THE DOWNS

A Common Market Place?

A Unique Safe Anchorage and
International Freeport near the Strait of Dover

A PROPOSAL BY
SIR BRUCE WHITE, WOLFE BARRY & PARTNERS: CONSULTING ENGINEERS

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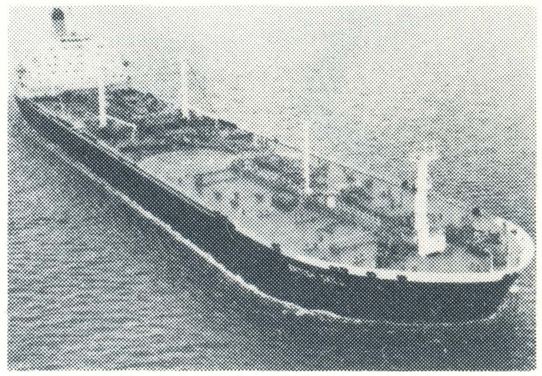
INTRODUCTION

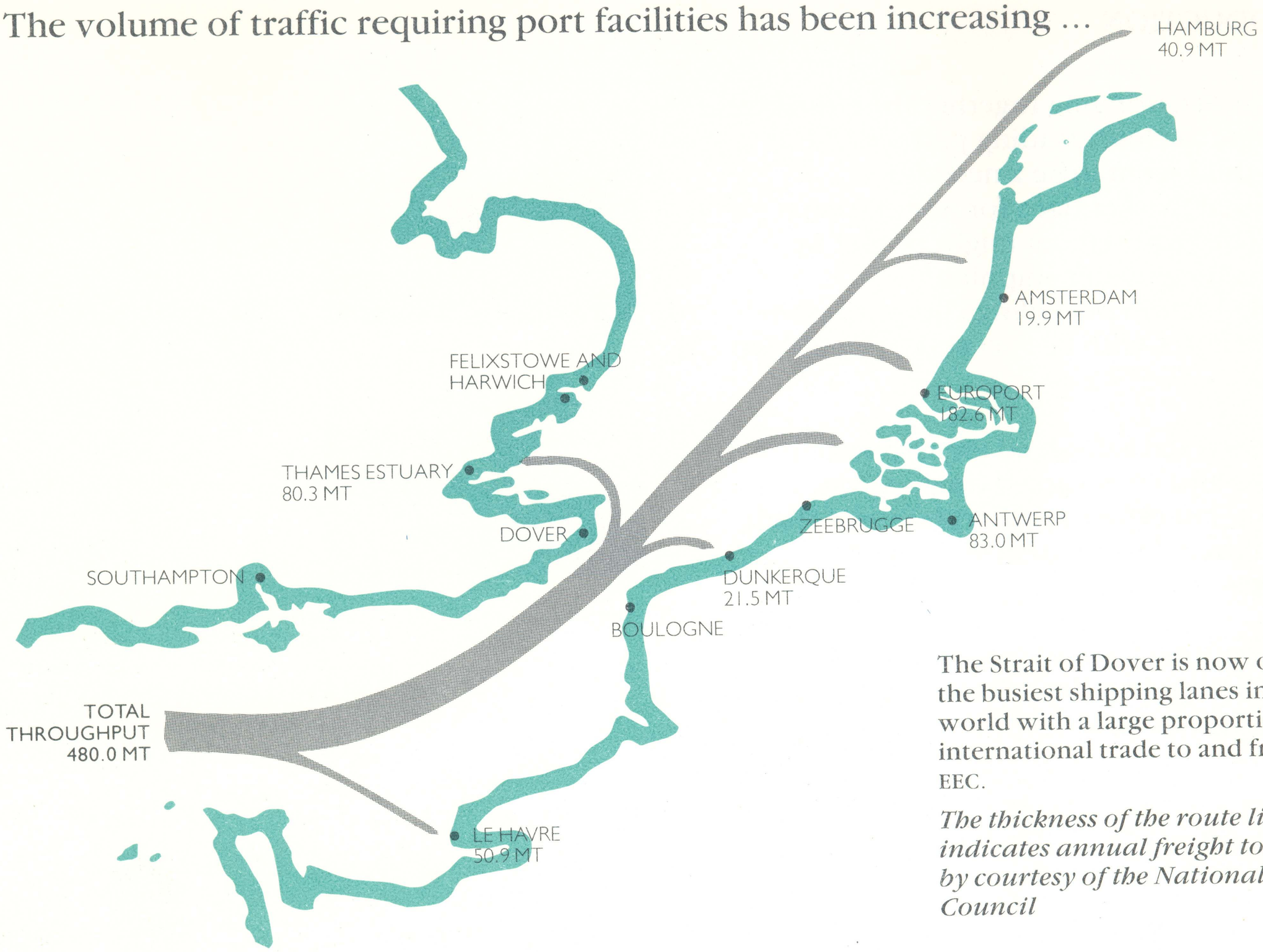
With the EEC bringing together the countries of Europe as closer trading partners there now would seem to be a need for a centralised marketplace for international trade. The requirement might be met by sheltered deepwater shipping accommodation providing cheap transhipment facilities with fast access to population centres.



