THE PILOT

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NEW TRINITY HOUSE PILOT LAUNCH

The new pilot launch making 23 knots in front of HMS Belfast. The normal River Thames speed restrictions were lifted for this demonstration by the Head of PLA who was on board at the time.

Aircraft style seating for twelve pilots is provided in an upper saloon on the latest fifty foot Trinity House Pilot Launch. Built by Halmatic, to a design by TT Boat Designs, the vessel was recently demonstrated at 23 knots. Intended for a cruising speed up to 22 knots, it is powered from two Rolls Royce C8m410 diesels in a sound-reduced engine-room.

The bridge is compact, simple and comfortable, offering good visibility and equipped with Kelvin Hughes radar, Decca Navigator Mk 21, Ferrograph Graphic 240 and Redifon GR674. From here entry is gained to a forward accommodation-galley with two bunks. The deck and hull are formed in glass reinforced plastic.

The design has taken nearly three years of intensive development and tank testing in close liaison with the engineering and operational departments of Trinity House. The new launch costs in the region of £60,000 and was delivered last month to Trinity House who intend to use it experimentally as a feeder for the pilot cutter which cruises near the Sunk Light Vessel and marks the North East approach to the London pilotage district.

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APPROACH and BERTHING

Suggested Requirements to Simulate Approach Pilotage and Berthing of a Very Large Crude Carrier

K C Davis *(UKPA Technical Committee)*

This paper formed the basis of one recently published in the Journal of the Royal Institution of Naval Architects, to whom we gratefully acknowledge permission to print

Form of information required

The computer operating the simulator would provide movements composed of linear speed and acceleration, and of angular speed and acceleration. Virtually all instructions programmed into the computer would provide outputs in these forms.

Data already known

Deceleration of a VLCC with engines stopped, in deep water, was published as soon as these vessels came into service. Also their deceleration due to astern movements on the engines, and their turning circle in deep water were given.

Pilotage involves, in addition to the hydrography and traffic aspect, the assessment and application of forces to a large mass to get it to a required place at a required time, and the assessment and counteraction in sufficient time of many other considerable forces acting on the "large mass". Many of these considerable forces have never been scientifically measured, as far as I know, but have been roughly measured by pilots for practical purposes, by experience with the pilotage of these and other vessels.

Need for realism

A simulator which does not cause a build-up of stress, through lack of realism in presenting the difficulties the mariner must face, will be dangerous, in that it will breed a false sense of over-confidence in those who have taken the simulator course. This criticism has already been heard concerning both the VLCC simulator in Holland, and various radar simulators in this country.

Simulation of engine movements

The data concerning engine movements mentioned above were secured on "trials" under ideal test conditions, with maximum alertness by engineers, and full operational efficiency. The position in pilotage practice is that an engine movement from *half ahead* to nominal *full astern* has been observed to take between forty seconds and three minutes on different ships of the same design. A movement from *engines stopped* commonly takes between half a minute and one and a half minutes.

Frequently, an engine rung to *stop* is programmed by the engine control gear so that the engine turns *ahead* at 5 rpm. This materially increases the distance and time needed to run off headway.

The amount of astern power obtained when astern movements are ordered commonly varies between the rpm specified and about half to two thirds of this amount.

All these variable engine responses are part of the general pilotage problem of manoeuvring and should be included in a realistic simulator programme. The simulated engine response to the telegraph or bridge control order could be made slow, average or rapid, in time lag, and full or low power in amount.

Simulation of helm movements

Pilots have a rough and ready knowledge of VLCC behaviour in shallow water. It is known that the turning diameter is significantly increased and, as the under keel clearance is reduced, the ship becomes more and more sluggish in response to her helm. These effects should be measured and written into a realistic computer programme. This will be difficult, because of hazard to the VLCC and the expense.

Speed achieved in shallow water

This is an important matter in programming the arrival of a vessel in relation to high water. Some work had been done on the speed achieved in canals before the arrival of VLCCs in service, but the pilot services had to find out the hard way what speed could be achieved in relatively open but shallow water. A pool of practical knowledge now exists, but for a simulator it would be best to make measurements of propeller "slip" in shallow water, and the maximum speed possible through the water in relation to small under-keel clearance, with the ship still steering properly. These practical speeds would need to be programmed into the computer to simulate a pilotage approach to a berth.

