



# THE PILOT

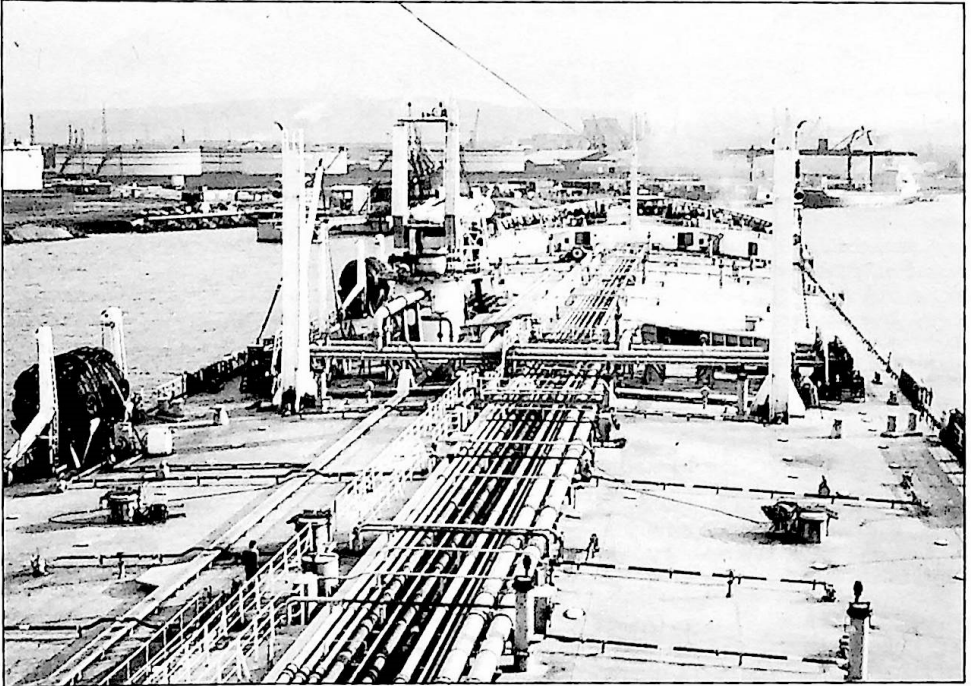
The official  
organ of the  
United Kingdom  
Pilots'  
Association  
(Marine)

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## THE VIEW AHEAD

### Berthing at an Oil Terminal on River Tees

Photo: Michael Irving



## Tribute

On the 18th October the *mv Venus* made its last voyage from the Tyne as a scheduled passenger-carrying ferry between the Tyne and Norway. As the master Captain Elling Haaland was retiring soon, the Association of Tyne Pilots presented him with an original watercolour of the harbour mouth in recognition of his unflinching courtesy and consideration to the pilots over the many years in which he ran to the Tyne.

Local Secretary J R Phillips

## United Kingdom Pilots Association (Marine)

(A Section of the Transport & General Workers Union)

Transport House, Smith Square, Westminster, London SW1P 3JB

Telephone: 01-828-7788

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<b>Chairman of the Section Committee</b> .....	C C WILKIN (Humber) 273 Beverley Road, Kirkella Hull, North Humberside HU10 7AQ (0482) 653323
<b>Vice-Chairman of the Section Committee</b> .....	M H C HOOPER (Southampton and Isle of Wight) 60 Spencer Road, Ryde, Isle of Wight PO33 3AF (0983) 62474
<b>Honorary Treasurer</b> .....	D W DAVIS (London Sea Pilots South) New Church Farm, Church Hougham, Dover, CT15 7AH (0304) 206946

### Section Committee

BODDY, A R (London North) 94 Fronks Road, Dovercourt, Harwich, Essex CO12 3RS	(0255) 508106
BURN, J H (Tyne) 44 Walton Avenue, North Shields, Tyne & Wear, NE29 9BS	(0632) 573999
COATES, G A (Tees) 9 Stokesley Road, Marton, Middlesborough, Cleveland TS7 8DT	(0642) 315236
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FRITH, H (Manchester) 6 Gaymore Close, Liverpool Road, Chester, CH2 1BH	(0244) 383697
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LOGIE, G M (Yarmouth) Claremont Cottage, 35 Yallop Avenue, Gorleston-on-Sea NR31 6HD	(0493) 662932
McKINNEY, N E (Belfast) 8 Alt-Min Avenue, Belfast 8, N. Ireland	(0232) 795133
OWEN, N (Liverpool) Pankina, Church Meadow, Lower Heswall, Merseyside	(051) 342-3952
RUSSELL, T (Bristol) 35 Grange Park, Westbury-on-Trym, Bristol BS9 4BU	(0272) 629250

**Auditors** ..... Guy Mayers, Chartered Accountant  
**Editor of "The Pilot"** ..... David Colver

## PILOTAGE AND THE SHIPMASTER

CAPTAIN C M R Lloyd Commander RD, FNI, RNR  
*Shipmaster*

*This paper, delivered at a Seminar organised by the South West Branch of the Nautical Institute on 9th November 1985 at Plymouth, is reproduced with grateful acknowledgement to the Nautical Institute*

"It is a serious relation, that in which a man stands to his ship. A ship is a creature which we have brought into this world, as it were on purpose to keep us up to the mark. In her handling a ship will not put up with a mere pretender."

### THE PILOT AND THE MASTER

The relationship between the Master and the Pilot must surely be unique in the field of maritime endeavour. It is a relationship based on trust, founded on an assumption of professional competence between experienced seamen united in the common aim of the safe navigation of a ship in coastal waters.

The Master gives navigational control of the ship to the pilot yet retains overall command. Theoretically, from this, one could state that when the pilot is on the bridge the Master should be there also, however, as we all know, this is not the case. Pilots' experiences range from the Master constantly shadowing the pilot, questioning each and every action, to only seeing the Master to say "hello" and "goodbye". Such absolute trust could also be called absolute disinterest but the pilot has to be ready to cope with such range of experience and professionalism.

### EXPERIENCE

I would like to consider this word experience for a moment. Under our present systems of training and examinations we are not properly prepared for that incredible transition from Chief Officer to Captain. Generally, as Chief Officers, we think we are for we do not have the responsibility. Then, one day, we go from standing on the bridge or fo'c'sle bored and wondering why on earth the Captain and Pilot are taking so long over, what to us is a simple manoeuvre, to standing there as Captain with the pilot, heading out to sea. I well remember my first time, when it seemed as if every ship in the waiting anchorage was in my way and the pilot wanted to leave the ship long before he should. I proceeded down the approach channel far slower than I should have, which of course made the handling more difficult, and the anchor party became permanent fixtures until I was well and truly clear. On arrival at the next port we went through the same procedure and I remember informing the pilot when he boarded that the pilot station was far too close to land and should be three miles further out to sea. I believe that many others have also been through similar experiences and therefore it would seem that, with reference to the quotation from Conrad at the beginning of this paper, there was a little pretence in many of us on that first command.

During those first years I had the knowledge but lacked the experience and the pilotage system together with the sea provided that and assisted considerably the well being of my ships and probably other ships as well. Over the years as my experience grew, I learnt how to distinguish between the beginnings of a good manoeuvre or a bad one. To know what to watch for and when to mention a possible problem to the pilot and, most important, to know the abilities and limitations of my ship and crew. This together with the pilot's local knowledge and the correct interchange of information and suggestions between us provides the team approach professionalism ideally demands.

### WHAT I WANT FROM A PILOTAGE SERVICE

**Arrivals and Departures.** I want an understanding of an ETA. The last cabled ETA is normally sent 24 hours before arrival; however, if my ship has a speed of 12 knots and the weather deteriorates and reduces my speed by only one knot, my ETA will now be over 2 hours later. If then over the last few hours the current has turned against me this can extend to three hours. Add a Sunday Yachting crowd to the final approaches, possibly making me put the engines on stand by and reduce speed before scheduled, and the delay can extend to four hours. This is not my fault, just the way life is at sea. Similarly with ETD's. We are to a considerable extent in the hands of the port personnel. So often I will be told a completion time that is obviously in our opinion an hour or so too early. Inevitably, the agent will act on the shore advice and order the pilot who arrives to sit around reading newspapers until we are ready to sail. Then we can have problems closing hatches or with the final draft survey all contributing to delay. Of course the more pilots a port has the shorter notice time required. The longer the notice time required then the more chance of delay.

**The Pilot Station.** This should be clearly marked on the chart and should be an area from which all other ships and small craft are prohibited. A VLCC at six knots is very restricted as regards its manoeuvrability, a fact that would still not seem to be fully appreciated by many, especially the small boat fraternity. I do not want to be kept waiting for the pilot, especially in a busy traffic area. With VHF communications, ample warning can be given during the final approaches for the pilot boat to be waiting. Increasingly, around the world, especially where the pilotage service is integrated with the port commercial services, this is happening. Quite often, if the pilot station is within a short distance of a port the pilot boat will not leave the port until it sees the ship on station.

**Pilot Boats.** If I cannot have a helicopter, then the pilot boat must be one designed specifically for the job and with adequate crewing arrangements. Again, where the pilot service is run as a commercial concern I am seeing unsuitable craft. Vancouver pilotage run a launch with only one crew member, a most dangerous practice which the pilots admit but then there is more profit. In an American port the pilot uses his own pleasure boat crewed by his wife, with whom I hope he still maintains excellent relations.

**Understanding.** I want the pilots to appreciate my position in 1985. There is a belief amongst many international and national bodies that certificates and not training is what is important, each as it were trying to prove their importance with paper. Governments, again on paper follow the requirements with the certificates being issued on occasion from a crewing agency drawer without the courses being attended. Even if they are, the examinations that can follow are dismal by our standards. Certain governments are pouring their surplus labour onto the seas as a quick source of revenue and shipowners are not reluctant to employ them. Who can blame them in times like these?

