



THE PILOT

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SOUTHAMPTON PILOT STATION



The Southampton Pilot Station and Port Signal and Radar Station was officially opened on Friday, 7th July, 1972, by Mr R F Pugh, Chairman of Southampton Local Board, British Transport Docks Board, after an address by Mr D A Stringer, Port Director, and Captain D S Tibbits, DSC, RN (Rtd), Trinity House.

UNITED KINGDOM PILOTS' ASSOCIATION
20 Peel Street, London, W.8

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SOUTHAMPTON PILOT STATION

K Grant (Southampton)

The six storey structure shown on the front page is sited at the seaward extremity of the Eastern Docks, commanding a view of Southampton Water and the Docks Area. The building provides accommodation for the Dock and Harbour Master and his staff, the sub-Commissioners of Pilotage, Isle of Wight District, and Pilots.

The former Southampton Pilot Station was situated at Hythe. However, with the expansion of the Port it was foreseen that closer liaison with Port Operations—incorporating radar and communications systems—was necessary to maintain future efficiency; also with the object that the Southampton-based Pilot Station would eventually command and direct all pilotage operations for the Isle of Wight District.

Construction

The structure—23 metres by 24 metres and 23 metres high—is of in-situ reinforced concrete throughout. The concrete wall panels on the external elevations were cast in grooved shuttering, and have crests rough hammered. The special glazing on the Operations Floor is inclined to eliminate reflections, and all windows throughout the building are double glazed and fully draught sealed. The main external stair shaft is continued as a triangular feature by a galvanised steel lattice mast rising to 64 metres. This carries the dish aerials for the microwave link, with unmanned radar scanners and radio stations, daylight signals etc. The building is well served with a main and service staircase and lift.

Accommodation

Trinity House workshops and stores are located on the ground floor, whilst on the first are located the Pilots' spacious saloon, a well equipped galley, launch crew cabins, messroom, bathrooms etc. On the second floor are five Pilots' cabins, shower, bathroom and usual offices—all well equipped. The Pilots' main administration

office and the Board Room for the sub-Commissioners are located on the second floor.

On the third and fourth floors are sited the Dock and Harbour Master's Department, electronic radar equipment, microwave links, radio etc., with servicing facilities.

The fifth floor provides accommodation for the Duty Pilot and Chief Operations Officer, to enable close consultation. The darkened semi-circular Operations Room accommodates consoles for six radar displays, chart tables, and communication facilities for ships, police and fire services.

Radar Installations

Decca Radar have equipped two unmanned radar stations—at Hythe and Calshot—from which data is transmitted by microwave link to six 16 in. displays in the Operations Room. The six displays installed by Decca are console mounted, and all the main electronic units have been duplicated for maximum system availability.

The Decca *Computer Assisted Measurement System* has been provided for all six displays, and the newly-developed *Deccaspot* facility is available on all pictures received from Calshot. The Honeywell computer enables rapid and accurate measurements to be made of any point, such as a ship's position, relative to any other on the display. *Deccaspot* is used to delineate the centre of the navigation channel from Southampton Docks to Portsmouth Forts and East Lepe in the west.

VHF Radio Network

GEC-Marconi's sophisticated VHF and UHF R/T equipment provides fast and positive access to eleven radio circuits via specially designed channel selectors positioned beside the radar displays. Each

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ADVANCES IN MARINE NAVIGATIONAL AIDS

A Conference held by the Institution of Electrical Engineers in London, 25th-27th July, 1972.

The subject was clearly one of interest to pilots and UKPA was officially represented by Mr John Bain (London Channel). Indeed, there was so much ground to cover in three days that eleven sessions and 54 papers proved heavy going for an audience which, nevertheless, maintained a stimulating activity during all the discussion sessions which in turn proved too short.

The conference was organised by the Electronics Division of the IEE and was jointly sponsored by the Institution of Electronic and Radio Engineers in conjunction with the Institute of Electrical and Electronics Engineers, the Royal Institute of Navigation, the Istituto di Navigazione, the Institut Français de Navigation and the Deutsche Gesellschaft für Ortung und Navigation. Heading the impressive work of the small band of organisers of the actual proceedings was Dr D J Kiely who also chaired the meeting on the first day

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message is tape recorded and timed so that a complete log is automatically maintained.

During 1971 there were, on average, over 133 shipping movements per day in the Port of Southampton. The Pilots are confident that the organisation within the Communications Centre can administer direct movements in excess of this total in conditions of clear or reduced visibility, and look forward to a future of successful operation.

The Pilots of the District would be happy to extend hospitality to any visiting member of the UKPA at the Communications Centre should they be in the District.

and most ably contributed to the success of the conference.

To practising navigators the most valuable papers were

Cost Benefit and Related Factors—a Ship-Owner's Point of View

Captain Maybourn (BP)

Computer-Stabilized Magnetic Compass

W E Burt

The Risk of Error in CPA

A Harrison (Kelvin Hughes)

as well as an admirable opening address by G O'B Harding from the Chamber of Shipping, who stressed the need for simplicity and reliability and the importance of human as well as electronic factors.

Captain Maybourn's excellent paper reflected many of the topics of Mr Harding's address in giving a cool appraisal of what amounts to a communications revolution. Apart from cost benefit, he stressed the practical wisdom of selecting the right course and following it.

Mr Burt's paper described a compass which could have significance for small craft: it consisted of a magnetic sensor mounted on the mast from which, with the aid of a simple computing device, the helmsman was presented with what appeared to be a gyro-repeater.

The magnitude of the possible errors introduced in the radar screen in *Closest Point of Approach* techniques due to ship movements were discussed in Mr Harrison's paper. They were of alarming proportions in relation to estuarial and channel pilotage, reaching as much as one mile in extreme circumstances.