Some ports have dredged their approach channels and constructed deep water facilities, but even so the largest ships afloat are still barred from many European countries.

UK Consulting Engineers SIR BRUCE WHITE, WOLFE BARRY AND PARTNERS offer a solution.

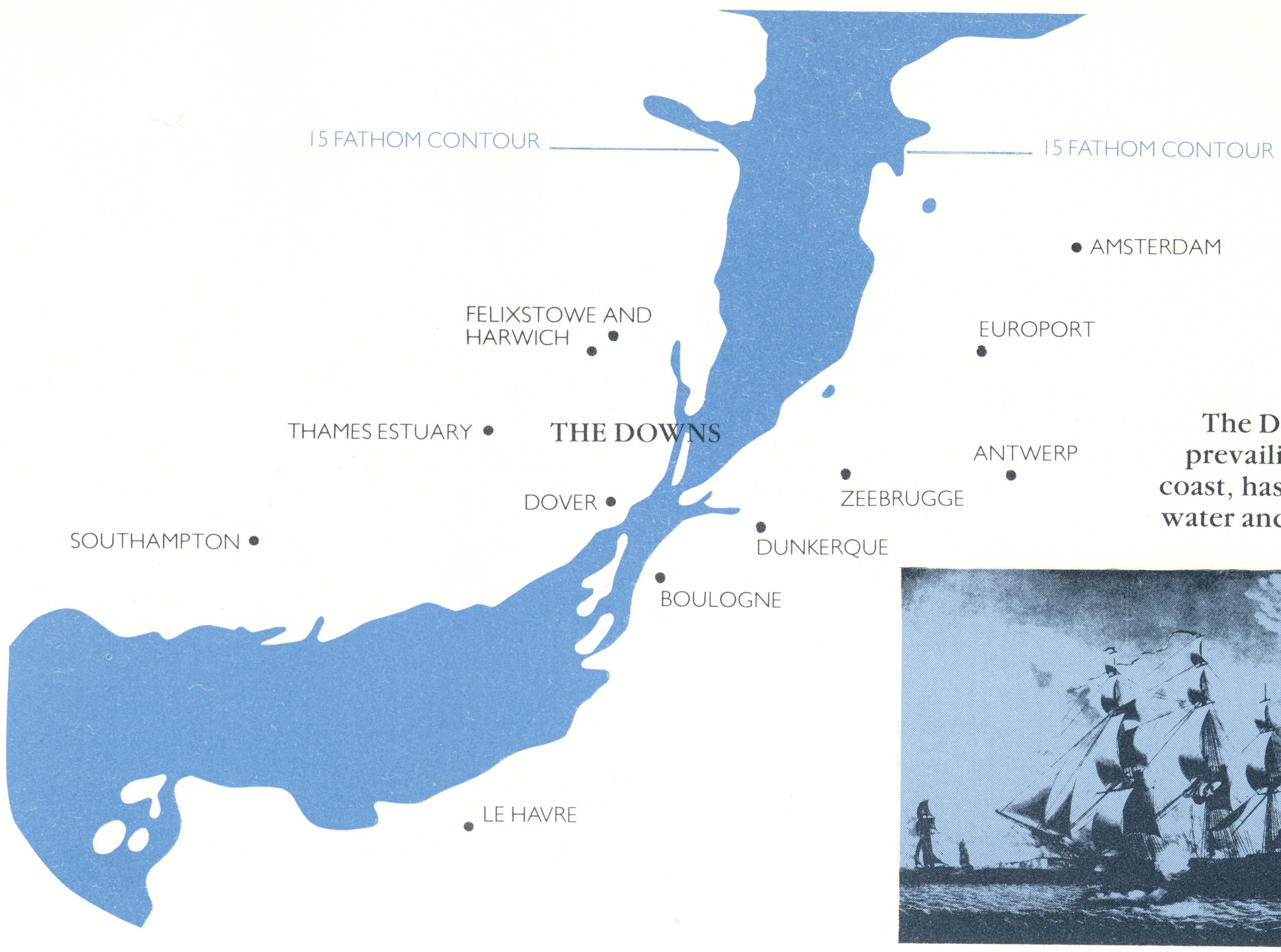
The volume of traffic requiring port facilities has been increasing ...



