive with expensive used ones.

To avoid worries about bent arcs, serious navigators traditionally buy their sextants new. Common wisdom is that a used sextant is probably bent. Many navigators refuse to share their sextant, to ensure that its integrity is traceable. A used sextant lacking a case is very likely to have a bent arc.

ACCURACY

For all practical purposes, metal sextants are error free when compared to the many uncontrollable errors which may exist from such things as refraction, oblateness of the earth, and data tabulation. Generally, a minute of arc (one mile) is about the best anyone can hope to achieve. For these reasons, undue emphasis should not be placed on extreme accuracy guarantees. Plastic sextants commonly exhibit errors in excess of 5 minutes, even when great care is exercised. Although this is sufficient to make landfalls; precision navigation is difficult, and student progress may be retarded.

MIRROR SIZE

The size of the mirrors on sextants generally vary directly with the quality of the instrument. Large index and horizon mirrors are desirable because larger mirrors allow more movement of the sextant while taking a sight and lessen the possibility of losing the image as the body is brought down to the horizon.

WEIGHT

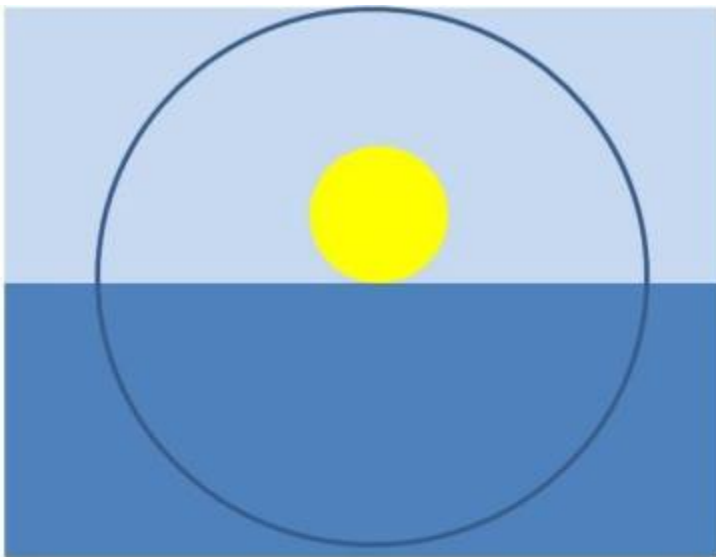
Sextants are available with their major metal parts made of either aluminum, bronze or brass. The alloys of these metals are well suitable for use at sea. Some people feel that the heavier weight of a bronze sextant provides greater steadiness and hence more accurate

readings, especially if it is windy. Others find that the lightweight models are less tiring to their wrist and arm and that the reduced fatigue gives better results. As the observer develops proficiency and speed in sight taking, fatigue becomes less of a factor. Lightweight plastic models can be difficult to use facing into a stiff wind because they tend to “flutter”.

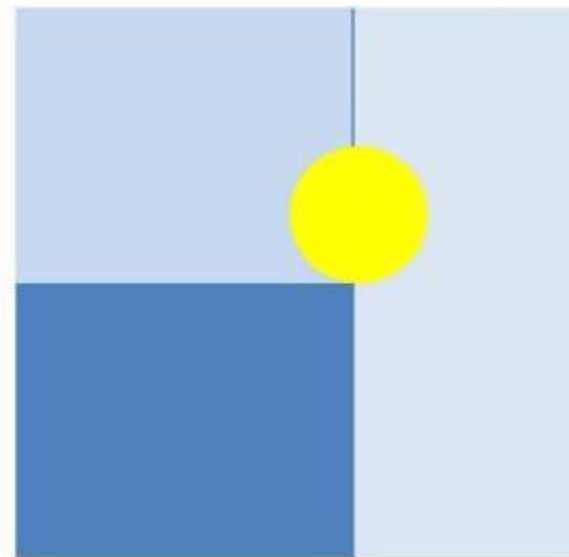
SCOPES

A 3.5 x 40 scope is a good choice for stars. The large objective 40mm lens admits a great deal of light. The 3.5 power magnification helps you find and maintain stars in view in both calm or pitching seaways. A 6×30 or 7×35 monocular of greater magnification is well suited for sun sights, or the greater heights of eye associated with large ships. The increased magnification allows the sun’s diameter to appear larger, and better defines a more distant horizon. This helps the navigator determine the point of tangency of the sun’s limb and the horizon. The increased magnification however makes finding and holding sights more difficult on a moving deck. A Sight Tube of zero magnification affords a wider field of view for rough weather, horizontal angles, and finding stars. If your sextant is to have only one scope, a 3.5x would be the logical choice for yacht sized vessels.

HORIZON MIRROR



**Whole Horizon
Mirror**



**Split Horizon
Mirror**

Many sextants have an option of either the traditional (half-silvered) horizon mirror or what is called a “whole horizon mirror”. With the traditional mirror, the horizon glass is divided vertically into two halves producing a “split image.” The half nearest the frame is a silvered mirror and the other half is clear glass. In some cases this clear glass is eliminated. A later development in sextant technology is the whole horizon mirror. Using specially coated optics, the whole horizon mirror superimposes both the horizon and the celestial body on

the entire mirror with no split image. This greatly simplifies “bringing down” the celestial body and makes it easier to hold the body in view. A draw back to this system is a very slight reduction in light transmission and reflection which may affect marginally lighted observations. Some feel these two aspects are a “trade off; that is, one can more quickly take observations with the whole horizon mirror and be finished before marginal conditions occur. In general, people on stable platforms such as large ships tend to favor the traditional horizon mirror while those on yachts tend to favor the whole horizon mirror.

ILLUMINATION

Sextant lighting is the least needed feature on a sextant, since a flashlight should normally be available in any event for recording observations.

VALUE

Contrary to the adage that you get what you pay for; global exchange rates, tariffs, and labor costs have combined to produce variations in value. In this monetary respect only, we would rate the ASTRA IIIB sextant highest, and the Tamaya sextants lowest in value for the metal sextants. The Davis Mark 15 is the best in value for the plastic models.

The Astra IIIB has been made for us in China since 1986 and it is produced in accordance with our specific quality guidelines. It has somewhat revolutionized celestial navigation because never has such a high quality, accurate metal sextant been available at such a low price. Over 26,000 sextants of this model have been sold in the US alone, far more than any other serious sextant. Its popularity has spread throughout the rest of the world as well, making it the most recognized (and supported) sextant worldwide.

Courtesy Celestaire Inc.