The remainder of the papers presented from the marine aspect suffered from either poor treatment or poor delivery, and in some cases both. The value of many of the engineering papers might forgiveably be judged from the sleep they induced amongst the electronic engineers. It was established in the course of discussion that the engineers' main aim for the conference was to exchange views with those most concerned with present-day navigating problems, the practising seamen. An open question to the audience revealed only three in that category, a ferry captain from Finland, a pilot from Genoa and our own from UK. It must be a common occurrence for manufacturers in many fields to find the views of the ultimate user to be elusive and time consuming to gather: those whose duty and livelihood keep them in relative inaccessibility at sea cannot easily spare the time to attend a

committee or a conference in London. If one could afford from time to time to ignore the main demands of life, perhaps the main demands could be achieved more safely and easily; at least, this conference would have benefited from more master mariners taking part in the discussion.

As it was, our representative felt honour bound to uphold the practical seaman's point of view, even to the point of antagonism from some portions of the audience. It must be true that whatever relevant opinion and experience can be contributed, it is of value. In matters of safety at sea, and the ports and estuaries provide in many respects the most danger-prone portions of a voyage, there can be no case for omitting the views of those in current practice or for omitting pilot representation on port advisory bodies.

Indeed, this conference highlighted the revolutionary changes in navigational and communication techniques concurrent with unprecedented traffic concentration in many approach lanes. From this it follows that sea-going experience of, say, five years ago is rapidly becoming out of touch with present-day hazards.

OIL TANKERS

Recommendations to improve the conditions under which Tankers are navigated in pilotage waters and for the provision of better port facilities were agreed at the 1965 Annual General Meeting of EMPA. Since 1965, the introduction of Very Large Crude Carriers (V.L.C.C.'s) has presented new problems in pilotage waters and in consequence EMPA, at their Annual General Meeting in Italy this year, agreed to amend the 1965 Recommendations in the light of recent developments and to introduce a new section on very large tankers.

ANNUAL GENERAL MEETING

EUROPEAN MARITIME PILOTS' ASSOCIATION

Held in Tirrenia, Italy, on May 18th and 19th, 1972

The following was agreed by Pilot-Delegates representing Belgium, France, Germany, Great Britain, Italy, The Netherlands, Portugal, Spain and Sweden.

1. All Tankers should be required to:—

- (a) Comply with a "Port Manning Scale" which should be designed to ensure an adequacy of deck personnel for the purposes of mooring, unmooring, securing tugs, etc., as in so many cases at the present time there appears to be a continuing trend towards undermanning relative to the urgency associated with these operations, despite the introduction of automatic devices. A vessel not complying with the Manning Scale should be required to embark an adequate number of shore riggers, specially trained for the purpose.
- (b) Ensure that when a pilot is aboard and language difficulties will occur, there should always be an officer on the navigation bridge who understands English and that the quartermaster is able to understand helm orders given in the English language.
- (c) Fit VHF R/T.

2. Large Tankers should be required to:—

- (a) Provide VHF R/T with adequate International Channels, not less than 32 in number, with additional facilities for their use in the wings of the bridge.
- (b) Place instruments such as radar displays, rudder indicators, compass repeaters, speed indicators, etc., in the conning position so as to allow simultaneous inspection and use by the pilot.
- (c) Have an adequate number of officers aboard holding internationally recog-

nised certificates of competency.

- (d) Carry quartermasters holding certificates of competency in respect of their ability and experience in the steering of large tankers, particularly under conditions of small underkeel clearance.
 - (e) Carry an accommodation ladder on each side, or pilot hoist conforming to internationally approved standards, where freeboard is such that a climb or descent of more than 9 metres (30 feet) may be required. In addition, a pilot ladder conforming with IMCO Regulations should be rigged and ready for use at the boarding or landing position.
 - (f) Provide detail of vessels' manoeuvring capabilities, including information relative to astern power, turning circles, acceleration and de-acceleration data, stopping distances, etc., such detail also to be related to conditions of small underkeel clearances.
3. In addition, Very Large Tankers should be required to:—
- (a) Be provided with three VHF R/T separate lines of communication, capable of being used simultaneously:—
 - (1) For port navigational information and shore based radar services.
 - (2) For tugs, berthing masters and boatmen.
 - (3) Portable sets for use between bridge, forward and after mooring stations.
 - (b) Be fitted with accurate speed indicators, reliable at low speeds and under conditions of small underkeel clearance.

- (c) Be fitted with roll and pitch indicators.
 - (d) Be fitted with indicators showing underkeel clearances, forward and aft.
 - (e) Be fitted with two radars with at least one display on the fore side of the wheelhouse in the conning position. One scanner to be fitted forward to avoid blind arcs, the other aft to present the outline of vessel on the display.
 - (f) Have bridge wings extended to the ship's side.
 - (g) Fit rudder and engine indicators in, or visible from, the bridge wings.
 - (h) Have adequate stern power, not less than 50% of the designed full ahead power. Such stern power always to be available.
 - (i) Be fitted with adequate anchor chain braking systems and anchor marking buoys.
 - (j) Have shown on the ship's side, conspicuous markings indicating where tugs may safely push without incurring risk of damage to ship's shell plating.
 - (k) Have available shielded lighting on the main deck for use as required to indicate vessel's dimensions to approaching vessels.
 - (l) Be fitted with internationally accepted day and night signals which can be used to indicate that the vessel is restricted in her ability to manoeuvre. Where necessary, further accepted day and night signals may indicate that the tanker has right of way.
 - (m) Be fitted with facilities for helicopter operations.
 - (n) Employ more than one pilot, the additional number being decided by the navigational conditions in the port and its approaches.
 - (o) Be fitted with means of registering on the navigation bridge the accurate draught of the vessel.
- (p) Be fitted with rate of turn indicators.
4. In any port:—
- (a) The approach channels leading to tanker berths should be of such a depth as to provide an adequate underkeel clearance. This clearance should take into account variations which may occur in the draught due to "squat" etc., and normally should not be less than 10% of the draught which the vessel may assume under these circumstances. In such cases where channels are exposed to sea and swell conditions, an underkeel clearance of more than 10% of the draught may be required.
 - (b) No tanker should be permitted to enter any bend in the approach channels through which it must pass unless dredged and engineered to provide a curve of such a radius that is well within the turning characteristics or capabilities of that vessel. The cross section of the approach channels shall be adequate, taking into account a vessel's length, beam and draught.
 - (c) Where Tanker Berths are situated in, or near, navigation channels used by other vessels or are in any position where the berthing or unberthing of tankers offers a hazard to passing vessels, and unless there are ample provisions or arrangements to safeguard passing vessels in these circumstances, particularly during periods of reduced visibility, then berthing and unberthing should be confined to the hours of daylight.
 - (d) If, in the opinion of the appropriate authority, a tanker incurs navigational limitations because of size and draught, then that vessel should be required to display, by day as well as by night, a special signal. The signal should be internationally uniform and distinctive in character.
 - (e) Tanker Berths should be adequately illuminated and fendered, and provided with adequate mooring facilities in respect of the number and the location of mooring bollards. The mooring