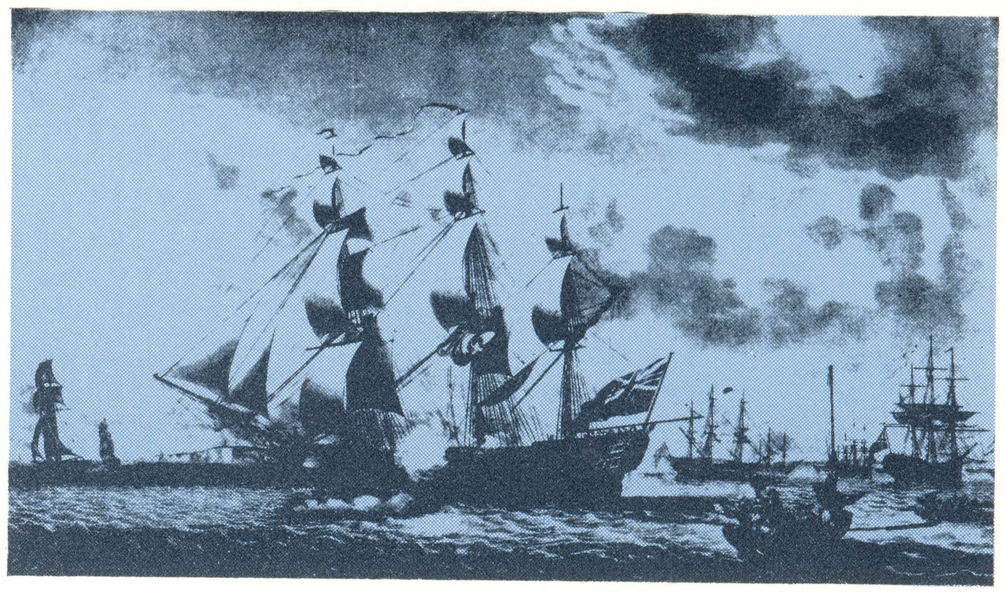
The Strait of Dover is now one of the busiest shipping lanes in the world with a large proportion of international trade to and from the EEC.

The thickness of the route line indicates annual freight tonnage by courtesy of the National Ports Council