Couple this with reducing crews on ships not designed or equipped for this and of course my ship cannot be as efficient as I would like it to be or as it was years ago. My seamen cannot steer the ship as well as could be done and they will take considerably longer to secure or let go the ship or tug if I am on a ship in this position. Flag of Convenience certificates are of a poor standard in comparison to ours and, as they increase, so the standards decline. If my ship is scurrying around the North European container ports my officers are tired and snatching what sleep they can. I know that regulations require an Officer to be at the gangway or ladder for the pilot but is it fair for me to call an officer from his sleep for this? In normal conditions I will send the officer off the bridge but there are times that I cannot. Most pilots, especially those in the North Sea employment do understand the changes but there are those at some ports that still wish to continue as if nothing has changed.

It is the easiest thing in the world for some group to sit down and draw up legislation for what theoretically should take place but if that body does not then provide the environment for that legislation to be followed the results are farcical with that legislation being only a means of blaming the ship if something goes wrong. The bridges of ships today are covered with regulations, port requirements, documents on how to do this or that, a tide of paper from organisations all over the world of which less and less can practically be followed,

implemented or even read. The pilot, rightly or wrongly must today accept the ship for what it is and, provided it is not unacceptable on the grounds of safety, assist the Master in the ship's progress. I am pleased to say that most do.

**Integrity.** Increasingly in this shipping recession, Masters are under considerable pressure to ensure the commercial viability of their ships, not just or necessarily by the owners but the charterers, agents, port authorities, all in fact who have an interest in the speedy arrival and departure of the ships. Thus there are occasions when ships proceed at speeds in conditions and areas where prudence might dictate a slower speed. Modern electronic instruments considerably help a ship at sea but do little good for the Master at a court of enquiry. In ports when the ship has completed her cargo or the berth and gangs are awaiting her arrival the pressure is on to either get the ship out or in. It is of the utmost importance that the pilot be free of commercial pressures and considerations in order that he may render an unbiased opinion to the Master as to the suitability of proceeding with an intended operation. On one occasion in Antwerp, after expressing my doubts about the wisdom of sailing in a force 9, I was assured by the pilot that there was no problem. We did so and near disaster followed with three hours of battling to get the ship into the locks which were closed to shipping immediately afterwards. Only later did I learn that the pilot had been considerably influenced by the Agents. Similarly in Brazil at a new port with a particularly difficult approach, I was informed by the pilots that they had stated that the ship was too big for the port and refused to pilot the ship when the possibility of the ship using the port was first discussed. They changed their minds however on being offered triple the fee.

The North Sea pilots are under commercial pressures also. How many times do they pilot a ship into European ports that either through the standard of the crew or equipment or a combination of both should not be at sea? Please understand I am not criticising this for they, above many pilots, understand the situation at sea today and their presence on the bridge of such a ship provides the safety factor.

If we as a Nation were as keen about safety and the environment as we claim to be we would make the whole North Sea a compulsory pilotage area, for foreign shipping certainly and possibly others as well, using the exemption system for regular users. We would also provide the pilot with a checklist that by law must be completed and signed by the Master of a ship before pilotage commences. Vancouver has this system and it works well.

**Responsibility.** Presently, as we all know, the Master is responsible at all times when the ship is under pilotage. There are occasions when because of this system, the Master, and thus the owners, have to accept the responsibility for damage regardless of the realities of the situation. Consider the situation of a VLCC under pilotage being manoeuvred to her berth by six tugs under control of the pilot. How can the master adequately interfere with the situation. Point things out yes but could he take over from the pilot and direct the tugs? He would have to be a very brave man to do so. I believe that there is a firm case to be made in many ports under such circumstances for the pilot to be responsible for the handling of the ship. Indeed should the pilot be an employee of the port then the port should accept responsibility not just for damage to its own property but to that of the ship also.

### THE GREEN PAPER

I would now like to review aspects of the Green paper where I consider it will affect the shipmaster.

**Exemptions.** I agree that there is a case for the granting of exemptions to masters of certain types of ships regularly using a particular port but let us be very careful with this. Just because I can take a twin screw supply boat into Aberdeen harbour with ease does not mean I can do the same with a ship of the same size but different design and equipped with only a single screw. Further, the size and type of ship is not relevant when accidents are caused. Navigational problems in the ports of Northern Europe are rarely caused by large vessels. It is the small craft without pilots that give the problem.

**Non-Compulsory Pilotage Areas.** I consider these to be an anomaly and do not like them. An area should either be compulsory or no pilotage service provided. In the Green Paper it is stated that there is no reason

why the Master should not be capable of taking a responsible decision on the need for a pilot. Obviously this was written by someone who does not know the realities. First the Master is rarely in the position of ordering the pilot. It is done either through his Company or the Charterers or their Agents. What if the Charterer refuses to pay — and believe me, they frequently do? The onus is now on the owners of the ship or those managing it and in many cases that does not make the Master a popular man especially if he does it frequently. What then is the Master to do? Make himself unpopular in the home office and possibly put himself at the top of the redundancy list or without confidence undertake a passage without a pilot. If it is considered that an area is increased in safety by the provision of a pilotage service then that area should be compulsory using the exemption system for those that prove their ability.

It has been argued by Mr R A Gibbons of the British Ports Authority that the standard of training and competence overall has been raised. I sincerely wish this were so but it is not. Indeed as I have pointed out earlier, the increase of shipping from the non-traditional maritime countries and the growth of international shipping with Panamanian and Liberian certificates has produced a decline in standards generally and yet the Green Paper is actually proposing the granting of exemptions in compulsory pilotage areas to holders of such certificates. He also states that the increase in navigational aids both on ship and ashore gives credence to his argument for a review of compulsory pilotage areas but says little about the ability to use these correctly. If with all the equipment available to us today ships still persist with near misses on large oil platforms his theoretical suppositions do not seem to relate to reality.

**Harbour Authorities responsibility for pilotage.** Over the last twenty years, the managements of our ports have little reason for self congratulation. Their failures coupled with those of our shipping managements are the reason for this Green Paper. If our ports had been modernised in sufficient time far more exports and imports would today be transported by deep sea vessels directly through our ports instead of transshipment through mainland European ports with the subsequent benefit in costs and employment, and there would be no discussion on increased exemption or enlarging non-compulsory pilotage. Yet the Green Paper advocates handing over control of the pilots to what benefit? Can anyone argue as to an increase in safety? Most certainly not. What about efficiency? Are a multitude of small pilotage authorities going to handle the pilotage services any more efficiently than the present main authorities? I doubt it, especially when one considers the experience of our existing authorities compared to the inexperience of the proposed new ones. A cheaper service. Of course, that is the reason for the proposals. But a cheaper service means the intention of less pilotage and thus a poorer service.

I do not want to see the pilots as part of the commercial operations of a port for that places them under the same commercial pressures as the Master. Far better an independent professional service rendered impartially to both port and Master.

## CONCLUSION

It is interesting to note that the recent House of Commons Transport Select Committee on Pilotage chose not to call before it any representatives of our profession. Because of this lack of consultation, we, as Masters were given no opportunity to present our point of view. Can you imagine any company in the service sector of industry proposing radical changes directly affecting the customers without considering them? Not just in pilotage, but in the whole field of maritime affairs we have the incredible position of various bodies not of our profession deliberating and legislating on maritime affairs that directly concern us and ignoring the expertise available to them by our professional representation. Within the profession also we would seem on occasion to have the same attitude prevailing where those of us who are actually practising the profession are being told how or how not to do the job by those who do not and, far worse, by those who never have. I completely accept that there are many who have entered specialist fields and can offer much needed advice and expertise on specific subjects and am only too willing to listen but this must work both ways. Our position at sea together with the realities of the job today must be considered as an equal part in professional deliberations if we are to avoid dividing the profession into those at sea and those ashore.

## LONG LADDERS — LEGAL OR ILLEGAL?

The 1986 Conference accepted the Tees resolution that UK pilots should only use embarking and disembarking equipment which conforms to the appropriate legislation.

A delegate then told me that he and his colleagues disapproved of the arrangement of ladder and accommodation ladder, described in the Regulations, for freeboards over nine metres. He explained that their preference is for a single ladder up to 60 feet long as the accommodation ladder swings away from the side when the vessel is rolling. He pointed out that the requirements are qualified in the Regulations by the phrase "or other equally safe and convenient means" and asked if I considered that their use of the very long ladder falls within this "equally safe" qualification. The question may interest other pilots.

Lacking any legal training, my thoughts lead me to believe that the expert Government delegations who drafted the SOLAS Convention, Chapter V, Regulation 17, felt that it was necessary to indicate that an ordinary pilot ladder should not be used on freeboards over 9m. In such cases, they specified that "access from the pilot ladder to the ship shall be by means of an accommodation ladder" and continued "or other equally safe and convenient means". This last phrase seems to me to be a sensible qualification in order not to prevent progressive developments such as the use of helicopters or even hoists. As the purpose of this recommendation is to exclude single pilot ladders from freeboards over 9m, it is unthinkable that they could be regarded as being as "equally safe" as the specified arrangement. We are fortunate in this country that the intent and spirit of both the Convention and the non-mandatory IMO Resolution A426 are given the force of law in Statutory Instruments 543 & 581 and apply "to all ships while they are within the United Kingdom or UK territorial waters".

Regulation 5(3)ii requires that "the lower and the accommodation ladder rests firmly against the side of the ship as near to the mid-length as is practicable and leading aft. Precautions shall be taken to bowse-in such accommodation falls against the roll of the vessel".

Means are available to shipowners to ensure that the ladder and lower platform rest firmly against the ship's side when in use.