bollards should be accessible at all times. Tankers over 600 feet in length should be assisted by mooring men using two mooring boats. Berthing masters and mooring boat personnel should be equipped with VHF R/T for communication with tankers.

- (f) Where a berth is required to take large tankers, it should be fitted with shore based doppler giving an accurate speed of approach of a vessel and a lateral speed when berthing. The information from such shore installation should be made available aboard a tanker by means of a portable visual display in preference to communication by VHF R/T or visual display ashore.
- (g) The type of tugs, their horsepower and bollard pull in tons, should be adequate for their purpose. The number of tugs employed should be at the pilot's discretion and the total bollard pull of available tugs should never be less than that agreed as a minimum for various sizes and conditions of loading of tankers.
- (h) The appropriate local authority should be required to promulgate byelaws to implement the recommendations of the Safety of Life at Sea Conference (1960) in respect of Rule 25 Paragraph (c) of the Regulations for the Prevention of Collision at Sea.
5. **When oil carried in bulk by tankers including those of a large or relatively large tonnage, forms a substantial part of the trade of the port, then:—**
- (a) All sea-going vessels using the port and any other type of vessel which might be liable to interfere with the safe navigation of tankers, should not be allowed to navigate within the port unless equipped with VHF R/T, nor should any tug which might be required to assist tankers be allowed to operate without being similarly equipped.
- (b) Should the navigation of tankers in

pilotage waters be made hazardous or should any danger to life or property be possibly incurred as the direct result of the action of other vessels navigating without a pilot on board, then pilotage should be made compulsory.

- (c) The Port should be required to install a VHF R/T information service and such a service should be managed and organised by the Pilots of the District so as to ensure its being used to the fullest advantage and, in particular, to enable all relevant information regarding shipping traffic, tide gauge readings and tidal predictions, visibility, velocity of currents etc., to be constantly available.
- A supply of portable VHF R/T sets should be available for pilots' use in the event of defect in, or absence of, ships' communication equipment.
- (d) The appropriate local authority should have the power where necessary to regulate the movements of shipping during the passage of large tankers.
- (e) The appropriate Local Authority should establish an Oil and Chemicals Safety Committee which would be required to promulgate information on all dangerous cargoes; the nature of the hazard and the necessary action to be taken in the event of fire, spillages and contact with personnel.
- (f) A "stand-by" tug should be permanently maintained at a convenient station and this tug should be equipped to deal with emergencies associated with tankers.
- (g) The Port Authority should institute a Consultative Committee consisting of pilots together with representatives of those who have a direct interest in the movement and berthing of tankers. The Committee should be responsible for suggesting rules for the regulation of this aspect of the port's activities and the frequent review of such rules.

R H Farrands
Vice-President EMPA

19th May, 1972.

Marine Traffic Engineering

TRAFFIC REGULATION AND PILOTAGE

C A Rhodes (*Medway*)

Enunciating the doctrine of freedom of the high seas Queen Elizabeth I said ". . . the use of the sea is common to all neither may any title to the ocean belong to any people or private man. . . .". It might well have been more appropriately phrased if she had said ". . . the sea is a free for all . . ." because until comparatively recently the common interpretation of freedom of the sea has been taken to be the right for all to sail as and how they pleased, unhindered and unrestricted except for some internationally agreed rules for preventing collision and the demands of prudent seamanship to avoid stranding. Indeed, Masters and Owners alike considered it their unquestioned right to the waters of their choice and in close quarter situations it was often the case of the man with the strongest nerves who won the day.

I do not wish to exclude pilots from these practices. They too were motivated by the same economic forces. As it was with ships and masters, so it was with pilots. It was the man who had made a reputation for a fast passage who was sought after and consequently reaped the richest rewards. However, even though the relative size and speed of the ships in these days was such as to allow ample time for freedom of manoeuvre, nevertheless for a variety of reasons, rules of conduct were broken, collisions occurred and imprudent seamanship resulted in strandings. All that might be said is that the consequential damage or loss was comparatively limited.

Manoeuvrability

The rapid advances in technological development in the last decade or so,

combined with changes in transport economics and national ideologies, have brought such changes in the sea transport industry, in the size and speed of vessels, in the nature of the cargoes they carry and in the capabilities of the men in charge of them, that no longer is there the time or space for freedom to manoeuvre. Nor, in many instances, is there the ability to match, or the experience to recognise, approaching danger. Inevitably the risk of accident and the seriousness of the consequences of accident have increased proportionately. In some cases the effects becoming so intolerable it is no longer possible to consider them as either local or limited.

Coincident with these changes in the shipping industry have been changes in the attitude of the public generally toward the needs and ambitions of individuals in relation to the needs of the community. This is reflected in our world by recognition of the need for toleration and precedence being given to those vessels hampered or restricted in their movements, either by lack of space or time. There is also a growing awareness of the need to protect the community and their environment from the consequences of actions of too ambitious individuals, from too great a reduction in safety margins and from too great a demand on the resources and stamina of men. It is being generally demanded that large scale pollution and widespread damage shall not be the price to pay for the economy of large scale transportation. And it is being accepted that the traditional freedom of the seas, this and other great seafaring nations have fought so long and so hard to maintain, must be curtailed.