OTHER FORCES AFFECTING THE VLCC

Wind

This is a major consideration when planning to berth or unberth. Measurements have been made by the Shipbuilding Research Association when making their investigations into moorings. It would be necessary to write into the computer programme the instructions for fore and aft, thwartships, and angular acceleration for various combinations of wind-speed and free-board of VLCCs, also wind direction.

Real wind comes in puffs and lulls, and is frequently unsteady in direction. It is usual, in a normal northwesterly wind in this country, for the wind to double in speed when a puff follows a lull, causing its force to multiply four times. Its direction can easily swing back and forth twenty degrees. Simulation of a real air stream would be needed for realism.

It is well known that a vessel's lateral resistance increases with its speed through the water. This effect should also be programmed, to provide the simulation of pilot's knowledge that a vessel is most susceptible to leeway when stopped in the water.

Wind can be the limiting factor in deciding whether it is safe to move a VLCC in ballast condition, especially when tug power is limited.

Tidal Stream

Simulation of the effect of tidal stream which is uniform in strength and direction would be the simplest of problems. Simulation of a pilotage approach longer than an hour or so would have to take into account the variation in the strength and direction of the tidal stream.

For a close approach and berthing simulator, correct simulation would be a complex problem if the berth was in a tideway. When approaching such a berth, the pilot has in mind how the tidal streams may be expected to change between the middle of the fairway and the berth. The pilot will have a practical knowledge of the general situation, the presence of fast water, slow water, still water and perhaps an eddy, but will be more concerned with their effect, in terms of the linear and angular accelerations imposed on the vessel, the forces needed to counteract them, and the provision of these forces in sufficient time to preserve control of the vessel. The pilot will have gained experience of coping with this problem from general experience of berthing in a tideway, probably with vessels at the same berth.

A further problem arises when the tidal stream flows at a bend in the fairway, in a curve which is appreciable in relation to the length of the ship. An angular acceleration is produced in the direction of the curvature of the stream, and is most noticeable when the vessel is moving very slowly. Again, the pilot uses judgment in relationship to previous handling of other ships in the same locality. This angular accelerating force would need measurement in order to reproduce pilotage problems faithfully in certain localities.

Tugs and the simulation of their use

This should be relatively easy to simulate, provided further measurements are made. It is a long way from reality to assume that the pilot can apply the published bollard-pull of a tug at will.

It would be necessary to record measurements of tug performance during actual

berthing operations. It would be necessary to record the amount, time and direction in three dimensions of the pull applied through each tug's rope, also the time lag between receipt of order and application of pull.

It is a common experience that tugs with nominally the same bollard-pull appear to pull with different effectiveness, so it is probable that some tugmasters may not always be able to apply their nominal full power.

The direction of the applied pull tends to reduce the effective component of the force applied. With the towage of large ships, the towline leads away slanting downwards, so reducing the horizontal force component.

When the towed vessel has headway on her, conventional tugs find it necessary to work with their towline leading forward of the beam, perhaps roughly at an angle of 45 degrees. This is not ideal, since the pull has a component in the ahead direction as large as in the thwartships direction and so tends to put way into the ship, just as the pilot wants to lose the headway. Also the thwartships component of the pull is reduced. However, this is a necessary safety precaution for the tug, to reduce the danger of the tug being pulled over.

The pilot desiring to stop a ship's swing —"neutralise the angular momentum"— orders the tugs to pull on the opposite bow and the best he can hope for is an oblique pull. He will need to take into account the ahead component of the pull in controlling the headway of the ship.

Minimum pull of tugs

When tugs have been made fast, and are not required to pull for a moment, the towline hangs down in a bight. Pilots have learned that the force exerted by four of these towlines hanging in this way is sufficient to upset the ship's planned loss of headway as set out by the standard deceleration curves. The minimal pull needs measurement for simulation.