Pilots should not ignore regulations made to improve their safety.

November 1986

G A Coates

*(Continued from previous page)*

The Master and the Pilot are not divided. They are professional colleagues, each needing the knowledge and co-operation of the other to bring a particular act of navigation and seamanship to a successful conclusion. No one who has not been in the position of Master or Pilot can completely comprehend the stress that can occur during a particularly difficult passage or port operation or the feeling of relief at its successful conclusion.

The waters of Northern Europe are hazardous areas. These combined with the variance of our weather conditions provide a scenario for potential disaster. No electronic equipment or VTS service can possibly replace the team skills of Master and Pilot during such conditions. It is pleasing to say that as a Master in Northern Europe, and the UK in particular, I have yet to experience a pilot who is a "mere pretender".

## ESTUARIAL AND DOCK PILOTAGE

### THE IMPLICATIONS OF CHANGE

P J H Tebay, FNI *Liverpool Pilot*

*This paper, delivered at a Seminar organised by the South West Branch of the Nautical Institute on 9th November 1985, at Plymouth, is reproduced with grateful acknowledgement to the Nautical Institute.*

#### Introduction

My brief today is to speak about pilotage in the Mersey, the changes that have already taken place in recent years and the prospect of change envisaged under the Government's Green Paper on Pilotage published at the end of last year. First it is necessary for a full understanding of the Liverpool situation to be aware of the current operational parameters and practices, the effect of declining trade on pilotage and the influence of pilotage events nationally on local thinking. Thus we will come to the Green Paper with perhaps a better appreciation of the facts as we see them in Liverpool. In saying this I must emphasise that when I come to opinion and comment, it is my opinion and comment and does not necessarily represent the views of the Association of which I am chairman. I must point out however that I have been a pilot for 33 years and a sometime pilot representative on the Liverpool Pilotage Committee during that time. If occasionally my remarks display some impatience with those involved in dealing with pilotage affairs, you must remember that for a decade representatives of Government and of marine managements in this maritime nation have repeatedly proved themselves unable to find and agree solutions to what might have been a comparatively straightforward exercise.

#### The working of the Liverpool Pilotage District

To give a thumbnail sketch and without going into too great detail, the situation is as follows:

The Pilotage District is served by two stations. One station at Lynas on the Anglesey coast some 35 miles west of the second station at Liverpool bar. Ships from the west and south take their inward pilot at Lynas and ships from the north at the Bar. Outward pilotage is compulsory to the Bar. Both stations are serviced by high speed launches working from the land. Lynas offers sheltered operational conditions in winds from the south and the prevailing south westerlies and north westerlies. The Bar has shelter from easterly and southerly winds.

The lowest limit for compulsory pilotage is 250 gross tons. The largest vessels using pilots have been tankers of up to 500,000 tons going to the SBM off Anglesey. The largest vessels using the Mersey are tankers of approximately 200,000 tons using Tranmere. The largest using Liverpool docks are third generation container vessels and 80,000 ton grain carriers.

Pilotage rates are based mainly on draught footage. It should be noted that from the mists of time, and no doubt as a financial help to the British coasting trade, vessels trading coastwise only pay 50% of pilotage dues and such vessels up to 500 tons gross in ballast are not required to take a pilot. The Mersey Dock Company is the Pilotage Authority and operates through a Pilotage Committee on which sit representatives of the Dock Company, shipowners and agents, pilots and two nautical assessors. Pilotage exemption certificates traditionally have been available for Masters and mates of regular trading, small to medium size vessels after passing a formal examination by the Examination Committee. Until recently in my time, there have always been more pilotage certificates than licensed Liverpool pilots.

In geographical terms there is open water between Lynas and the Bar where the water shoals. There is an 11-mile buoyed channel from the Bar to the river. Spring tides have a 10 metre range and peak at 5 knots in the river and 2¼ knots at the Bar. A Liverpool pilot takes a ship from sea to the berth in Liverpool, Garston, Birkenhead, and Bromborough Docks and to the Eastham Locks from the Manchester Ship Canal.

#### Operational Economies Over the Years

The Liverpool Pilot Service has changed slowly but inevitably from a totally sea-going cutter operation to being shore-based and serviced by high-speed launches. The object has been economy without losing efficiency and whilst this has been achieved at Lynas, the Bar Station sometimes proves extremely difficult to maintain. The pilots have co-operated totally in the changeover, despite some initial misgivings as to operational practicalities and safety. Quite simply, as trade declined so the need for economies became more apparent and we have sometimes been left with little choice if we were to maintain a financially viable Service.

The Lynas shore-based operation has been eminently successful due to good local management and team work and the fact that as the coast line is well marked, a shipmaster can approach to within 1½ miles of the Station in safety. The Bar has been another matter. The 13 to 14 mile plug to seaward and the return in mainly exposed waters tests both men and machines in other than fair conditions. For the Bar Station a Pilotage Control Centre has been established in the Radar Tower at the entrance to the river and here Despatchers deal with bookings and pilot manning and for 24 hours a day a Pilot Master will endeavour to match ship requirement inward and outward with launch availability. Contact is established by the Pilot Master with vessels outward when they sail and inward from the north when they are passing The Chickens, Isle of Man — about four hours steaming from the Bar. At this stage inward vessels can, if the weather is inclement for launch operations, be diverted to Lynas to pick up their pilot, an additional 12 miles on their passage. In good weather with two fully operational launches in service and proper communications, the Bar service works well. In poor weather the Station is closed and most vessels diverted to Lynas. The difficulties arise in marginal conditions (which can be quite prolonged), or when both launches are not available for some reason (not infrequent). Pilots have tried very hard to make the Station successful, but weather is a continuing problem and the run itself takes its toll of launch reliability. Other factors creep in to bedevil the situation so that at times the repeated non-availability of launches becomes an embarrassment. This last August (mid-summer!) there were 19 days with winds of Force 6 and above (commencement of marginal conditions) and 12 days when the launch service was restricted or not available. Last winter in one month the Bar Station was closed for 309 hours 45 minutes whilst at the same time Lynas was closed for only two hours 15 minutes. These are relevant facts to what I have to say later.

During the same broad period of change the pilots have made a determined effort to improve their efficiency by co-operating fully in the implementation of an ETA system to reduce pilot waiting and stand-by time. A Work Index was introduced whereby every service had an hourly value so that requisite overall pilot numbers could be accurately calculated annually — a Work Index incidentally that, when devised, was regarded by some pilotage bodies outside Liverpool as a model. A Single List Rota of manning was produced whereby all pilots except those on official leave became available for duty again as soon as they completed their last service. These are some of the major reforms that took place over a period of years, but even these proved inadequate as the decline of shipping and drift away from the west coast escalated. The reasons for this are well known and need no reference here as they are common to a majority of UK ports, especially those in the south west, west and north west. Some may say that Liverpool's record of bad industrial relations was an element. To them I would say that whilst this may have encouraged an early decline in trade, there is little doubt that the end result, even without the bad publicity, would have been little different.

Currently there are 135 Liverpool pilots of whom approximately 15 are on two-year contracts abroad. This compares with 182 in busier times so that we have reduced actual numbers by one third. Numbers of pilotage services have decreased to less than half in the same period, but inevitably some of the slack has been

taken up with improved nationally agreed leave in line with the Merchant Navy. Half our pilots are 50 plus, the youngest pilot is 38, we have approximately 30 ex-apprentices at sea with qualifications from Grade 3 to Grade 1 Certificates. Pilots in Liverpool are paid for the *proper* number of pilots as revealed annually by calculations in the Work Index — not as the GCBS have inferred or the last Minister been erroneously advised on the *actual* number. Thus if we are 10% overmanned, we all receive 10% less earnings to carry that number. In Liverpool we pay for our own surplus numbers and view with extreme anger remarks to the contrary sometimes made by those who are in a position to know better.

#### Liverpool Pilots and the Pilotage Authority

Before proceeding on this subject it is as well to understand first the changing role of the Liverpool Pilotage Authority through its Pilotage Committee in the light of national events and the decline in the status of the Port. When I was first a pilot, the Pilotage Committee met once every week and usually had two actual shipowners as members. As British shipping declined, inevitably these figures have been replaced by management personnel who are clearly answerable to others. The Committee now meets once a month and whilst dealing with day to day matters, no longer has the autonomous powers that it used to have. Major policy decisions are now made nationally. Whilst this is understandable and has sometimes been advantageous, it can in other circumstances be frustrating.

Accepting then that national legislation and directives govern local policy, let us just list briefly the way-points that concerned both pilots and pilotage authorities during the decade. The list is not exclusive.

Government appointed . . .

Select Committee on Pilotage. Report 1974.  
Advisory Committee on Pilotage. Report 1977.  
Pilotage Commission commencement. 1979.

Government promoted . . . Merchant Shipping Act 1979

The agreement between pilot organisations and the General Council of British Shipping entitled 'Earnings of Pilots. National Agreement. 1980'.

Pilotage Commission Advice on Draft London Byelaws 1982.

Government sponsored Samuel Montagu recommendations in two revised drafts on early retirement proposals for pilots 1983-4.

Government promoted Pilotage Act 1983.

Government promoted Green Paper on Pilotage 1984.

We have neither the time nor for that matter the patience to deal with the findings of each of the above and anyway it would become apparent that their progression reveals some dramatic shifts of emphasis. Let us then try to get it down to its most simple rationale. The object initially was a) to streamline, modernise and improve the efficiency of UK pilotage. These principles were enshrined first by SCOP and ACOP and later to be brought about by the introduction of a central regulatory body — the Pilotage Commission — and a new Pilotage Act. Next b), later and in return for improved productivity the benefits were to be shared by shipowners and pilots alike (1980 agreement on earnings).