With their view from the bridge, pilots

are perhaps uniquely placed to be able to give unprejudiced opinion on the changes that have taken place in the merchant navies of the world. They are independent in the exercise of judgment, and the advice they give to the ships they serve is unaffected by outside pressures. At the same time, they are acutely aware of the limitations and needs of others in their vicinity or district and are thus able to make due allowance for them. Having witnessed these changes, they have for some years been expressing their concern and warning of the consequences of what appears to them to be a continual reduction in manning standards, increasing use and reliance upon automation and a constant erosion of safety margins . . . especially when vessels are navigated in restricted areas of high traffic density. It is also worthwhile to recall that the Department of Trade and Industry recently considered it necessary to issue a warning notice drawing the attention of Shipowners and others to the fact that the size of some present day ships, and the draught at which they operate, mean that mariners are being asked to navigate to tolerances and margins of safety which the information and aids available to them are not accurate enough to allow.

Concentration

Of course it would not be true to say that pilots were alone in recognising the need to curtail some of the traditional freedom and to regulate the movement of shipping. Eleven years ago, in 1961, the Institutes of Navigation in Great Britain and France with the Deutsche Gesellschaft für Ordnung und Navigation formed a representative working group to go into the question of regulating traffic in converging areas at sea, with particular reference to the Dover Strait. The group's report was forwarded to the Maritime Safety Committee of IMCO and that Committee decided, in April 1964, to accept the recommendations which finally came into effect, six years after the study began, on 1st June, 1967. The principle of traffic routeing and separation was later adopted or recommended for other areas of high traffic density or converging routes, but these, as well as those in the Dover

Strait, were only recommended and only voluntarily adhered to by vessels belonging to Member Nations of IMCO.

After the somewhat traumatic experiences of Torrey Canyon, Pacific Glory and Texaco Caribbean, there was a flurry of interest and activity. In May 1970 the problem of safety in the English Channel was discussed by a variety of bodies and committees, conclusions were reached and papers were produced. The United Kingdom Government invited representatives from the Governments of France, Belgium and the Netherlands to meet in London on 12th May. The International Maritime Pilots' Association (IMPA) and the European Maritime Pilots' Association (EMPA) were meeting in Amsterdam on the same date; the Royal Institute of Navigation was studying the problem and presented its paper to the Safety of Navigation Committee of the Department of Trade and Industry on the 26th, and Trinity House had set up a working party to produce their recommendations.

Traffic Flow

Broadly speaking, all these various groups concluded there were four possible means to enhance safety in the area: Control of Shipping, Mandatory Routeing, Compulsory Pilotage and Radar Surveillance. Most recommendations favoured a combination of two of the four. Thus the meeting of Government Representatives favoured Mandatory Routeing with Radar Surveillance; the Royal Institute of Navigation and Trinity House favoured Compulsory Pilotage and Traffic Routeing. The pilots' organisations considered there could not be effective safety unless there was Mandatory Routeing, Compulsory Pilotage and Radar Monitoring augmented by an efficient advisory service. The Maritime Safety Committee of IMCO subsequently accepted the British Government's proposals to extend and modify the traffic routes and make them mandatory.

Apart from any other considerations, investigation and research into Marine Traffic Flow and Distribution may show

there to be sound economic benefits and other reasons for the introduction of routeing schemes. However, pilots are primarily concerned with safety and the safe expeditious passage of vessels in their charge. It was from this approach that both IMPA and EMPA examined the problem of safety of navigation in the English Channel, Dover Strait and Southern North Sea and considered the proposals for monitoring and enforcing the mandatory extended routes. While accepting that Routeing had contributed to safety, they concluded that the problems and the contributory causes for concern for safety are far too complex and inter-related to allow for simple or independent solutions and that the Government's proposals would prove to be costly without being fully effective. They reasoned that it is no use establishing, and endeavouring to enforce or rely upon, routeing schemes alone, unless the men on board are capable of conforming and adhering to the regulated traffic pattern, unless there is a reasonable assurance of compliance and an effective method of control. They recommended that the most effective method of control to ensure compliance with the routes and to reduce the incidence of accident, would be to introduce an International Deep Sea Pilotage Service in the area from the Western Entrance to the Channel to the Skaw and to supplement this service with an informed advisory service by means of shore radar surveillance and VHF radio communication.

Need for Reform

Having spent rather a long time giving a general picture, painting in the background of a broad canvas, I would now like to go into a bit more detail and define more precisely the contributory causes for concern, the changes that are jeopardising safety of life and property and the reasons why I feel the control of shipping in these hazardous and congested waters should be entrusted to specialists operating a specialist service.

Some of the changes in the maritime world are both dramatic and obvious even

to the layman. Some are equally dramatic but are nothing like so obvious. Those that have received the most publicity, and which present problems more readily understandable by the non-professional, concern size and dangerous cargoes. That these frequently go together has conditioned the general public into believing that the only source of danger or cause for concern stems from the carriage of oil in VLCCs. Such is the power of headlines and such is the deadening effect of uncomprehended vastness that even then, only those monsters of over a quarter of a million tons capacity are noticed. Nobody thinks to consider the threat to those VLCCs from the small insignificant coaster driving along on automatic pilot with a small, tired and frequently unqualified crew. Still less do the majority think of the VLCC driving along on automatic pilot and an equally small crew and an unqualified officer of the watch. And very few realise that all navigators set course along the shortest possible track . . . usually the same track every other navigator has chosen.

Other causes for concern that are only slightly less publicised are the Very Large Bulk Ore Carriers, the High Speed Container Vessels, Liquid Natural Gas Carriers and Chemical Carriers—all of which demand preferential treatment and toleration either by reason of their need for water, room to manoeuvre, the hazardous nature of their cargo or their need to maintain strict economic schedules. These are the vessels whose needs are understood, where the need for toleration and precedence is accepted, indeed where the need for preferential treatment is considered necessary.