...and centralised deepwater accommodation is needed

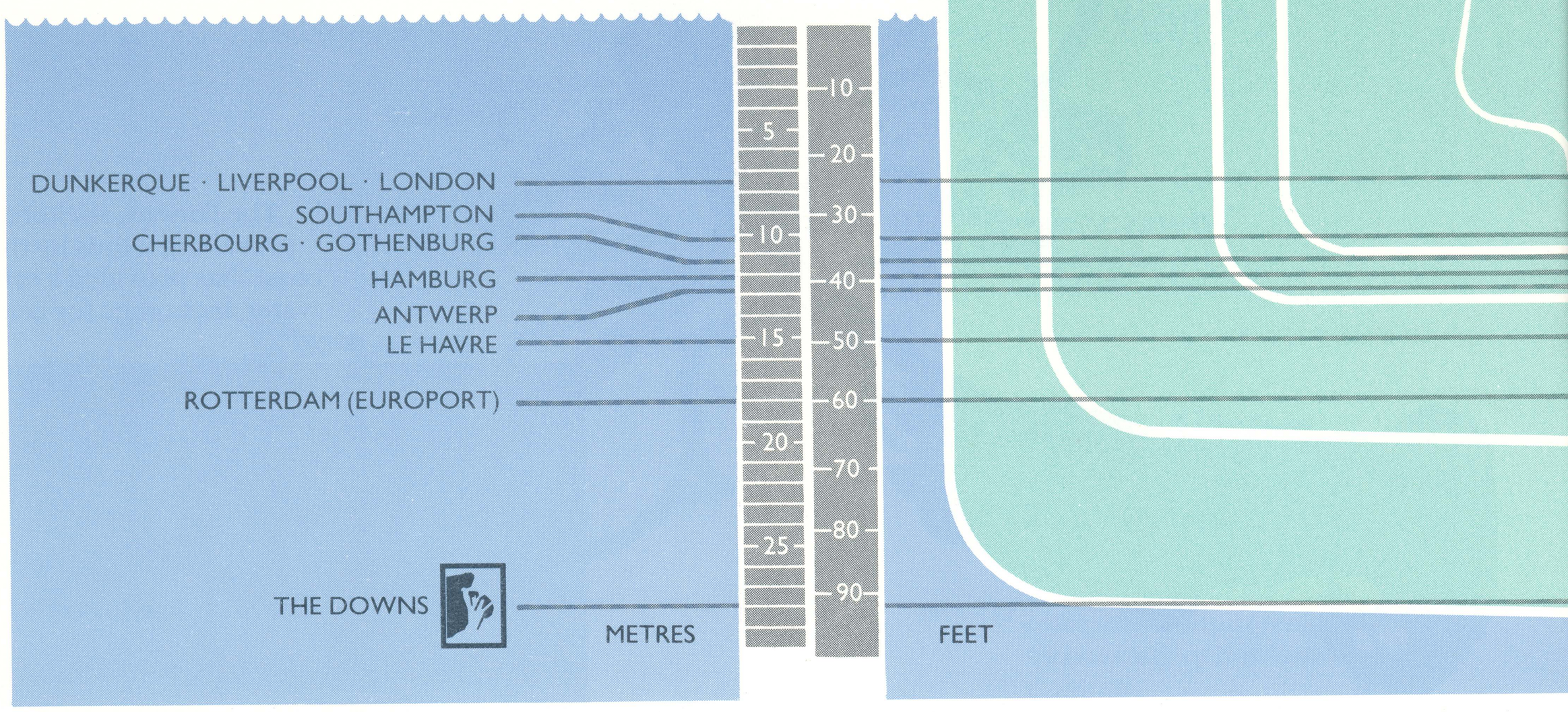


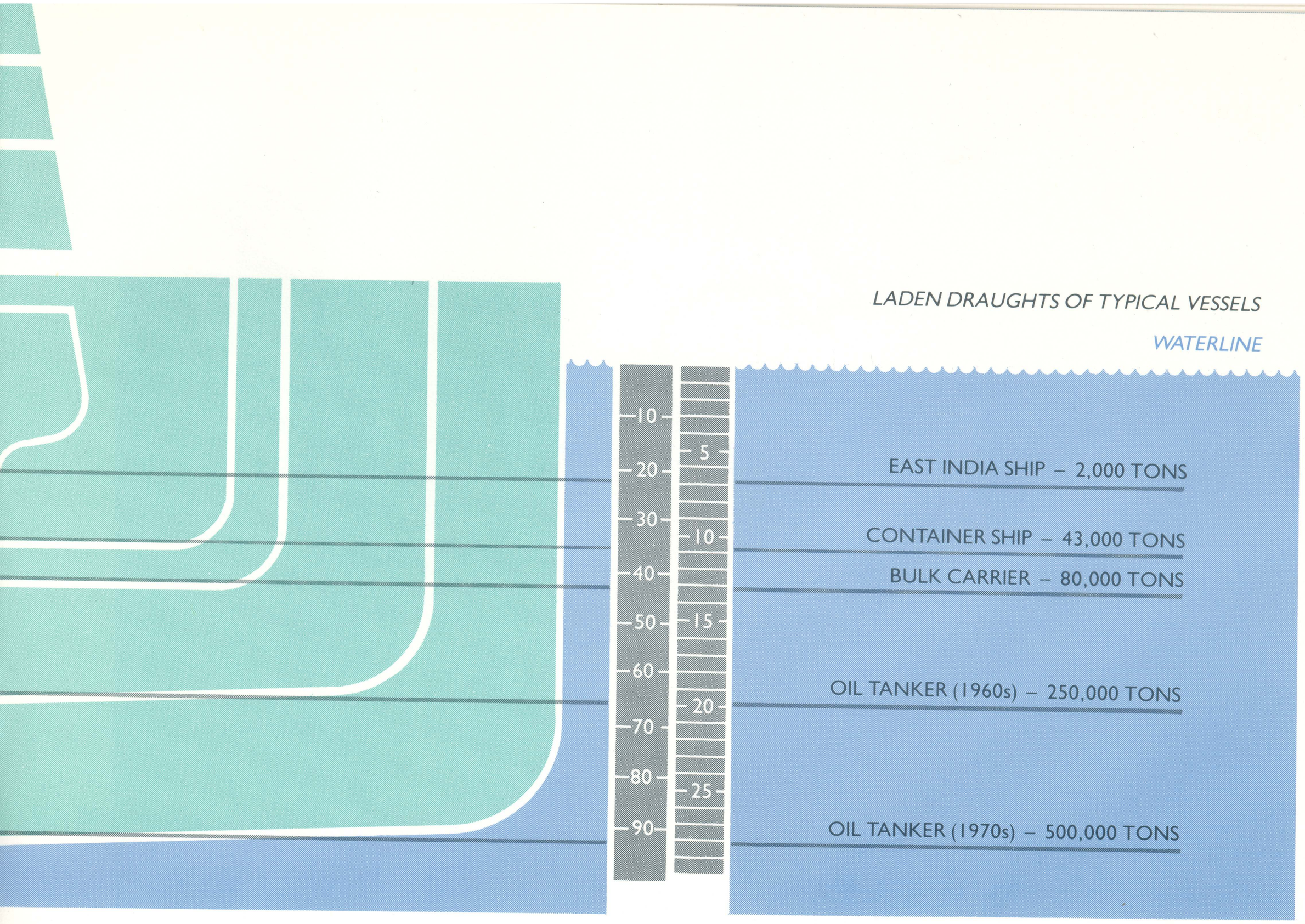
The Downs, sheltered from prevailing winds by the Kent coast, has provided a safe deep water anchorage for centuries.