However, the numbers of pilots envisaged by the shipowners as needing to quit the industry through reorganisation reveal the requirement for a severance scheme to take care of those whose jobs would have

been made forfeit. Enter Samuel Montagu onto the scene, an independent merchant banker retained by the Government.

The Liverpool pilots and the Pilotage Authority took cognisance of these various edicts as they appeared from national sources and, as was indicated, a sub-committee of the Pilotage Committee was formed to revise local Byelaws for submission to the Pilotage Commission. The sub-committee comprising port authority, ship owner, pilot and a nautical adviser, met regularly between 1980 to '81 to work their way through an update of the local byelaws. It was a process of compromising and rationalising until all were satisfied that what resulted was right for Liverpool. The completed draft was presented to the Pilotage Committee and at this stage the same shipowner representatives then said that they could not now accept some of the recommendations! To the pilots the inference was clearly that the GCBS was pulling the strings, that local debate with port users was a waste of time and that common sense had now been replaced by national politics. This despair was further reinforced by both the Department and the Pilotage Commission making it clear that the Commission Advice on London byelaws would be a model for the UK. There were aspects of this which, quite frankly, were a total nonsense to us in Liverpool who felt that such local requirements as had proved safe and satisfactory to port users in the past should remain. It seemed to us that there was a danger that national expediency would override time-tested good seamanship. The pilots lobbied Ministers, MP's, and the Department. Of these the Department showed the least understanding and to boot reminded us that *they* advised the Minister! However, this detail was overtaken when both the draft reports of Samuel Montagu — the independent merchant banker employed by HM Government at a total cost approaching half a million pounds to the taxpayer — to produce a financially sound and impartial severance scheme for pilots — were successively turned down by the GCBS. It was virtually an all-stop situation with no pilotage district able to move forward until the fair treatment for pilots" contained in all previous Government utterances to date could be quantified and seen to be acceptable to all. The Government would neither give nor lend money for severance on the principle of being unable to help the self-employed — despite the fact that pilots, being governed by an Act of Parliament, are there because of the law and not just because they chose to be. Further, the self-employed status is very questionable. The ports themselves do not have access to money for such a purpose and the shipowners have made it plain that they will not contribute to anything that does not show a saving on day one, an almost impossible condition in Liverpool. In the same breath, the GCBS let it be known that they could no longer go along with the 1980 agreement on earnings, that they no longer recognised the Letch Agreement that had regulated pilots' earnings for the last twenty years and further, might well attack next the contribution levels to the Pilots' national Pension Fund — to all of which agreements they had been signatories! The Pension Fund for Liverpool pilots, by the way, is not generous when one considers that at the moment most serving pilots would receive only one third earnings on retirement at 60 after approximately 35 years service.

The hiatus resulting from the rejection of Montagu by the shipowners was particularly unfortunate for Liverpool, already overmanned and having accepted that further reorganisation could and should take place as long as surplus numbers would be treated properly.

The period of uncertainty was terminated at the end of last year when the current Minister presented his Green Paper on pilotage. To those pilots who had followed developments over the years, the scope of the recommendations in the Paper were more far reaching than anticipated but the gist was not entirely unexpected. To those pilots complacent in their ignorance of what was happening about them, it was a rude shock. As an Association, the Liverpool pilots responded formally to the consultative document. Generally speaking, there were a number of points with which we either disagreed or required further clarification but, provided suitable assurances and safeguards were forthcoming, we felt that it might provide a way forward with which we could live. Like the curate's egg, it was good in parts. However the immediacy of what could happen sharpened wonderfully — whilst a Green Paper may be a consultative document it is clearly indicative of a Minister's thinking for the future. Therefore in an endeavour to get it right, the Liverpool pilots collectively and individually lobbied their local MP's and Euro MP's on the points at issue. Our constructive attitude in Liverpool was somewhat soured by the official response by the GCBS to the Green Paper — we thought it insulting, inaccurate and obsessively vindictive.

Very briefly the points from the Green Paper on which we required clarification, amendment or assurance were as follows:-

#### Employed v self-employed

Having been brought up in a self-employed situation, the Liverpool pilots all understand our relationship with the Pilotage Authority, the Port Authority and the shipmaster — we operate under a National Pilotage Act and local bye-laws. Remove the Act or the bye-laws and what do you replace them with? What would be the terms and conditions of employment? Until these were defined, the choice was not clear but in principle we were certainly prepared to investigate the pro's and con's.

#### Compulsory pilotage

One of the most difficult in as far as whatever figure is decided upon tends to be arbitrary. The principle that we could embrace was that of different levels of compulsory pilotage within the Pilotage District, for example, making pilotage voluntary for small ships at the outer limit but with more stringent requirements as confined and busier waters are reached, ending up with all ships in the river having either a pilot or pilotage certificated master on the bridge. We further believe that vessels carrying hazardous or noxious cargoes should be piloted within the port limits by a licensed pilot. What we were distinctly unhappy about was that if compulsory levels were to be decided by our local Port Authority, they would inevitably regard it as a commercial exercise in competition with other, possibly totally dissimilar, ports. Our suspicions proved later to be not ill-founded. Similarly, we could not accept the argument made by Government that ship masters would independently decide for themselves whether they needed a pilot. Our belief — subsequently confirmed by asking trading ship masters — was that, particularly the smaller vessels, would be pressurised, by their Owner directly or agent indirectly, to dispense with a pilot whenever they were not compulsory. As one British coastal tanker master said to me 'I may prefer to take a pilot, but if it's your job or mine, cheerio'. We have reason to believe that foreign flag ship owners would be no less insistent and if we were to extend certification to flags of convenience, then this would be yet another corner-cutting exercise that had to be matched by other traders in the same area. What Government, ship owner and Port Authorities often fail to understand is that pilots feel a general responsibility to all traffic moving in their immediate vicinity and in this respect are aware of the capabilities and limiting factors governing other vessels. We are also aware of the desperation of the argument so glibly put forward "safety is in direct proportion to what you can afford".

#### Certification

Having a long history of a low exemption tonnage combined with a realistic attitude towards pilotage certificates, we are anxious to see a system that is time-tested, safe and efficiently administered continue. The principle of a local examination has not deterred candidates in the past and the issue of certificates should be subject to locally agreed parameters of size and draught. The principle of extending the availability of certificates beyond EEC nationals would in practice reduce the commercial viability for British coasters trading to the Mersey.

#### Compensation

Possibly the thorniest of all aspects. If pilots are to co-operate in re-organisation then it has always been understood that those pilots made redundant would be compensated. Thus what started off as an agreed principle between Department, ship owners and pilots has, with the decline in the fortunes of the British ship owner, led him to refute this principle despite the obvious long-term savings outlined by Montagu. The Government refuse to assist on the basis of pilots being self-employed — even on a loan basis to "prime the pump" — disregarding the fact that other self-employed persons have been so dealt with in the recent past. Farming is a prime example. As pilots operate under Act and Bye-law and are not free agents and whose

numbers have been governed in the past by the same Act and Bye-laws, the self-employed status takes on several shades of grey.

#### Pilots' National Pension Fund

Until 1977 the Liverpool pilots had their own pension fund administered locally. Under this a pilot had to retire at 65, but could retire at any age after 60 with 35 years service with a minimum loss of benefit. The formation of the Pilots' National Pension Fund, although of great benefit to pilots nationally, some of whom had no properly funded scheme, required by Inland Revenue rules that it had to be the only pilotage pension fund recognised for tax purposes. Thus on joining and after 25 years service as a Liverpool pilot, I was credited with 10 years under the PPNF rules and by waiting until 65 and receiving double credits for the last five years I would receive little more than a 50% pension. As has been said, not generous, and all this provided that at 65 I could survive 30 foot ladders and high speed launches in bad weather. So it is vital that if you wish pilots to retire early, they must be able to look forward to a pension that is healthy and holds out some hope of valuation increments. The last valuation surplus has not been distributed because even though pilots may well have accepted some of the surplus going towards compensation (as envisaged by Montagu) the GCBS wish to use all of it and in addition now question the 15% pension contribution from pilotage rates. Such declared intentions combined with the 60 to 65 year old loading do little to encourage any Liverpool pilot to retire before he has to.

#### Harbour Authorities

Liverpool pilots can see the sense in having one estuarial harbour authority for the Mersey. Personally I see no problem in the retraining and merging of the Liverpool and Manchester pilot services provided both have an acceptable facility to get their numbers right first.

#### Situation to Date

These then are the problems that face us in Liverpool and as I have said before, we are certainly not unique on the main issues. However, taking on board the spirit of the Green Paper, the Liverpool pilots agreed with the Pilotage Authority that a sub-committee of the Pilotage Commission should be formed to partake in some "without commitment" discussions on reorganisation. The two pilot representatives on the sub-committee asked that before discussion commenced and ideas floated there would be an understanding that a) a prerequisite of any new system would be an acceptable severance scheme and b) that the seaward Lynas station would remain in the pilotage District — this because otherwise we could see no way that any credible service to shipping could be offered. This was accepted and minuted. After several meetings the pilot representatives produced a paper outlining an extremely radical scheme (perhaps too radical for many pilots) but one which would have produced a dramatic reduction in the number of pilots and still provided a proper service to shipping given the total co-operation of all concerned. It was an honest — perhaps too honest — attempt to find an acceptable answer the parts of which dovetailed together to form a total package. It left little room for manoeuvre as every aspect had been cut to the financial bone. Incredibly the ship owner representatives rejected it and put in their own paper which amongst other things a) said the ship owners had no money for severance and b) took Point Lynas out of the District. Subsequently the Dock Company revealed impractical views somewhere in the middle. We wonder what one has to do to demonstrate that trade to the Port of Liverpool vitally needs an on-going efficient Lynas Station when available statistics make it so obvious. The gulf between the practical and the theoretical yawns wide and deep as the grave.