Fatigue

The other changes that have taken place are less well known and even where they are known their effects are not fully recognised or understood. They are, however, the changes that give greatest cause for concern and are conceivably more hazardous. They are the changes in manning scales and the differing standards required by different maritime nations; the

nationalistic pride that has led to the so called emergent nations establishing and operating their own merchant fleets; the increasing use and chartering of vessels registered in countries whose regulations and manning scales are not of the same standard as those regarded as the traditional maritime nations; the reduction in the size of crews brought about by the increasing use and reliance upon automation and the loss in efficiency and experience these same automatic devices induce in the crews remaining; the manning scales that are perfectly adequate for ocean passages but which are not adequate for close quarter situations when fatigue is more likely to aggravate the problems caused by men being unused to prolonged periods of intense concentration and precision navigation in unfamiliar waters and high traffic density; increased standards of living and changed patterns of living ashore which have made life at sea less attractive to men of the highest calibre and forced even the most renowned shipping companies to recruit crews of poorer quality with less experience and ability; vessels with multinational crews where the common language is one that is neither natural nor familiar to anyone on board.

It is a paradox that, despite the higher standards of living and conditions of employment in ships today compared with yesteryear, fewer qualified officers are to be found. No longer is it commonplace to find three qualified Master Mariners in a ship. Nowadays the third of three officers is likely to have been at sea for a total of no more than a year and a half. The suggested solution, to rely upon one qualified mariner—the Master—to be called by the officer-of-the-watch when required, or in any emergency, is more likely to result in wrong decisions being taken. The effects of prolonged periods of broken sleep and fatigue on sound judgment is well known—both to the medical profession and to the secret service!

These, then, are the contributory causes to which I referred earlier and which, if taken singly might possibly be acceptable or containable but which, acting upon each other as they do, give rise to the gravest concern.

Aims

I come now to the proposals for alleviating the problem.

One possible solution, that favoured by the British Government and by the Safety Committee of IMCO, is to have Radar Monitoring of Mandatory Routes policed by Helicopter and Surface Patrol with sanctions imposed on those who do not comply with the scheme. However, apart from the fact that this will only be applicable—or mandatory—upon those vessels belonging to member countries of IMCO, to achieve maximum safety and freedom from accident would require:—

- (a) Radar Stations to be manned by trained radar navigators well versed in the International Rules for Prevention of Collision at Sea and experienced in manoeuvring and handling vessels in close quarter situations.
- (b) Vessels navigating in the area of control to rely, accept and act upon instructions from the shore-based operator.
- (c) The whole area to be effectively policed.

Requirements

The most casual examination of the above three requirements reveals the formidable obstacles to their success.

To recruit and adequately train a sufficient number of radar navigators would itself take a considerable time and, even if they were recruited from amongst senior navigating officers from the merchant navies, it is unlikely that more than a few would have the requisite experience of close-quarter ship-handling. It might, therefore, be concluded that pilots operating in the estuaries and coastal waters of the area would be the most qualified to train for this operation. Indeed an example can be found in the manning by pilots of the shore-based radar control stations along the banks of the Rivers Elbe and Weser,

where considerable success in the reduction of accidents has been achieved.

The problems involved in attempting to fulfil the second requirement are even more formidable.

First, there is the immediate problem of language and the positive aggravation of dangerous situations that could arise as the result of misunderstanding or misinterpretation of instructions or advice.

Secondly, as the surveillance radar presently available is not capable of high definition or separation of echoes of distant targets in close proximity to each other, there is the need for each ship to have a reliable and positive means of ship/echo identification. To attempt to identify by deliberate, exaggerated, manoeuvre under those circumstances when positive identification is most necessary, i.e. in times of reduced visibility and high traffic density, is likely in itself to be the cause of disaster.

Then there is the further problem of responsibility and liability. If the Master is to remain responsible for the safe conduct and navigation of his vessel he will tend to disregard the advice or instructions he receives from shore-based operators and, in close-quarter situations, rely upon his own judgment, skill and initiative. He will thus negate the basic principle of control fundamental to the operation of the scheme.

Finally, the third requirement—the effective policing of the area is also likely to be extremely difficult, even impossible to achieve, if reliance is to be placed solely upon helicopter air survey and surface patrol craft. The time of greatest need for strict compliance with the routeing system, for lane discipline and reliance upon guidance from the shore radar-surveillance stations, is during those periods of reduced visibility and heavy traffic concentrations. These are the circumstances which themselves make compliance most difficult. Reduced visibility makes precise navigation more difficult, exact position finding more difficult to determine and the possibility of unintentionally straying from the route more likely. As the policing vessels themselves are restricted by the

conditions and subject to the same international rules governing speed and requirements for prudent seamanship, their efforts to obtain positive identification and control will be severely hampered.

Pilotage

For these reasons it is my belief, and that of the International and European Maritime Pilots' Associations, that the answer lies in mandatory routeing of vessels enforced by means of compulsory pilotage supported by a comprehensive radar surveillance and information service and an efficient ship-to-shore and ship-to-ship communications system.

The pilots would be the specialist navigators augmenting the crews of vessels during that part of the voyage when a full complement was needed, and allowing the skeleton crews to proceed on ocean passage.

The pilots, being familiar with the area, traffic patterns and zones would be aware of the probable intentions of other vessels encountered and so be better able to make the correct decision for action. They would recognise at an earlier stage any deviation from the normal traffic pattern and so be able to anticipate any action required. And they would be in a position to police the whole scheme, to report vessels not complying with instructions and those unauthorised vessels using reserved waters. They would also act as a deterrent to any vessel which might otherwise contravene the anti-pollution acts and agreements and be in a position to report any offender sighted. They would be in position to receive immediate information of hazard or of any change in navigation marks and, through their own knowledge, close association and experience with the shore-based staff, would have the confidence to cooperate fully with the surveillance and control service.

Logistics

In order to introduce a system of compulsory pilotage it will be necessary to consider first the physical characteristics

of the area, the particular needs of the ports and districts to be served and the location of the pilot boarding and landing stations.