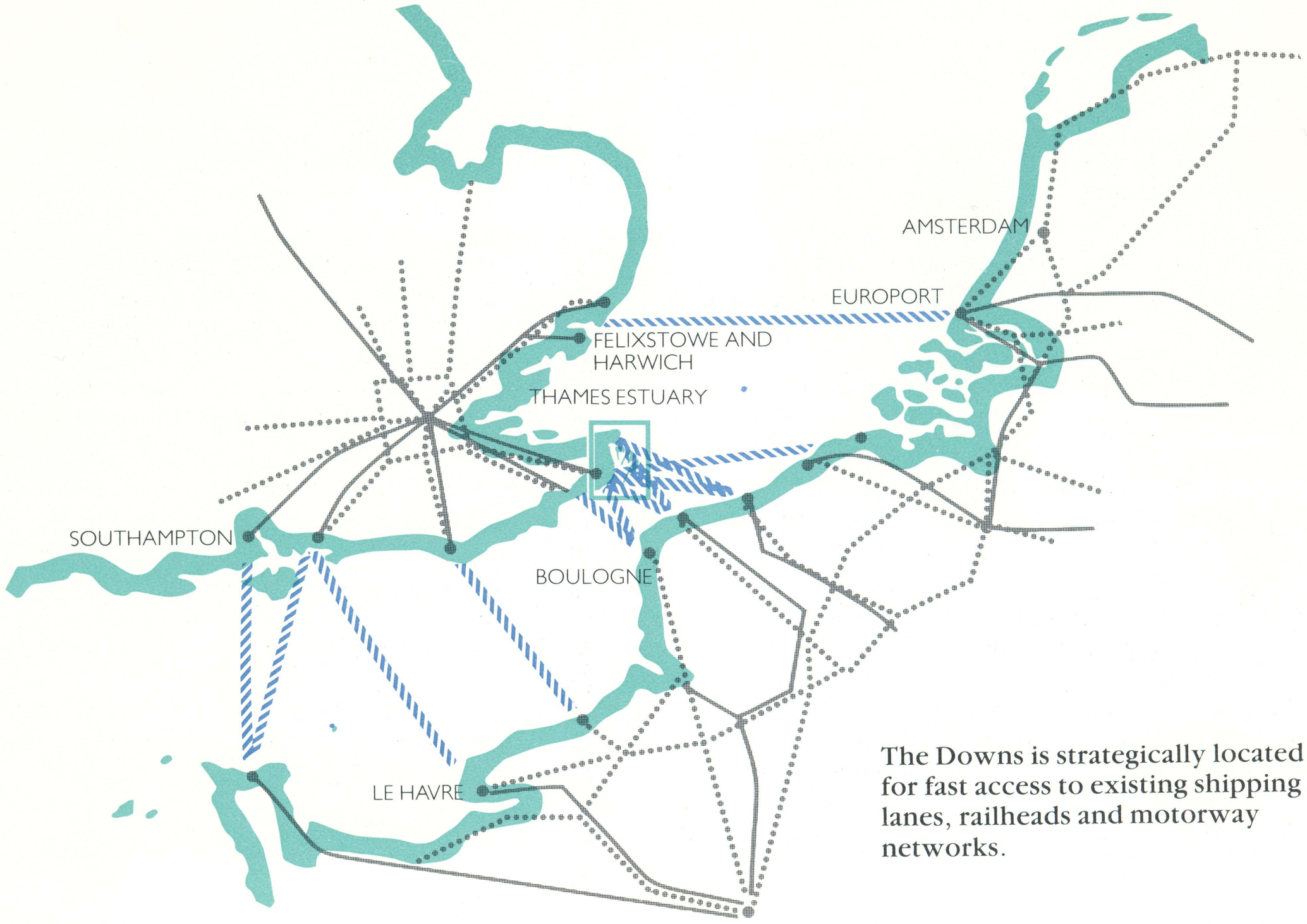
The Downs affords excellent accommodation, depth of water and shelter for large ships...

AVAILABLE DEPTHS IN MAJOR EUROPEAN PORTS AT LOW WATER




LADEN DRAUGHTS OF TYPICAL VESSELS
WATERLINE
10
20
30
40
50
60
70
80
90
5
10
15
20
25
EAST INDIA SHIP – 2,000 TONS
CONTAINER SHIP – 43,000 TONS
BULK CARRIER – 80,000 TONS
OIL TANKER (1960s) – 250,000 TONS
OIL TANKER (1970s) – 500,000 TONS

