

BERTHING AND HANDLING OF HOVERFERRIES

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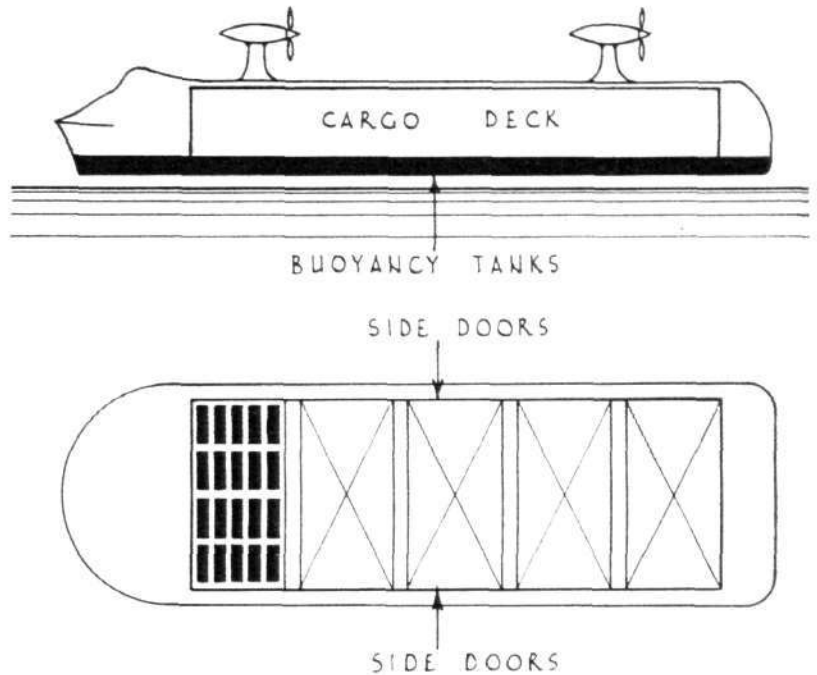


Fig 1 Typical hovercraft layout, showing unobstructed cargo deck and separate sealed buoyancy tanks

ULYSSES HAD NO handling problems with his "long black ships," which could be hauled out on any protected, gently sloping beach. But since his day ships have become larger and loading equipment more complicated, so that today harbour construction costs are reckoned in millions of pounds. After two thousand years of port development it seems that Cockerell's invention will return the traveller to the golden age of the Iliad, but without its interruptions.

To appreciate the extent of this revolution it must be understood that the hovercraft differs in three fundamental ways from conventional ferries:

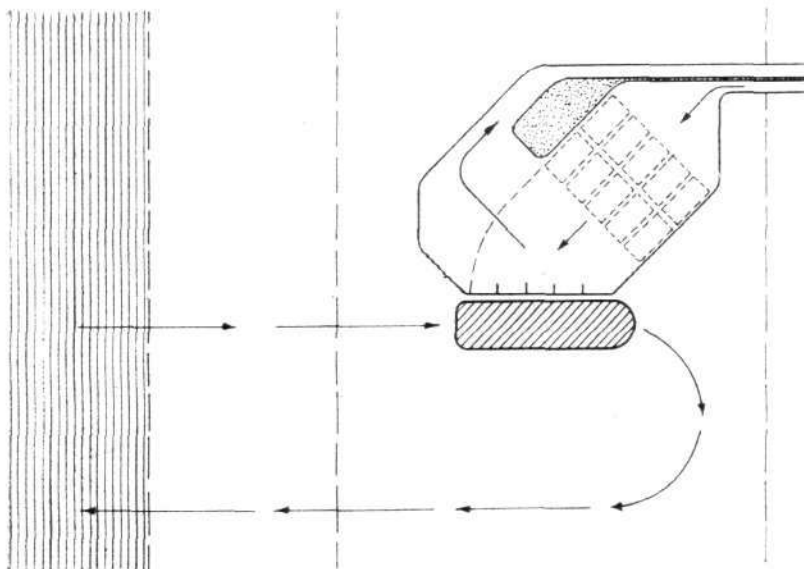
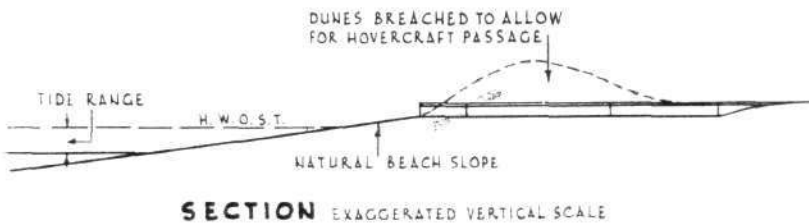
(a) It is well known that the supporting air cushion enables the hovercraft to be propelled economically at much higher speeds. But a recent experience in which a small hovercraft was driven at 20kt straight into a rising gale with steep 6ft seas shows that the cushion also contributes to a marked improvement in sea-keeping ability.

(b) The hovercraft is a low-density vessel; that is, one with small weight spread over a large area. It is therefore better suited to carry a low-density cargo of cars and passengers than the conventional high-density displacement vessel. As this cargo will be loaded onto a single beamy deck it will be more easily handled than in a narrow multi-decked hull. As this deck is always above wave level, side loading doors can be provided.

(c) The craft can operate in shallow water, the amphibious type even being driven ashore.

Two principal types of hovercraft have so far been built. The first are the peripheral air jet vehicles built by Westland and Vickers, fast amphibious craft. The second are the rigid-sidewall vessels built by Denny, which are non-amphibious and slower and are consequently cheaper to build but have lower work-capacity. The design of commercial ferries will probably introduce intermediate types with flexible sidewalls that will combine the amphibian quality with moderate speed and cost.

Fig 2 Layout of hovercraft berth on open beach



Amphibious Craft Let us consider first the operation of a 300-ton amphibious ferry, such as that illustrated in Fig 1, carrying 100 cars between ideal beach sites. It seems that this craft, operating at about 50kt, would have sufficient power to enable it to climb the gently sloping beaches characteristic of reasonably stable coastlines. Shingle beaches, which are generally much steeper, may be unsuitable because their porosity is such as to cause considerable loss of cushion pressure.

From the behaviour of craft so far tested it seems probable that they will be capable of landing even through heavy breaking surf, so that little shelter to the port will be needed. But sand beaches are a mobile

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