The siting of pilot stations must take into account the traffic routes and the need to avoid the undesirable practice of embarking or disembarking in areas of high traffic density, or of crossing over from one route for the sole purpose of embarking a pilot. These criteria point to Lyme Bay on the English Coast and Baie de la Seine on the French Coast as being the most suitable points at the western limit of the district. Each bay offers deep water and space to manoeuvre, is free from obstruction and sheltered from the prevailing weather, is clear from the traffic routes and yet requires minimum deviation from them. The adjacent ports of Brixham and Cherbourg have good access and communications and would serve ideally as bases for boarding and landing craft and helicopters. At the eastern limits of the district embarkation and disembarkation would be at the ports of arrival or departure, or at the Skaw, and would require no additional services to those already in existence.

A particular problem that is causing increasing concern, particularly to the very large vessels and express container ships, is the frequency of suspension of pilot services in continental ports due to severe weather conditions. The prevailing westerly weather presents few problems to boarding and landing pilots in the sheltered waters around Britain. But this is not the case for the major North European ports, the approaches to which are situated on a shallow and exposed coast.

Apart from the considerable cost of delay to the very large vessels and those running to strict economic schedules and the far reaching effects of disruption of flow of large quantities of goods and raw materials to the industrial complexes, there is considerable risk of danger and accident as the restricted approaches become more and more congested with shipping awaiting resumption of the pilot service. It is not unusual for upwards of 100 vessels to be delayed off the Hook of Holland during bad weather and it needs little imagination to realise the potential dangers in such a situation.

To obviate this danger pilots consider the proposed International Deep Sea Pilotage Service should incorporate and regularise what has already become a widely used and increasingly accepted practice of sending continental pilots to distant boarding points. So that, for example, a pilot from Rotterdam or the River Scheldt might be sent to Cherbourg to board a vessel bound to his district and be on board ready to assume duty at the entrance to his port without the vessel having to risk delay either from adverse weather, shortage of pilots or congestion at the time of arrival.

Safety

It must be appreciated that the stresses involved in the precision navigation required for the very large vessels, with their very limited freedom to depart from the deepest available waters are far too great for one pilot to sustain over long periods, despite the increasing use of automation, the development of aids to navigation and the fact that they are experienced in the work and accustomed to long periods of concentration. It is also recognised that efficiency is impaired by long spells of unrelieved duty and, in those cases where a vessel is to make a long passage through the district, it is recommended that two pilots should be employed. This point was made by the Board of Inquiry into the collision between the Pacific Glory and Allegro when they recommended that "... consideration should be given to the possibility and desirability of requiring that for a voyage exceeding, say 12 hours, two pilots should be engaged". In view of this and in consideration of the need to avoid delays, it is recommended that one of the two pilots engaged for a voyage to a continental port should be a pilot from that port or district.

A recent survey of the Dover Strait has indicated a traffic concentration of some 400 vessels a day passing through the area and we recognise it will not be possible to implement a full, comprehensive, service such as I have described within a few months. Neither is it envisaged that, when the service is in operation, all and every

vessel passing through will be required to have a pilot on board. Certain categories of vessels will be able to claim exemption provided they are always in control of a suitably qualified and certificated officer who has demonstrated his knowledge of the area to the competent authority. However, certain categories of vessels would never be exempted from requiring the services of a pilot and it is on many of these that a start could be made with the resources available to us. Such vessels would be those in excess of 100,000 dwt., vessels in excess of 40'0" draught, the very large bulk ore/crude carriers, high speed container vessels, liquid natural gas and chemical carriers, vessels carrying dangerous or noxious cargoes as defined by IMCO and those vessels whose nationality or frequency of trading in the district is such as to preclude the officers in charge from having or acquiring sufficient knowledge and familiarity with the area.

An analysis of the vessels identified during the recent survey showed that some 45 vessels, or 11%, fell into one or other of the above categories and would therefore have required the services of a pilot.

Cost

The comprehensive service envisaged, covering pilotage, radar surveillance and information services, and all the ancillary supporting services and equipment necessary for efficient operation, will require a reliable source of income to sustain it. A levy on all vessels navigating in the area, collected in a manner similar to the way in which light dues are presently collected, would seem to be the simplest and most expedient means of raising the revenue and sharing the burden of cost equitably.

The extent to which the service would add to the costs of the shipping industry and of the goods transported, and the number of pilots who will need to be employed, will depend upon the degree of compulsion, the standards required and the limits of exemptions set. The increase in costs must, however, be looked at in an overall context and set against the possible

costs of accident. And some will be directly offset by the savings arising from fewer accidents, less repair bills and reduced compensation for damage. The balance will need to be accepted as the price to pay by the people who demand the high standards of living and the benefits modern technology, science and economics can bring but, at the same time, require and have the right to live protected and free from harm and nuisance.

Implementation

In conclusion, can such an International Pilot Service be implemented and made compulsory in the international waters of the Channel?

This may well be a formidable hurdle and take time to surmount. However, I do not think it an impossible one, nor indeed might it take too long if the countries involved make determined efforts to reach agreement. It is not unknown, for instance, for countries to extend their territorial waters and areas of jurisdiction, and it is possible that treaties similar to those governing navigation and control on the international waterways of the Rhine and Danube could be made. And the effects of possible "Europeanisation" of the Channel when we join the European Economic Community have yet to be fully examined. There is, however, a more immediate temporary solution, capable of being achieved by simple agreement between the local governments, charterers and the importers and exporters of goods . . . to impose sanctions and refuse permission to enter port to any vessel not complying with the scheme or employing a pilot. As I said at the beginning of this paper, the common people are prepared to accept some curtailment of traditional freedoms, and will not expect the governments acting on their behalf to be unduly influenced by the financial effects upon a particular section of the business community, or by any fear of 'retaliation' by other governments elsewhere taking similar action in their efforts to protect their own peoples and property from danger, damage or pollution.

RECOMMENDATIONS OF THE CHANNEL PILOTAGE SUB-COMMITTEE OF EMPA

C A Rhodes
Chairman

Channel Pilotage Sub-Committee

22nd June, 1972.

