

15. UNDER-KEEL ALLOWANCE (RELIANCE ON CHARTS AND PREDICTED TIDES). NEGATIVE SURGE WARNING SERVICE

Source: UK Hydrographic Office.

Former Notice 15/04 is cancelled. This is a repetition of the former notice.

Under-keel Allowance – reliance on charts and predicted tides

1. Prudent mariners navigate with adequate under-keel clearance at all times, making due allowances for all the factors that are likely to reduce the depth beneath their keels. To ensure an adequate under-keel clearance throughout a passage an Under-keel Allowance may be laid down by a competent authority or determined on board when planning the passage. The factors to be taken into account when determining this allowance are given in The Mariner's Handbook.
2. However, it is becoming increasingly apparent that economic pressures are causing mariners to navigate through certain areas using an inadequate Under-keel Allowance. Attention is therefore drawn below to the limitations of hydrographic surveys and tidal predictions in offshore areas.
3. Hydrographic surveys have inherent technical limitations in offshore areas due, partly, to uncertainties in the tidal reductions. Furthermore, in some areas the shape and hence the depth of the sea bed is constantly changing. Nautical charts can seldom, therefore, be absolutely reliable in their representation of depth and, if tidal predictions are applied to charted depths as if they were actual tidal levels, the uncertainties are clearly compounded. The limitations of hydrographic surveys are discussed at length in The Mariner's Handbook and factors affecting predicted tidal levels are described in the introduction to Admiralty Tide Tables (NPs 201, 202, 203 & 204).
4. The frequency and amplitude of negative surges, which should also be taken into account, are described in The Mariner's Handbook and in the introduction to Admiralty Tide Tables. Mariners are warned that they should always ensure adequate under-keel clearance to provide for the possibility of un-warned negative surges and other uncertainties.

Negative Surge Warning Service in the southern North Sea, the Thames Estuary and the Dover Strait

1. Since 1973, the Negative Surge Warning Service has operated to forecast appreciable falls in tidal levels due to meteorological effects in the Southern North Sea and Thames Estuary. In 1979, the service was extended to include the Dover Strait. Warnings are issued when it is estimated that tidal levels may be 1 metre (approx. 3 ft.) or more below the astronomically predicted levels.
2. Warnings are normally issued 6 to 12 hours ahead of the event and are given in broad terms, e.g. "Tides expected to be appreciably below predictions in the southern North Sea and Thames Estuary during the afternoon", "Tides expected to be appreciably below predictions in the Dover Strait around midnight", etc. From 1st January 1994 an indication of the expected maximum reduction in levels has been included in the warnings, e.g. "Maximum reduction in levels expected to be around one metre", "Maximum reduction in levels expected to be between one and a half and two metres" etc.
3. Where a risk of levels falling below chart datum is foreseen, suitable comment will be made in the warning.
4. Current forecasting techniques often allow the occurrence of a negative surge to be seen up to about 30 hours ahead. In these cases, an advanced information message may be issued in the form: "Advanced information on possible Negative Surge. Forecast conditions are such that a Negative Surge is considered likely to occur..... (Location/time-frame)..... Formal warnings can be expected to follow later."
5. Negative Surge warnings are transmitted from the Coastguard Stations appropriate to the sea regions concerned i.e. Southern North Sea, Thames Estuary and Dover Strait, Regions HOTEL, INDIA, JULIETT and KILO. Warnings are broadcast on receipt and then at each hour including the routine broadcasts. Routine schedules are described in ALRS Vol. 3, Part 1, where full details of the sea region areas, broadcast times, frequencies and other relevant information will be found.
6. Negative Surge information is also included in the half hourly broadcasts of the Channel Navigation Information Service; for further details see ALRS Vol. 6, Part 1.