

On 16 June 1966 at assumed G.M.T. $10^{\text{h}} 5^{\text{m}} 0^{\text{s}}$ in latitude 41°N. , the true zenith distances of the Moon and Sun from observation are respectively $53^{\circ} 37' 8''$ and $75^{\circ} 01' 0''$ both east of the meridian.

By calculation, the longitude by Moon observation is $61^{\circ} 13' 3'' \text{W.}$ and by Sun observation $61^{\circ} 15' 0'' \text{W.}$, a difference of $1' 7''$, and it is apparent that the assumed G.M.T. is fast.

From the Nautical Almanac

$$\begin{aligned} A &= (-0'2 + 41'0 - 10'6) \\ &= 30'2 \end{aligned}$$

By the use of *ABC* or other azimuth tables, the parallactic angle *C* is found to be 52.6° . Whence,

$$\begin{aligned} B &= (-11 \sec 18^{\circ} 46' 7'' \cot 52^{\circ} 36') \\ &= -8'9 \end{aligned}$$

A realistic value of *B* ($-9'0$) is found using longitude correction tables based on the same formula.

Hence,

$$(30'2 - 8'9)t/60 = 1'7$$

and

$$t = 4.8 \text{ min. (nearly)}$$

so that

$$\begin{aligned} \text{G.M.T.} &= 10^{\text{h}} 5^{\text{m}} 0^{\text{s}} - 4^{\text{m}} 48^{\text{s}} \\ &= 10^{\text{h}} 0^{\text{m}} 12^{\text{s}} \end{aligned}$$

Azimuths are not required in the computation.

One (perhaps dubious) advantage of this over the conventional lunar distance method is that the Moon and second body may be observed without loss of accuracy when on or near the same (but remote from the observer's) meridian.

Visual Indication of Direction for Ships

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I was very interested in the recent correspondence regarding a direction indicator to be fitted to ships and while I note the experiments now being carried out by our Dutch friends there are several points which must be borne in mind.

In the first place, whilst sophisticated arrangements like illuminated arrows may be very satisfactory from the operational point of view, this sort of apparatus is just one more piece of expensive equipment that the shipowner must provide and I foresee reluctance on his part if it is intended that this should come into general use.

The synchronized light and sound signal has been used by a few vessels navigating the Thames and I think it is most valuable for the smaller craft, tugs and tows, &c., which use a busy river. However, for the larger ships I think an additional signal is desirable.

In the lower Thames, numerous oil wharves extend over a length of 4 miles and at night it is difficult to ascertain when a tanker is about to round for any particular berth as indeed it is difficult in a procession of ships to be sure which ship is blowing to round even if the synchronous light signal is used. I suggest that the larger ships could simply be fitted with a red and green light wired up through the normal Morse flashing key. (Many already have these lights fitted.)

About 2 min. before turning to port the red light (or the green if to starboard) should be switched on and given long flashes. Just before wheel-over the flashes should change to short flashes and extinguished once the ship has started swinging.

This signal may remind some of our older readers of the fixed light manœuvring signals used very successfully by columns of darkened warships and the emergency turn signals used by Commodores of Convoys during the war. Whether this signal should also be used in the open sea is another matter, but I suggest it for use in port approaches with the merit of simplicity and low cost.

The Impact of Radar on the Rule of the Road

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COMMANDER CLISSOLD's article (*Journal* 19, 109) like others before it seems to base the supposition that a new Rule is required on the idea that the collisions occur today because the present Rules are not good enough. I do not think that this contention is borne out by the evidence in cases of collision that come to Court; those are really the only ones on which conclusions should be based as very few people know what happened in the others. There is also a suggestion in his article that, before the days of radar, the Rules were adequate to prevent collisions happening. This is not so either; there were too many collisions in those days and they were caused by very much the same sort of behaviour as they are today. One should not, perhaps, think about the past success or failure of the Rules without remembering that it is not only the land which has become crowded in this century.

In 1900 there were in the world nearly 16,000 ships of over 100 g.r.t. with a total tonnage of nearly 29 million. In 1930 there were nearly 30,000 ships with a total tonnage of nearly 70 million, while in 1965 there were nearly 42,000 ships with a total tonnage of 160½ million. Compared with the situation at the turn of the century, there are now 2½ times as many ships and the average ship is more than twice as large.

I cannot think of any collision among the many which have been analysed in the