As I see it, the pilots in the port of Liverpool recognise that we can and should continue along the lines of improved efficiency, but that a further rationalisation of services can only be achieved by evidence of honest co-operation from others in finding acceptable solutions. If pilots are to become employees in the future, it is vital that their goodwill towards the port and the industry is maintained yet we remain to be convinced that there is a full understanding locally of the *raison d'être* or practicalities of pilotage.

You may ask what this has to do with The Nautical Institute. Last night our President reminded us that one of the objects of the Institute was this improvement of standards within the industry. Pilotage is part of that industry and pilots themselves are vitally concerned that their professionalism is similarly updated and improved.

To date much of what we have heard suggested for pilotage may well bring some economies, but the savings will be at the cost of efficiency and port and coastline safety. I believe that The Nautical Institute has a role to play, as it primarily represents those at the sharp end and to whom a lowering of standards in UK pilotage would have a prime effect.

## BEM Teignmouth

It was pleasing to learn that Sydney Hook, senior pilot, Teignmouth, had been awarded the British Empire Medal in the last Birthday Honours List. Congratulations!

## Obituary

### GEORGE HOWISON

It was with profound sadness that the Section Committee learned of the death, on 4th January 1987, of George Howison: he had served until 1981 on the former Executive Committee, and this sorrow will be reflected by all who knew him.

His sea career began in 1932 with an indentured apprenticeship to Anchor Donaldson Line of Glasgow. He served with them in all capacities from 4th officer to Master, gaining his Master's Certificate (FG) in 1942.

The war years saw him in North Atlantic convoys and in the Eastern Mediterranean, latterly as Master at the end of the war. From 1947 to 1951 he served with the Canadian Company as Master and Assistant Nautical Adviser, including one year as Master of crude oil tankers trading Aruba and Lake Maracaibo.

Then followed thirty-two years experience of dock, river, estuary and coastal piloting, including VLCC's of 325,000 tons fully loaded to 79ft draft as well as lightening operations in the Firth of Clyde. He frequently acted as Master for various shipyards when putting their new ships through trials.

George had served on the Executive Committee from 1974 until 1981 and was appointed a member of the Government's Advisory Committee on Pilotage (ACOP) in 1973 until publication of the Report in 1979. It was this report which formed the basis for the 1979 Merchant Shipping Act. It was 1951 when he was appointed a Clyde Pilot and he retired from the pilotage service in June 1982.



## THE WORK of the TECHNICAL SUB-COMMITTEE

Mike Irving (Tees)

The Technical sub-Committee, now sixteen years old, first started life as the National Technical Committee in November 1970, under the chairmanship of Dick Farrands (London North Channel). Composed of nine invited members, of whom five were from the "London District", two from Southampton/Isle of Wight, and one each from the Clyde and the Tees, the first meeting was held at Peel Street with Edgar Eden and Yvonne Blake in attendance.

At this first meeting, liaison and exchange of technical papers and reports with other bodies was suggested:

- a) Honourable Company of Master Mariners Technical Committee,
- b) Institute of Navigation, whose meeting on "Wheelbase and Bridge Design" in January 1971 was to be attended by two NTC members.
- c) Safety of Navigation Committee of the Department of Trade and Industry. The already established UKPA representation on this important Committee thus led to the direct link between the NTC and SONC, still existing today.
- d) EMPA Technical Committee
- e) IMPA Technical Committee, — this to be a future liaison.
- f) TGWU Technical Development sub-Committee — as from the second meeting of the NTC, pilots from Liverpool and Manchester have contributed, and still do so today under the banner of the UKPA (Marine).

It is interesting to read agenda items of the first NTC meeting and see that the same topics are still of concern and interest to pilots in 1986: Pilot Ladders, Helicopters, Simulators, National Ports Council, National Physical Laboratory, the newly formed Nautical Professional Body, VTS, as such, as still below the horizon, but remote pilotage and the Dutch New Waterway "information and position service" were referred to.

The three recommendations from the first NTC meeting are as poignant today as in 1970, and reflect creditably the current thinking of the Committee sixteen years ago:

- a) that due to the inevitable use of helicopters in the future, pilots should be encouraged to gain experience and confidence in winching operations, etc;
- b) that pilots of all ports should, wherever possible, go through radar simulator courses;
- c) that all pilots encountering problems with VLCC's should be encouraged to visit the National Laboratory to see if they have the answer to their problem, or to see if they are willing to include those problems in their programme for investigation.

Pilot ladders, hoists, accommodation ladders, and the problems associated with beltings have constantly been discussed since 1970, and much credit must go to the NTC, along with many others, for the progress made towards improving standards. An encouraging rapport now exists between the Marine Directorate of the DOT and pilots, ensuring that the Technical sub-Committee is consulted on all aspects of pilot boarding arrangements — an article on current progress appeared in the July 1986 issue of *The Pilot*.

Simulators, likewise, have been regularly to the forefront of discussion. The proposed UK Shiphandling simulator, to be sponsored by the DTI and Vickers Shipbuilding Division, the shiphandling simulator at Wageningen, Holland, the Decca Experimental ship simulator, the Marconi ship simulator, the ship berthing



Mimic, the Warsash simulator, the Delft, Holland, simulator course, the Cardiff ship simulator, and very recently, the Port Revel, France, shiphandling course have all been appraised and suitably commented upon by the NTC. Much criticism has been levied at simulators over the years, often rightly so, but the Committee, through its successive Chairmen has always felt that pilots should recognise that simulators exist and do have a place in pilotage, and therefore the Committee should be able to criticise, where necessary. Although a political issue, the Committee should continue to look at simulators from a practical and technical stance, with a proper evaluation.

Clearly, the subjects under scrutiny since 1970 have been many and varied — far too many to highlight in this very brief history, but like pilot ladders and simulators, certain topics have made more than one appearance and still remain relevant in 1987.

The introduction of the new IALA buoyage system, incorporating green lights, caused much concern and the reduction in both light and power was widely recognised by pilots and, despite discussion with both Trinity House and the DOT, the improved new green shade still presents problems, particularly against a backcloth of shore lights.

Tanker Safety Check lists, and the legality and morality questions of pilots reporting deficiencies in vessel equipment — and to whom? — have featured on successive agendas since 1978. Whether the notification should be to the DOT or the Port Authority, brought a fairly even division — generally reflecting the relationship between individual Pilotage Districts and their own Port Authority.

Squat, has been something of a perennial, and was indeed still under discussion in 1986. The Technical Committee has consistently been of the opinion that it is an important phenomenon, about which pilots — particularly those handling deep drafted ships in relatively shallow waters — should be aware, and a knowledge of the theory is essential, but the mathematical and at times very complicated Proofs bear little relation to reality. Practical experience had shown that reducing under-keel clearance was self-regulating to the speed, in some respects.

Much time has been taken up with the ship's bridge — the working place of the pilot — with great emphasis on design, on visibility, on sighting of the ships side when berthing, on correctly sited instrumentation (eg the necessity for a gyro repeater at the conning position), on the VHF and the SMNV, on the Doppler berthing aids, and now more recently, on the increasing language problems encountered on the bridge with multinational crews. Surely an agenda item, now very topical, must be the noticeable shortage of crew, not only on the bridge, but everywhere.

A most satisfying product of the Technical Committee's endeavours, must be in the progress made in pilots' lifejackets — the improvement in the standards — in the automatic lungs, in the safety harness, in the lights for example, and due credit must go to the manufacturers for responding to pilots' requests. With the continuance of "over the side" accidents, any further improvements and modifications will remain on the Technical Committee programme.

These topics and many more, the report and input — especially of late — from both EMPA and IMPA Technical Committee, the exchange of ideas with the Research and Development Officer of the RNLI, the continued representation on the SON Committee are all of value to pilots, and the 28 pilots who have been Technical Committee members over the sixteen years, are to be thanked for their contribution to not the easiest of committees on which to sit. Peter Munro (Tees), Ken Davis (London North Channel), Ian Evans (Milford Haven), and John Tebay (Liverpool) have all chaired the Technical Committee after Dick Ferrands, and the present Committee is — Chairman, Mike Irving (Tees); vice-Chairman, Peter Russell (Cinque Ports); Mike Barratt (Humber); John Brown (Liverpool); Ron Cashin (Manchester); Gerald Coates (IMPA Technical Committee Chairman — by invitation); John Dixon (Europilots); Malcolm Logie (Yarmouth & Southwold); Angus MacKinnon (Milford Haven); and Ian Stirling (Southampton & Isle of Wight).

## ABOUT HEAT WAVES

Michael Barrett (*Technical sub-Committee*)

The question of what effect, if any, does the radar radiation have on the human body, was raised in 1982 at EMPA by the Belgian Pilots' Guild.

The Executive instructed the Secretary to make enquiries and to report back. In due course a very good report was prepared by Captain A Van de Velde and Captain J L Janssens. In doing the research they found that some studies were made as far back as 1966.

The radiation emitted by radar is not ionising radiation of the type associated with nuclear weapons or nuclear power stations. However the radiation from radar does have a heating effect, the principle in fact of the micro wave ovens which are found in many homes these days.

The parts of the body most vulnerable to damage from microwaves are those parts which cannot dissipate heat quickly, in particular the eyes and the testes.

It has been shown that if the temperature of the eye lens is raised from the normal 37°C to 42°C then irreversible denaturation of the lens proteins will occur and the probable consequence will be the later development of cataract. Industrial injuries of this nature are well documented in the glass blowing craft and amongst furnace workers. The view is held that because the infra red waves and the micro waves are near each other in the spectrum cataracts induced by micro waves can be expected if the power density is high enough.