...and is at the hub of international trade in Europe

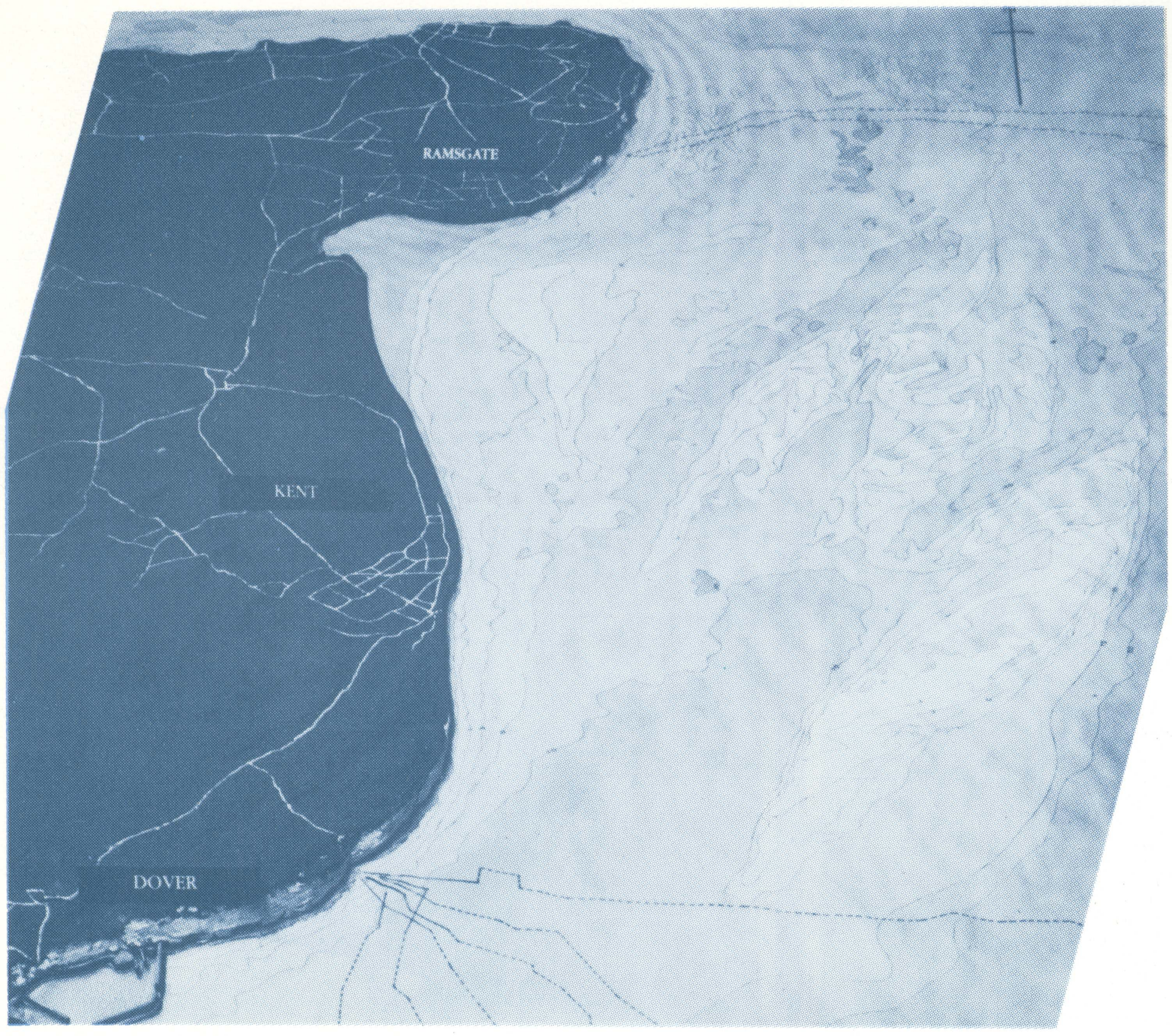


The Downs is strategically located for fast access to existing shipping lanes, railheads and motorway networks.

The proposal fulfils its brief...

Basic requirements of deep water ports	The DOWNS fulfils the requirements
• Ready access to deep water shipping routes	• Lies adjacent to one of the world's busiest shipping lanes
• Shelter from heavy seas and bad weather	• Sited on England's traditional anchorage, protected by the Kent land mass and the Goodwin Sands
• Deep water anchorage with room for vessels to swing	• 7 square kilometres available with up to 20 metres existing depth at low water
• Ready overland connections with industrially developed and populated areas	• Near the population centre of Europe
• Convenient for transhipment to other means of transportation	• Facilities available for transfer to other vessels (including ferries), road, rail and air cargo
• Access to international airport facilities including supersonic transportation	• Runways available with over sea take-off and landing