The European Maritime Pilots' Association, concerned with the continuing problem the safety of navigation in the English Channel and North Sea, submit the following observations and proposals:—

1. Despite the fact that there has been no serious incident in the area during the past few months, cause for concern is no less great and the need for remedial measures is no less urgent.
2. In view of the time that will be needed to institute the original proposals for an integrated comprehensive pilotage, surveillance and advisory service submitted by the International Maritime Pilots' Association in a Memorandum dated July, 1971, and to achieve international agreement on jurisdiction and authority, the European Maritime Pilots' Association propose to establish a pilotage service of internationally agreed standard which will be available to all shipping at a minimum cost to the industry.
3. The service should be considered as an interim measure until such time as the comprehensive service is established and will be available on a voluntary basis. Nevertheless, in the interests of safety, the governments of the countries bordering the area, the Maritime Safety Committee of IMCO and the International Chamber of Shipping are urged to recommend shipmasters and owners of vessels to avail themselves of the service offered.
4. The service will be available in the waters of the English Channel, Dover Straits and North Sea from a line drawn between Ushant and Scilly Isles to the Skaw and round the coast of the United Kingdom not subject to existing pilotage legislation or jurisdiction.
5. Pilots for the service will be licensed pilots of the pilotage districts of Belgium, France, Germany, Holland and the United Kingdom holding deep-sea licences issued by their respective licensing authorities.
6. Although the service will be available to all vessels, it is primarily intended for, and priority will be given to, vessels in the following categories:—
 - (i) Vessels in excess of 100,000 DWT.
 - (ii) Vessels in excess of 40 feet draught.
 - (iii) Very Large Crude Oil Carriers.
 - (iv) Very Large Bulk Ore Carriers.
 - (v) Liquid Natural Gas Carriers.
 - (vi) Vessels carrying dangerous chemicals or dangerous cargoes as defined by IMCO.
 - (vii) High Speed Container Vessels.
 - (viii) Vessels whose nationality, or frequency of trading to the district precludes the officer in charge from having or acquiring sufficient knowledge of or familiarity with the district.
7. In order to give effect to these proposals the European Maritime Pilots' Association will:—
 - (a) Compile a register of qualified pilots who are also licensed to pilot vessels in waters outside their pilotage district.
 - (b) Provide for an operational headquarters for the receipt and relay of orders and the co-ordination of the supply of appropriate pilots.
 - (c) Define the standards of qualifications and competence required of pilots available for the service.

- (d) Publish tariffs and rates of dues and charges.
- (e) Arrange for the embarkation and disembarkation of pilots by launches or helicopters.
- (f) Arrange for the collection of finance to support the organisation.

8. As from the date of inauguration of the service it will be necessary for the Pilotage Authorities of Belgium, France, Germany, Holland and the U.K. to agree to examine pilots licensed by them to an agreed common standard. Pilots already holding deep sea licences issued by their pilotage authorities shall be deemed to be of the required standard. The syllabus for examination and the qualifications required shall be agreed by the pilotage authorities and EMPA in consultation.
9. Vessels requiring the services of an EMPA pilot will be required to give notice of their ETA/ETD in advance, stating name of vessel, nationality, GRT, draft, point at which embarkation of pilot is required, and destination or point at which disembarkation of pilot is required.
10. Where the duration of pilotage is expected to exceed 12 hours, two pilots will be embarked and, in order to eliminate the possibility of delay at the approaches to continental ports, one of the two pilots appointed will, so far as is possible, be from the port of arrival or departure.
11. The tariffs for pilotage services will be according to the scale of charges published and shall be paid to the district supplying the pilots. Where two pilots are supplied the charges shall be levied for both pilots.
12. The charges for boarding and landing pilots whether by launch or helicopter shall be those made by the operators and shall be submitted by them direct to the owners' agents.
13. Pilots will be entitled to 1st class travel to and from points of embarkation or disembarkation and to hotel accommodation and subsistence while awaiting arrival or departure.
14. The service will co-operate with any

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Obituaries

From the Local Secretary, we learn with sadness of the death of three members of the Humber Pilots' Society:

JOHN LAWRENCE

John Bertram Lawrence, who resigned from the Humber Pilot Service on medical grounds in 1968 after serving 22 years as a pilot, died on June 3rd aged 56. After his resignation he attempted to keep in the job by working as an Assistant Pilot Administrator, but eventually this proved to be too much of a strain. It was distressing to his friends and associates to see the physical decline of a comrade who had always been a conscientious worker. It is sometimes said about a person "he had no enemies"; this certainly applied to John. He leaves a widow and a son.

ALEC WILKS

Alexander Walter Wilks, aged 51, died on April 15th after a long illness. He was forced to retire five years ago because of a deterioration in health which affected his capability as a pilot. Alec joined the Humber Pilot Service from the local Ellermans Wilson Line in March 1949 and will be remembered for his prominence in debates on the pilot cutters and at Society meetings. He leaves a widow and a son.

TED BURN

Edward Robert Cheetham Burn died suddenly on June 27th after a heart attack. Ted, who was 53 years old, and had been a Humber Pilot since October 1946, served his time as a pilot apprentice. His late father was also a Humber Pilot and Cutter Master. Ted was very popular and will be missed by his colleagues. He leaves a widow and a son.

Coastlines

A Fair Swap—for Danger?

Both the Mayor of Gravesend, our Dan McMillan, and the Port of London Authority delivered rockets in response to the jubilant discharge of two phosphorus-sodium flares from an allied frigate leaving London last July at the end of North Sea NATO exercises. The PLA wants an inquiry into what could have been a major catastrophe.

One flare landed on the 250,000 ton tanker *Mobil Pinnacle*, which was discharging oil, and the other landed in the grounds of the Mobil Refinery at Coryton, Essex. The flares, designed to burn for several minutes, were promptly dealt with and although the Port of London Combined Accident Procedure (POLCAP) was alerted it was, fortunately, not required.

The press reports quoted Dan McMillan as having pointed out recently the dangers of oil and chemicals being carried up and down the river without the present regulations supporting effective controls to engender safety. With the exemption limit so high—3,500 gross tons—he maintains we are living on borrowed time. But for a miracle, the mortgage might have foreclosed for Coryton, Gravesend and Canvey Island that night.