It is this question of power density which is really the nub of the matter. Some experiments indicate that to damage the eye lens it would be necessary to have an exposure of 20 minutes or more to 120 milli-watts per square centimetre. So, how much is a pilot exposed to when passing the launch's radar and how dense is the field allowing for the fact that the ships side will "bounce back" some of the emission? That question was difficult to answer. However, the EMPA report concludes that the exposure would be less than 10mW/cm<sup>2</sup>, and that only for a short period as the pilot joins or leaves the pilot launch.

Now 10mW/cm<sup>2</sup> for continuous exposure is a widely held safety standard and has been in place for many years, however the National Radiological Protection Board will be making a review of standards and it may well be lowered to 5mW/cm<sup>2</sup> for continuous exposure. It is interesting to note that Russia and Poland set lower limits than the West already but the reason for their standard is not known. It is probable that, like the west, the Eastern bloc based their standard on the heating effect of microwaves as almost all the known cases of tissue damage can be explained in terms of the heating effect. A few special cases, where there is some doubt about the effect being different, are being researched into in the UK by a team at King's College, London, led by Professor E Grant, with whom the UKPA technical committee have been in correspondence.

It appears that pilots are not at great risk as they pass through the field of radar radiation for brief periods when boarding and landing. However it is considered prudent to put the radar to "stand by" during boarding and landing, if the radar has that control facility.

There are no known incidents of pilots being adversely affected by radar waves up to the present, and that represents upward of twenty five years experience with radar.

Looking to the future, it may happen that pilots become involved with VTS shore-based radar where cir-

(Continued foot of next page)

## A PILOT'S IMPRESSIONS OF PORT REVEL MARINE RESEARCH AND TRAINING CENTRE

P J D RUSSELL, FNI London District (South)

### Introduction

Gripping the bridge rail my palms suddenly felt clammy when in response to my order, "hard a starboard, full ahead", I heard the French Canadian voice answer "Engine still turning astern pilot". Curse this turbine. I waited as the loaded VLCC *Europe* of 255,000 dwt, draft 65 feet, moved imperceptibly closer to the jetty, the current making its effect felt on the starboard bow. At last the turbine gave me the kick ahead I needed, the bow moved to starboard, I immediately reduced to 20 revolutions ahead. The doppler showed less than half a knot over the ground. I walked back the anchors to one and one half shackles and as the weight came on the cables, increased revs gradually until the vessel crept ahead at one knot. I was surprised at the amount of control dredging the anchors gave me over such a large vessel and how, by gradually reducing the revs, I was able to bring the vessel to a stop parallel to the jetty, a half a beam off, close enough to run the springs.

The voice of the French Pilot Instructor Captain J Ferrand brought me back to reality. Standing on the jetty looking down at me, after making a few observations about the angle of my approach, he instructed my "chief engineer" and I to change places and proceed on the second part of the exercise. We were of course on the lake at Port Revel and our VLCC was a model of 40 feet in length and not 1080 feet.

The reality of berthing a VLCC without tugs might seem a little far fetched had it not been done at Marseilles, Fos, during a prolonged tug strike and been successfully achieved at Fawley by the *Esso Demetia* in 1984 using methods taught at Port Revel. It must be said however that the latter vessel was equipped with thrusters fore and aft. Well, what else do they teach at Port Revel and of what worth is it to the experienced pilot? In this report I will try to describe this unique and valuable facility and answer questions you may have about the centre.

### Participation

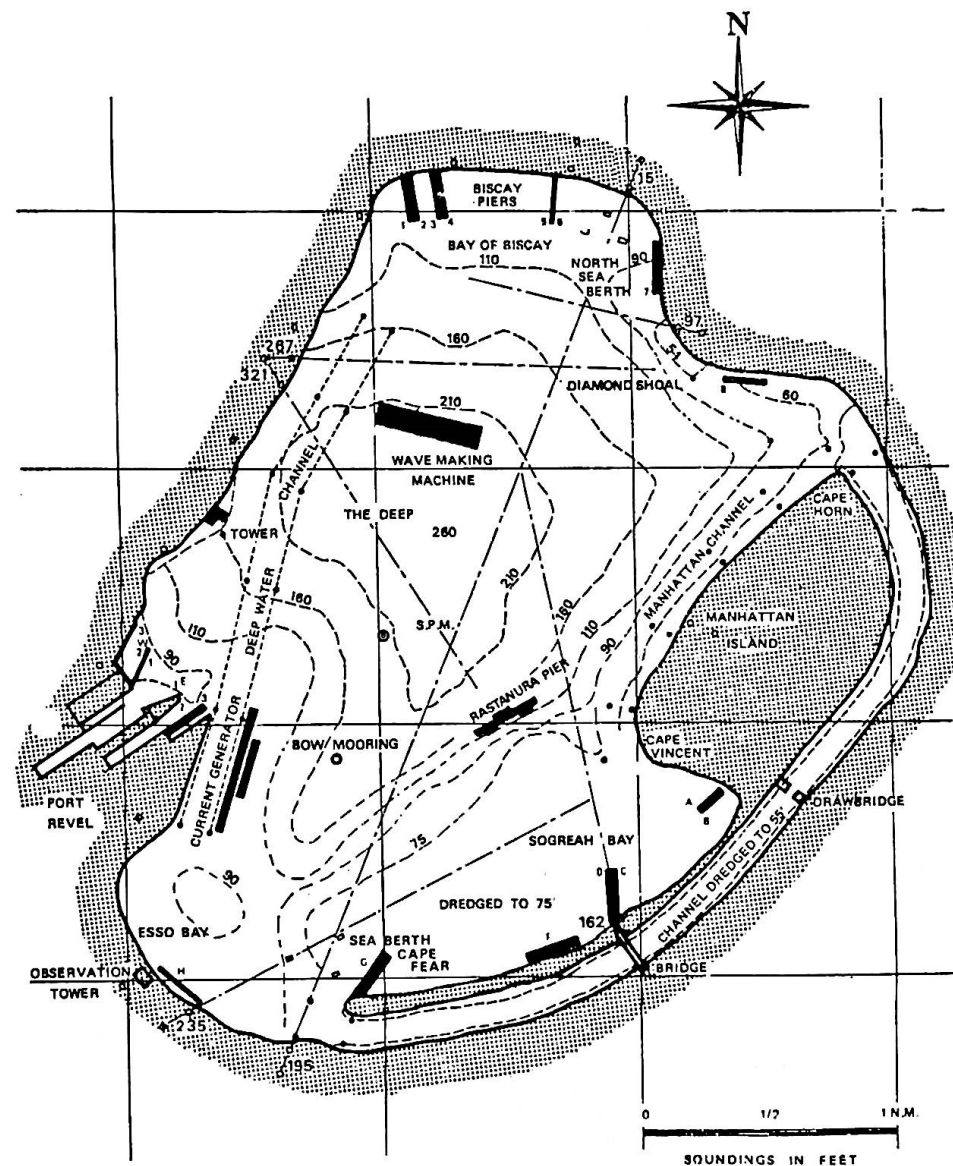
After twenty years experience as a pilot and as currently a berthing pilot at the oil refineries on the Thames, berthing VLCC's and large tankers, and as vice-Chairman of the UKPA Technical Committee, I jumped at the opportunity offered by the Consulting Engineers, SOGREAH, to EMPA to send a representative to the pilots' course for the last week in July. The course had I believe been attended by another member of EMPA and I had heard favourable reports.

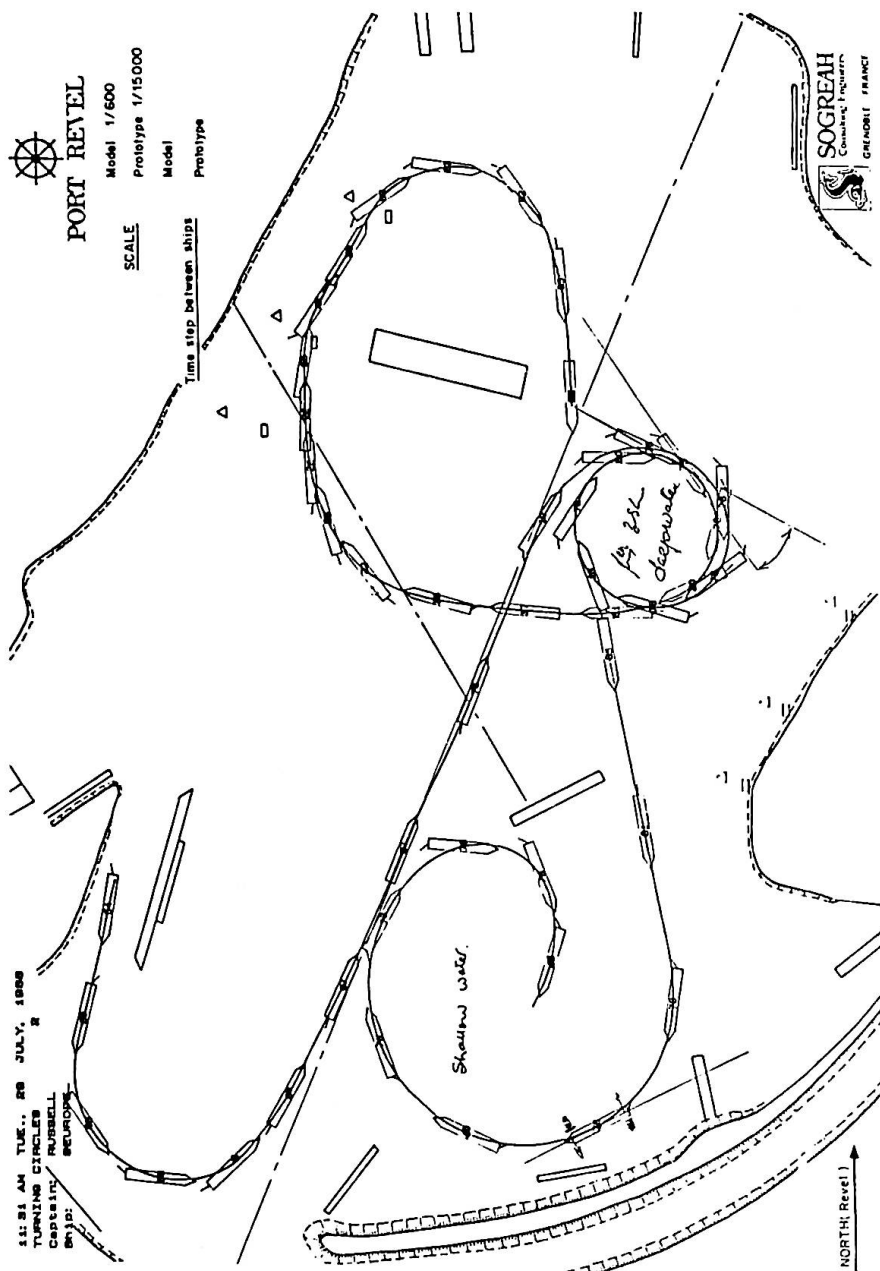
European pilotage authorities have, apart from the French, Norwegian and Danish, been slow to recognise the value of the facilities at Port Revel. Of course initially the places were taken by Esso Masters, Chief Officers and choice pilots but of concern was the price. Today the situation is somewhat different and the centre is recognised and regularly used by pilotage authorities from all over the world. Over 50% of the places are