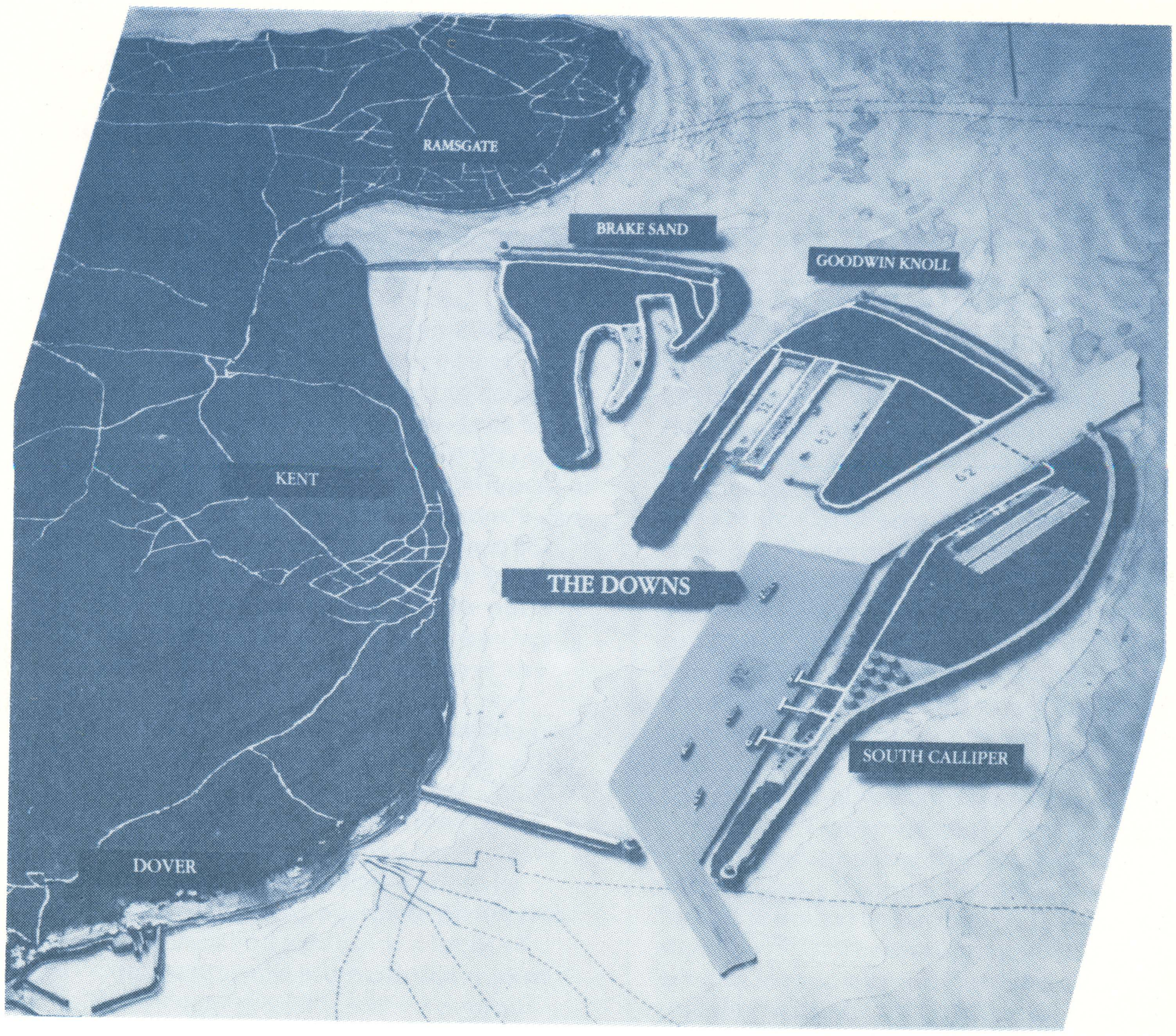
The site looks like this at present,



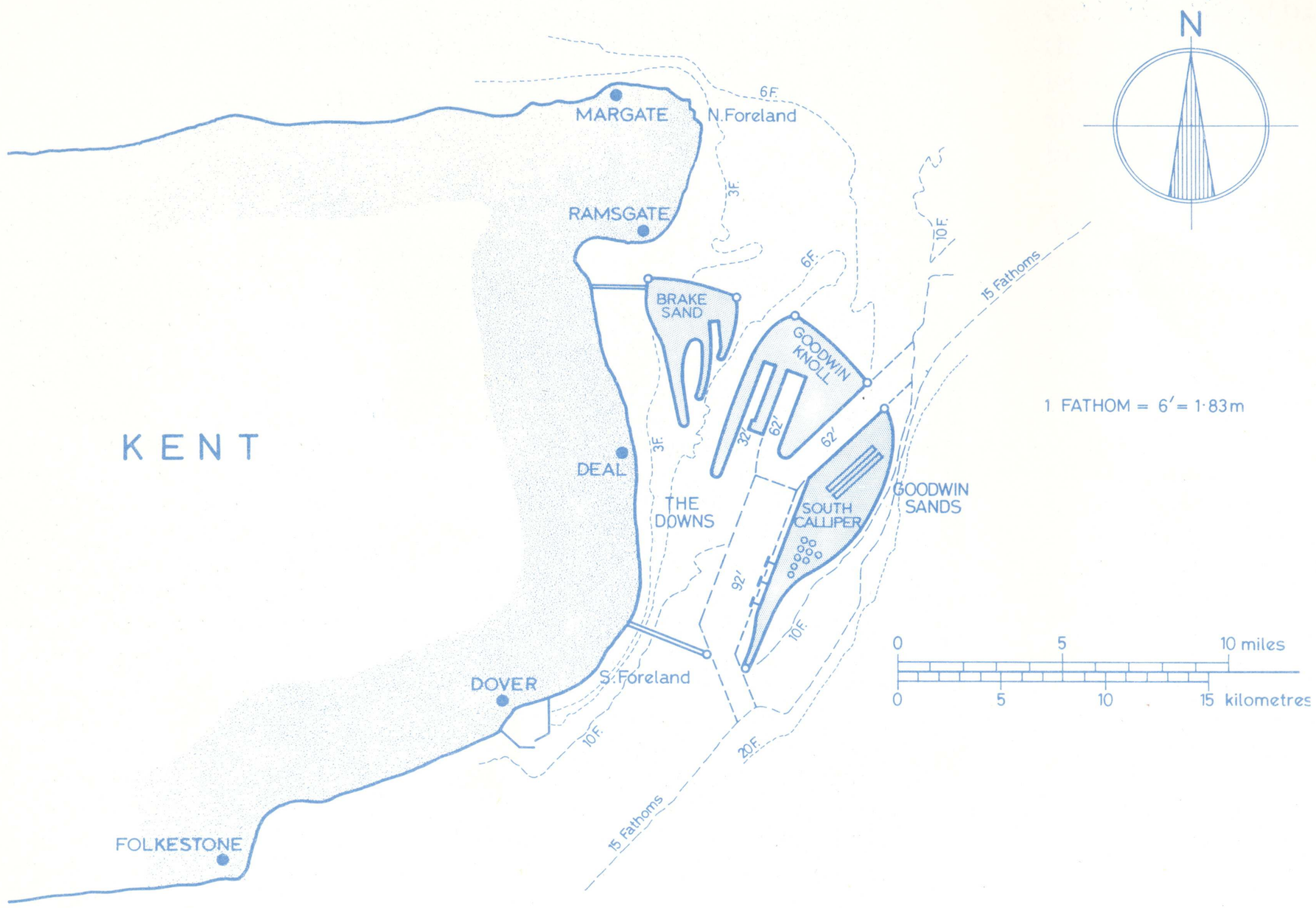
The proposal is based on converting sand banks off the Kent coast into three islands offering naturally sheltered deepwater facilities.