The Combination Killer

Some expression of the several aspects of safety relating to navigation lights on yachts has been ventilated in recent letters to the editor of *Motor Boat & Yachting* (August, et seq). It is increasingly a matter of anxiety to pilots and master mariners that so many small craft allow themselves to enter shipping lanes in darkness or poor light whilst ill-equipped and apparently unaware of the danger they have created for themselves and for other shipping.

This matter of lighting was also debated in the IEE Conference on navigational aids, which is reported in this issue. In this discussion session, John Bain described the combined red and green lantern for small craft, which one delegate demonstrated, as a "killer". He said that all navigators had a **duty to be seen** and advocated that what was really required was a bright, all round white light, carried on the masthead, regardless of the dangerous red and green lights laid down by DoTI, by IMCO and by international regulations.

Such a forthright statement, made to emphasise the inadequacy in terms of practical visibility of the present regulations, has brought Captain Bain under attack in yachting circles where he has been charged with giving irresponsible advice in contravention of regulations. Questioned on his statement, he adds, "The real difficulty lies in the disparity in scale (size and speed) between modern mercantile shipping and pleasure craft. To advocate the use of 12 volt car lighting bulbs (including one inch long courtesy light bulbs) in the face of modern 30 knot container ships and VLCCs having lengths of 1200–1300 feet is indicative of the poverty of thought of those advocates. It is time, and high time, that the marine establishment and yachting establishments were closely examined for evidence of the practising seaman.

"Although aware of the technical (battery power) difficulties, it should not be beyond the power of modern technology to see that yachts are safely lit. The usual pathetic side lights are probably adequate for navigation between yachts in or approaching the marina but to suggest, as powerful editors of yachting magazines do, that these are adequate for the North Sea or Channel and coastal navigation is not merely ludicrous, it approaches criminal folly. This is inexcusable even on the grounds of lack of information or of the appreciation of the extent of the danger. The brightest

Coastlines (continued)

illumination obtainable from limited resources must be a single all-round white light but, without a doubt, the combination light is just not up to the job."

From another source comes a suggestion that a flashing amber light at the masthead has merit in both conserving battery power and in maximising all-round visibility. The difficulty in seeing small craft in adequate time for a vessel to respond to any manoeuvre found necessary is probably beyond the comprehension of anyone who has not set foot aboard a large vessel. There may be thought to be sufficient grounds for a revision of the safety regulations concerning navigation lights on small craft. The views and first-hand experiences of our members could give substance and support to any such representation. In any event, the Editor is always glad to receive and publish letters of real interest to pilots.

Commander Woolcock Retires

Francis Ronald Woolcock, Pilot for Cunard White Star for the last 23 years and onetime Secretary of the United Pilots' Cricket Club, has our best wishes for a happy and active retirement from the London Channel District.

Like all who can cast their minds back over a lengthy maritime experience, their early seagoing days seem to be in another world. He has a vivid recollection of coaling (and who couldn't have!) for, in the mid-'20s when he was apprenticed in the Port Line, he helped the officers of the coal-burning *Port Hardy* to steam her around the Australian coast and keep 3,000 tons of meat from going rotten. Later, in the Royal Naval Reserve, he took part in competitions with the rest of the fleet in coaling a battleship, and thoroughly enjoyed it all.

No doubt piloting was already in his plans whilst on war service in the Royal Navy for his father (Gravesend), brother, two uncles and a cousin (Gadd) were all

in the service; but his first significant act of pilotage occurred as Admiralty Berthing Officer, Stranraer, when he was sent to Larne to pilot a destroyer into Stranraer with the King and Queen on Board.

We look forward to some more *sixes* yet on the score sheet.

Trinity House

Captain D S Tibbits, DSC, RN(retd) became Deputy Master and Chairman on August 11th, on the retirement of Captain Sir George Barnard.

Captain Tibbits has represented Trinity House on the Harwich Harbour Conservancy Board, Milford Haven Conservancy Board and, until recently, was Chairman of the Sub-Commissioners for the Isle of Wight and the Milford Haven Pilotage Districts. He chaired the Working Party which set up the Pilots' National Pension Fund in April 1971 and became the first Chairman of the Board of Management. He is also associated in various capacities with a number of maritime, charitable and public organisations.

The retiring Deputy Master, Captain Sir George Barnard, joined the Board of Trinity House in 1958 and was made Deputy Master and Chairman in 1961. He was also Treasurer and Member of the Executive Committee of the International Association of Lighthouse Authorities and was awarded a Knighthood in the 1968 Birthday Honours List.

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- radar surveillance and advisory service operating in the area.
- The service may have to call upon the services of pilots operating in the service of private companies and operators, but urges that those pilots be required to undergo examination to the same standards as EMPA pilots.

Local Secretaries

Aberdeen	H. McKilligan	Aberdeen Harbour, North Pier, Aberdeen
Ardrossan	A. Caldwell	13 Chapelhill Mount, Ardrossan, Ayrshire
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Belfast	W. J. Kirkpatrick	15 Downshire Gardens, Carrickfergus, Co. Antrim, N. Ireland
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Cinque Ports	J. A. Cresswell	361 London Road, Deal, Kent
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Portsmouth	M. Sparkes	Trinity House Pilotage Service, Victoria Pier, Portsmouth
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Prestatyn	A. M. Hatton	39 Grosvenor Road, Prestatyn, Flints.
Rye	H. Helman	59 Udimore Road, Rye, Sussex
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Shoreham	T. N. H. Dalton	5 Willow Close, Lancing, Sussex
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South Shields	T. A. Purvis	2 Parkside Crescent, Tynemouth, Northumberland
Sunderland	J. Patterson	c/o Sunderland Pilot Office, Old North Pier, Roker, Sunderland, Co. Durham
Taw and Torridge	V. W. Harris	Fernlea, Pitts Hill, Appledore, N. Devon
Teignmouth	A. C. Broom	8 Foresters' Terrace, Teignmouth, Devon
Trent	W. L. Smedley	257 Beverley Road, Kirkella, Nr. Hull, E. Yorks.
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