cumstances of exposure could be significantly different from the pilot launch circumstance. There are cases of people being made unwell by exposure during repair and maintenance work, also by being in a badly ventilated room or instrument space where the air was ionised. Pilots who find themselves in new and different working conditions should at all times remember that radar waves can be hazardous and that care and caution should be exercised when working in close proximity to an emitting source.

MAB

THE LAKE AT PORT REVEL





now taken up by pilots and in fact I joined a course with two Canadians from British Columbia and three from Quebec. The places offered to EMPA have presumably been made available to encourage further use of the centre by European pilots.

Despite finding the course both impressive and realistic, I have deliberately deferred writing this report until after a good period of practical use of some of the ideas I personally learnt at Port Revel. Having used that knowledge in the real world, I feel better able to report on the value of the centre itself.

### The Lake and its equipment

Port Revel is a sheltered man-made lake 250 metres long, situated in the Dauphine Hills between Lyon and Grenoble, France.

At scale, the water area represents a navigable zone of approximately three by two nautical miles, allowing several models to navigate at the same time at normal manoeuvring speeds. While much of the lake may be considered deep water, more extensive shallow water areas have been created, dredged to a scale depth of 75 feet. As most European pilots work in areas of shallow water, this extension of areas is most welcome. In addition there is a Suez Canal section dredged to 55 feet.

The lake is equipped with most types of permanent berth and mooring, different types of buoyed channel and with landing marks on land. Special arrangements are made for pilot courses by the temporary construction of buoyed channels, harbour entrances, berths *etc* to solve new or difficult problems in the trainee's individual pilotage district. All one has to do is take along the chart, explain the problem and efforts are made to simulate the difficulty. I think my colleagues from British Columbia found this aspect of the course of great value in examining problems of new berths on their coast.

Other equipment on the lake comprises a wave generator designed to produce waves of varying heights and also a current generator. Permanent berths *etc* are lit for night navigation exercises.

### The Models

There are at present eight ships; seven of these models represent at scale real tankers or bulk carriers ranging from 17,000 to 400,000 dwt. The eighth is a replica of the liquid natural gas carrier "Ben Franklin" (120,000m<sup>3</sup>).

Each model can operate in the "fully laden" or "in ballast" condition.

The models are fitted out with all conventional features found on board a real ship.

A bridge,

- equipped with helm and rudder indicator.
- telegraph and rpm indicator.
- compass.
- electronic log.
- anemometer.
- bow and stern thrusters which are also used to simulate tugs.
- remote control of anchors.

An engine,

- consisting of a large electric motor powered by a series of batteries which also serve as part of the ballast.

A rudder,  
Mooring lines, including anchors, chain and windlass.  
Navigation lights.

Rudder and engine responses times are respected. These are adjustable, as is the power of the engine, so as to reproduce the characteristics of turbine or diesel engine.

The crew of each model is made up of two trainees; one sits in the wheelhouse and acts as pilot. He has the same angular vision, hence the same perspective as on a real ship. The other trainee fulfills the function of helmsman and chief engineer. His eyes are at deck level so that he can follow and observe the manoeuvres and learn from them.

### The Training

The training which was in the hands of two experienced French pilots Captain P Delesalle and Captain J Ferrand who lectured in English; was divided into two distinct and complementary parts.

(i) The day started with a lecture of two hours beginning at 0800hrs, dealing with an aspect of shiphandling principles and a briefing for the day's practical exercise.

(ii) From 1000 to 1800 we were given practical exercises on the lake relating to the lecture thus allowing application and verification of the principles exposed. Provision was also made for free practice or study of special problems. The Thursday night included two hours of night time practice which proved most realistic.

The pilots worked in teams of two, the teams being changed every day. All exercises were carried out at least twice to give every trainee an opportunity to complete a manoeuvre. The teams used three or four different ships each day. Criticism and comments were given on the spot by the instructors or by discussion of the records taken by the track recording system (see below).

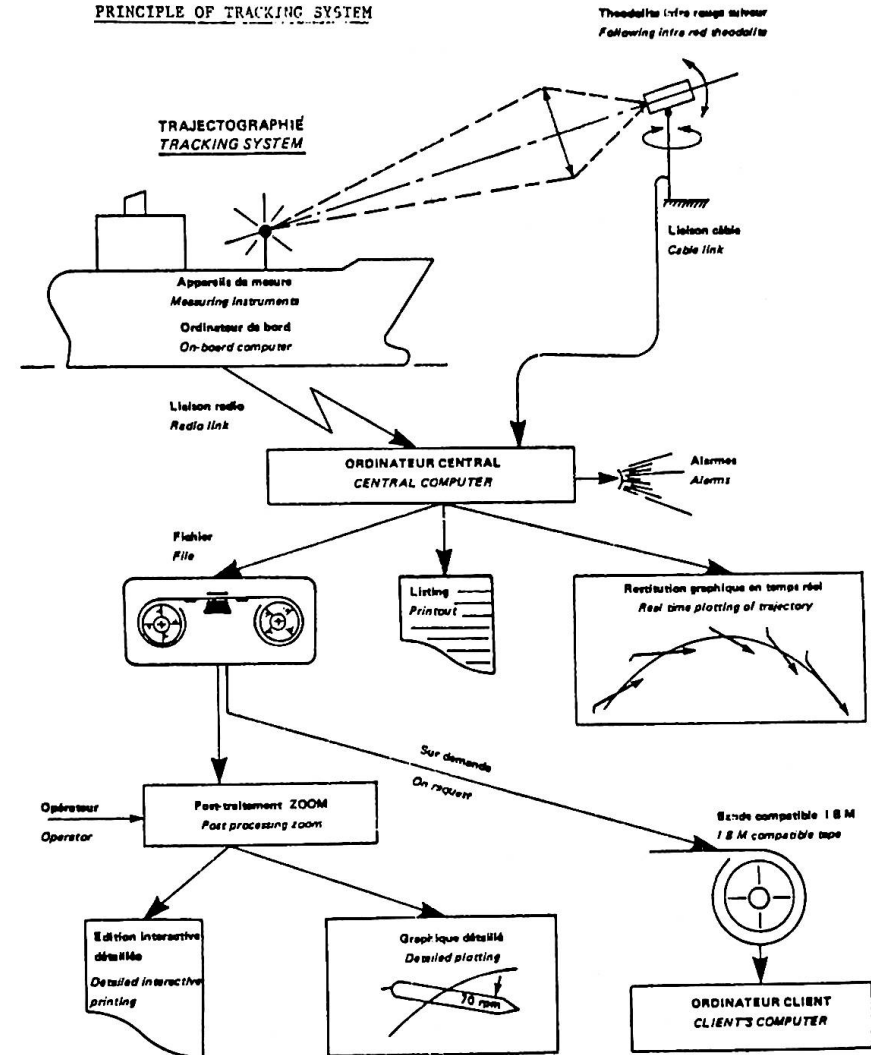
It would be impossible to list all the many manoeuvres carried out during the week but below is a list of a few:

- turning circles in deep and shallow water at different speeds.
- entering a lock
- efficiency of bow thruster used (docking bow in first, then stern in first)
- VLCC, ULCC — ship to ship alongside underway.
- Canal transits — passing and overtaking.
- VLCC skidding into channel in deep water.
- Drift in swell and wind.
- SPM approach against swell and current.
- VLCC berthing dredging anchors.
- Many combinations of berthing operation, mainly after first day without use of tugs or thrusters but much use of anchors.