The nearest islands, used by yachts and fishing vessels, would be attractively landscaped with viewing positions of the scenic coastline. Without excessive dredging the largest vessels afloat would have easy access to the furthest island with its efficient facilities for transhipment to and from smaller vessels or the direct road, rail and air links.

could look like this,



… and the proposal works like this



A NATIONAL ROADSTEAD

from an article published in Dock and Harbour Authority, August 1969

This suggestion for a roadstead was inspired by the remarkable situation developing in north-west Europe whereby increasing numbers of ships are being constructed which are too large to enter the ports of Europe if fully loaded. To redress this situation very considerable sums of money have been spent on various European ports to accommodate large ships, prominent among which are Hamburg, Antwerp, Rotterdam and Le Havre. However, it seems unlikely that any of these ports can be improved sufficiently to meet the 90 ft depth requirements of future large carriers without embarking upon capital and maintenance dredging programmes well beyond economically justifiable limits of expenditure.

There is the anomaly of the Arendal ship factory at Gothenburg in Sweden, mass producing universal bulk carriers of over 200,000 tons deadweight capacity at the rate of one every fifty days which ships, if fully loaded, would be barred entry to most European ports. Other shipyards are, of course, producing even larger vessels.

Clearly the financial benefits to owners or charterers of very large vessels are sufficiently great to cause disregard of port limitations. Lack of draught in port entrances is overcome by partial discharge and transhipment at sea, an operation which apparently can be carried on in quite windy weather and is disturbed only by severe swell.

It is quite irrational for the ports of Europe to compete one with another and by endeavouring to improve the depths of their approaches to incur expenditure which, if recovered in port charges, would make them unattractive to shipping. Substantial benefits to all north-western trading nations could accrue if a single international transhipment roadstead were to be established giving adequate protection from swell and located at a focus of Continental and international trading routes near the 90 ft seabed contour.

A study of trade routes, ships' tonnages and traffic intensity could find the theoretically ideal location for such a transhipment area, but the engineering problem of constructing protection against swell could be an important factor in the choice of location.

It seems logical that the ideal location should not be far removed from the Pas-de-Calais area, through which nearly all European sea traffic passes, and where the required depth of water already exists. Such a location is to be found in Trinity Bay north east of Dover harbour, where good protection from the prevailing west wind exists together with partial natural protection from the east.

A proposal was put before the Ministry of Transport on the 8th March, 1968, suggesting that this area might be adopted for a National Roadstead as a logical terminus for deep sea supercarriers. The diagram shows the general location of the Roadstead together with the 90 ft contour.

Goodwin Sands

Part of the proposed construction, namely the breakwaters on the Goodwin Sands, might be held to lie outside territorial limits. This has led to the suggestion that the roadstead might be operated as an international free port serving most of Europe.

The function of the port would be to receive the giant ocean carriers in a safe sheltered anchorage and provide such facilities as are necessary to tranship or unload ashore cargoes bound for Europe. Export cargoes, previously assembled, might then be loaded and the ship sent off on its return voyage without delay. The import cargoes would then be distributed to European ports in vessels of the appropriate size which, on their return to the international port, would carry export goods to assemble further cargoes for giant carriers.

The form of the roadstead would obviously depend on the facilities required, the most important of which would be protection from swell. This would be achieved by the construction of breakwaters devised in a manner which would cause their strength to be further reinforced by the natural accumulation of sand. In essence, the breakwaters would consist of suitably sized and graded rubble terminated by roundheads constructed in the form of sand filled steel sheet piling.

The operation of ship to ship transfer of cargo would take place in the shelter of these breakwaters and allow the continuous loading or discharging of large seagoing vessels, from or to, coasting ships.

The operation of cargo transhipment, although economical in handling costs, requires perfect timing of the arrival and departure of both sea-going vessels and coasters. To offset this difficulty in organisation it is proposed to provide, by dredging and reclamation in shallow water, large areas of land where cargoes might be stockpiled in the absence of receiving vessels. It is expected that the availability of such stock-piles might stimulate industries dependent upon the stock materials so that a modern quasi-industrial port complex could grow progressively with the reclamation.

The project has been costed, approximately, in advance of detailed investigation and hydraulic model study. The breakwaters might be built for about £20* million and land reclamation, which would be companion to an enlargement by dredging of the deep water area, would cost approximately £10† million per square mile. The reclaimed land could be leased to private enterprise as a means of loan servicing.

It is suggested that vessels taking shelter and transferring cargo from ship to ship should pay reduced harbour dues and that the use of land or transfer of cargo to and from the land should be the major source of income. It is further suggested that the work of construction be financed on an international user basis in which the UK might play a leading part.

* 1985 equivalent: £60 million

† 1985 equivalent: £11.5 million per square kilometre