A day's work

As Frank has pointed out many times, you should consult primary sources if you want to find out how navigation was performed yesterday. A few years ago I come across Herman Korsström's Merenkulkutaulut / Nautiska tabeller, Helsinki 1922, a bilingual Finnish/Swedish nautical table. In the book two lose papers were found, one was an Inward Clearing Bill from July 1939, identifying the vessel, and the other measuring some 21 cm x 14 cm, containing the day's work onboard the iron barque *Alastor* of Hanko, in the North Sea on 21 November 1937.

Alastor was lunched in Sunderland in 1875, sailed worldwide in her prime days, and in the thirtieth shipped split-wood from Scandinavian ports to UK. In WW2 she was taken over by the British authorities and finally became a restaurant in Ramsgate. She was broken up in 1952, 77 years old.

The paper found contains a lot of information of a typical day's work to ascertain the noon position. Around 10 am local time 3 sights of the Sun's LL were taken. These observations were recorded elsewhere and not reduced until the noon latitude was obtained. The sums of the am chronometer times and sextant readings are however shown, and this makes it possible to guestimate the readings. One possible set, of many, is

Chronometer time	$9^h\ 43^m\ 33^s$	sextant reading	11° 57' 0"
	9 44 45		12 1 0
	9 46 1		12 5 30
	133 79		35 63.5

The noon latitude is brought back to the time of the am observation and used in reducing this. The resulting longitude is then brought forward to noon.

Some details are of particular interest. It seems that the last chronometer rating was done on 27 July at 0^h GMT, the error then was $2^m18.0^s$ slow and the rate $0.2^{s/d}$ gaining. This is indeed strange, as many opportunities for rating must have been at hand later. To rely on a close to four-month-old rating seems risky. But perhaps subsequent checks had shown that the rate was stable. Two log recordings are shown, presumably 24.0 at the time of the am sights and 33.2 at noon. However, 10 miles distance on a course made good of N13°E true have been used in the calculations (this is verified by a note on the back side of the paper). The index correction seems to be 3.8' for all observations. Corrections for dip, refraction, parallax and semidiameter are combined and taken from a total correction table, where a height of eye of 7 m is applied, indicating that the vessel was in ballast. Polar distance is used in the time sight reduction, but in order to be able to find cosecant of that quantity in a table that stops at 90°, the quantity 90°-|declination| is also calculated. The quantity 100[.]1 at the lower right-hand corner is the sum of the latitude minutes, divided by 2 it gives the mean latitude 54°50' used for transferring departure to difference in longitude.

A capital O is the Swedish equivalent for East. A superscript t is equivalent to hours. The quantity E is the excess of GHA Sun over GMT and taken from the Almanac.

All logarithms are carefully interpolated (although it seems overkill to use tenths in seconds of time and minutes of arc) and it looks like a ruler have been used to facilitate table reading and drawing straight lines at appropriate places.

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