The lectures on theory covered the whole spectrum of shiphandling under the titles:-

- Forces under direct control
- Forces under indirect control
- Forces not controllable
- Shallow water and bank effect
- Anchors
- Ships and their equipment
- Passing and overtaking

### PRINCIPLE OF TRACKING SYSTEM



PORT REVEL

SHIP'S DIMENSIONS AND DATA

	FENRHOESHIRE 17,000 Dwt	BERLIN 38,000 Dwt	GRENOBLE 43,000 Dwt	GILDA 126,000 Dwt	BRITANNY 190,000 Dwt	EUROPE 285,000 Dwt	ANTIFER 460,000 Dwt	BEN FRANKLIN 120,000 m3 gas carrier
Length B.P.	28' 8" 521' 6"	28' 4 3/4" 860' 0"	25' 0" 625' 0"	36' 2 7/8" 890' 6 7/8"	40' 0" 1000' 0"	43' 2 3/8" 1080' 0"	44' 2" 1104' 0"	33' 6 7/8" 839' 4"
Breadth	2' 10" 70' 3/4"	3' 9 1/4" 94' 6"	3' 10 4/8" 96' 9"	5' 6 1/8" 137' 9 1/2"	6' 2 1/2" 164' 9 1/8"	6' 9 5/8" 170' 0"	9' 2 1/4" 229' 7 7/8"	6' 4 4/8" 134' 6"
Load draught	1' 0 8" 28' 3"	1' 5 1/8" 36' 9 5/8"	1' 6" 37' 10"	2' 3/8" 60' 10 1/2"	2' 5 1/8" 60' 6"	2' 7 1/2" 65' 6"	2' 10 5/8" 72"	1' 5 4/8" 36' 4 5/8"
Load displ. L/T	1.41 22,000	3.2 50,100	3.46 54,077	9.4 146,795	14.2 221,500	16.2 286,000	29.65 463,300	5.70 69,000
Ballast draught	F.	0' 8" 16' 7 7/8"	0' 9 1" 19' 0"	0' 11 5/8" 24' 1 7/8"	1' 4 1/4" 34' 0"	1' 2 3/8" 30' 0"	1' 1 3/8" 27' 0"	No change
Ballast displ. L/T	A.	1' 0" 26' 3"	0' 11 4/8" 24' 0"	1' 6 2/8" 38' 0"	1' 6 3/4" 39' 0"	1' 6 1/4" 38' 0"	1' 7 5/8" 42' 0"	No change
Normal S.H.P.	0.082 6,400	1.81 28,186	1.92 30,030	5.5 86,220	8.26 129,000	9.1 142,000	13.82 216,000	No change
Angular rudder rate Deg/sec.		0.224 17,500	0.224 17,500	0.308 24,000	0.41 32,000	0.41 32,000	0.57 45,000	0.41 32,000
Bow thruster S.H.P.		15.5 3.1	13.0 2.6	17.5 3.5	13.0 2.6	13.0 2.6	11.5 2.3	13.0 2.6
Stern thruster S.H.P.		0.079 1,500	0.014 1,100	0.019 1,500	0.038 3,000	0.038 3,000	0.077 6,000	0.019 1,500
Gross tonnage	10,000	25,000	27,000	67,870	97,000	127,200	195,090	75,000

Ducted Propellers

Having once been given a few grey hairs with a VLCC fitted with a ducted propeller, it was comforting to see at Port Revel that a few models have been fitted with removable ducts so that the comparison between manoeuvres can be taught.

Track Recording System

Like the pilot of a real ship, the trainee often has only a partial view of the manoeuvres he performs. Indeed his constant attention is required by the "real" difficulty of manoeuvring the models, as well as by the fact that time is "shortened". On the lake everything happens five times more quickly than in reality.

To learn and improve from the experience of a particularly difficult manoeuvre one must be able to recall the exact sequence of events, rather than depend on memory or that of the instructor. To satisfy that requirement, the centre was recently fitted with a track recording system which enables reproduction, in digital or graphic form, of the course followed by the model with simultaneous recording of helm and engine orders, speed and heading, wind speed and apparent direction, use of thrusters (tugs).

The Track Recording System works using an infrared theodolite, situated high above the lake on an observation platform, which tracks the model, while helm and engine movements are automatically transmitted by radio to the computer. The result obtained is transcribed either digitally or graphically on a plotting table. It is thus possible to follow constantly the movements of the model and to identify the causes which produce those movements. The trainees are given copies of their own readouts and time is allocated for debriefing.

Conclusion

While electronic simulators may be a useful training aid for open sea navigation, channel navigation or turns at relatively constant speed, it might be said that for berthing, Port Revel begins where simulators end. These large scale models have the "feel" of real ships and do in my experience allow a precise and realistic representation of the manoeuvres of a ship as she approaches the berth. The complex hydrodynamic phenomena which appear in this type of operation (sudden changes in rudder angle and engine speed, changes of depth, presence of obstacles such as quays, open wharfs and other ships) are correctly simulated, as well as the "atmosphere" and the psychological reactions of the pilot on board the model, which play a key role during the manoeuvring of any ship.

How glad I am that I was not put off by those comments directed my way when I first mentioned going to Port Revel. "Going to play about with models on a lake, you must be joking?" "Can't think what you might learn there that you don't know already".

How fortunate I feel to have been able to benefit from this particular course.

How I envy pilots who have authorities or oil companies who recognise the value of these courses and who regularly send trainees and experienced pilots for basic or advanced training. Perhaps, with the great changes to come about in UK pilotage legislation, those responsible in the future will consider such courses as part of normal training.

Certainly I found the models most realistic, the scale constraints no problem and the value of the lectures and practical demonstrations to be most useful. It is one thing to read the definitive books on shiphandling, it is another to be able to go out immediately and put those words into manoeuvres with a "ship" or to be able to experiment with certain theories or ideas of your own, without doing any damage.

I do not think the course will drastically change my methods of berthing after twenty years but I do feel I have learnt a lot in that week at Port Revel, I certainly have gained in confidence and I think I might even be a better pilot.

## “SHIPBUILDERS OF THE HARTLEPOOLS”

Bert Spaldin (*Hartlepool*)

The most important industry in Hartlepool between 1836 and 1961 was shipbuilding. During this period a succession of local yards produced an impressive variety of vessels for both the local and international markets. Thousands of local people were employed in the shipyards as shipwrights, riveters, boiler-makers, engine-builders and craftsmen in the ancillary trades. By 1886, Hartlepool was the third busiest port in England, then the world's leading mercantile marine nation. Hartlepool-built ships were a common sight in ports in every corner of the world.

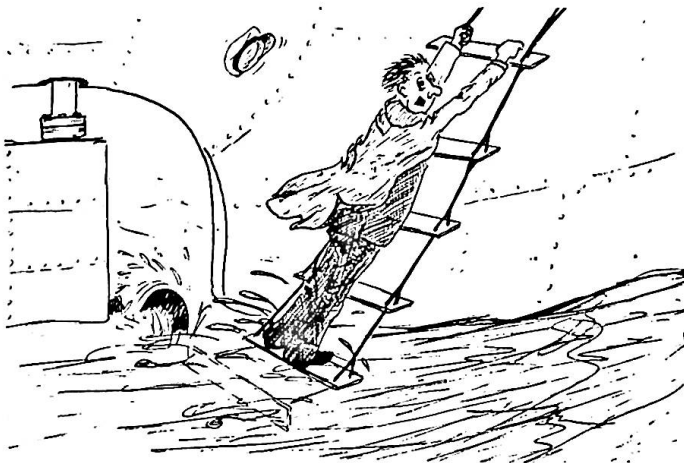
1986 marks the 150th anniversary of the commencement of modern ship-building in Hartlepool and the 25th anniversary of the final launch. It also sees the return to Hartlepool for restoration of the Paddle Steamer *Wingfield Castle*, built by William Gray and Company in 1934. It is therefore particularly appropriate that Hartlepool Borough Council is publishing *SHIPBUILDERS OF THE HARTLEPOOLS*, a handsome volume which has been written by Bert Spaldin, a local sea and harbour pilot.

The co-author of a history of the West Hartlepool Steam Navigation Company, Bert Spaldin has been collecting information and photographs relating to Hartlepool's remarkable maritime history for a number of years. *SHIPBUILDERS OF THE HARTLEPOOLS*, begun in 1980, is the culmination of his painstaking research into the town's shipbuilding industry. It provides a concise history of each of Hartlepool's shipbuilding firms, together with a definitive list of every ship built in the port. An attractively produced book, it will appeal to both shipping enthusiasts and every one interested in Hartlepool's history and heritage.

*SHIPBUILDERS OF THE HARTLEPOOLS* contains 144 pages, printed on high quality A4 paper. It includes 43 photographs, many published for the first time, together with line illustrations throughout. Priced £5.95, it is available from the Gray Art Gallery and Museum, Hartlepool Maritime Museum, the Civic Centre and other stockists. For further information please telephone Hartlepool Maritime Museum (Hartlepool 272814).

## “The Picture Speaks for Itself”

(but the Pilot's observations are unprintable — Ed)

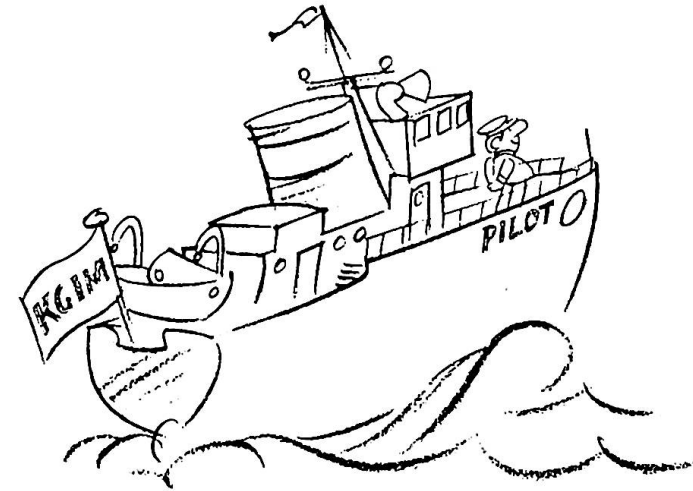


## RECOGNITION AT LAST?

(It seems that free enterprise knows more about the need for special skills than some folk we could mention! Ed)



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