Limitations of tugs in countering a swing

Tugs may have been required to nullify a swing to port by proceeding to pull on the starboard bow. Conditions might change quite suddenly and the ship next start to develop a swing to starboard. It takes some time for the tugs to move from one bow to the other. This time lag should be measured. On two counts this lag is unfortunate. In addition to the time lost before the new swing can begin to be corrected, the time lag also allows angular momentum to build up. Thirdly, with conventional tugs, moving as rapidly as possible from starboard bow to port bow, the tugmaster is prone to keep weight on his towline while turning the tug's head from starboard to port in order to take up his new station, while still on the starboard bow of the ship. Thus the tug applies a force to the ship, temporarily assisting the force he has just been ordered to nullify.

Pilots know to anticipate and make allowances for all this, and for realism it would be necessary to programme typical tug performance on the job into a berthing pilotage simulator.

There are ways of coping with these limitations, but no complete cure is known to me. If two tugs are provided forward, they can be "split", one on each bow. Then, at a given instant, **half** the effective tug-power can be applied at once in the wanted direction, instead of all the tug-power a minute or two later.

Others favour the push-pull system. One tug is detailed to pull on the bow, and the other is detailed to push. Sometimes the pushing tug is also able to pull as well, but not so effectively. This system is effective when the vessel has lost headway, but a pushing tug is at a disadvantage in applying thwartships forces when the ship has headway. All these procedures would need to be measured in practice if they are to be properly simulated.

Limitations of tug made fast aft

In general "the tug must go with the ship"—to avoid being pulled over. Tugs made fast aft must, for safety, head forward with the ship, while she has headway, and they must keep enough weight on their towlines to keep them out of the water, clear of the propeller. These tugs also tend to apply force to the ship promoting headway which the ship is trying to lose. They will take station on either quarter, with their lines leading forward of the beam. In towage practice, while the towed vessel still has headway, it is too dangerous for the tug to be moved from one quarter, round the stern, to the other quarter, because of the danger of getting the tow-line in the propeller, but more importantly, because of the danger of girting the tug (pulling her over sideways) as she steams round the stern, trying to keep her line out of the water. Thus an onlooker will see a ship being manoeuvred with a tug fast on each quarter, being turned round still with a little headway on, with only one after tug pulling on the required quarter, the other tug lying meekly alongside the opposite quarter, on the face of it a sad neglect to make use of a tug. A realistic simulation of berthing would require measurement of what the tugs stationed aft could achieve in practice.

Similarly a measurement is needed of what tugs can achieve once a vessel is stopped in the water, for feeding into a berthing simulator.

Other towing systems

These limitations apply to the use of conventional screw tugs with hook amidships.

Tug design and towing methods are undergoing rapid development. The claim has been put forward that tugs provided with the Voith Schneider propulsion system are able to go round the stern of the tow, even when it has headway. There is a need for pooling of pilots' experience of the newer towing systems if comprehensive simulator towing programmes are to be provided.

Tugs alongside

This is a favourite practice in some ports. particularly where there are no lock gates, Again, measurement would be needed to simulate their use in berthing. Objectors to this system point out that although they make fast heading forward, and can indeed make some contribution to taking the headway out of a vessel, they do not do it very effectively, as their power to pull astern is much less than their power to pull ahead. A further objection is that if they are required to turn a vessel, or check it from swinging, the turning moment they can apply is limited to the product of the pull and half the beam of the ship, whereas the conventional tug can apply a moment consisting of the product of the pull and half the length of the ship, which is much greater. Once the headway is off, the conventional tug will achieve this in practice. This method of towing alongside could also be measured and a programme provided for the simulator. Lastly, it never should be forgotten that the tension on a tow rope is not the true indication of the force applied to a ship. An analogy is a man trying to pull a hand cart by leaning forward, keeping one foot on the ground, and pushing with the other against the front of the truck—only part of his effort is effective. It is similar with a tug. That part of the reaction of the tug, its wash from the tug's screw which impinges on the ship's side, is a force which effectively reduces the force applied to the ship through the tow rope. The measurement of this aspect of tug performance is not known to me.

Directional stability of a VLCC

Given sufficient underkeel clearance and reasonable trim, a VLCC steers well while it has sufficient headway. When she has headway, but has lost steerage way, it has often been found that she is directionally unstable, especially when engines are put *astern*. This is the most baffling and difficult manoeuvring problem in a narrow channel, when ship's direction must be preserved. Even when wind and tidal effects do not come into it, it has been observed that if the VLCC has even a very small swing (angular velocity) while it still has headway, on putting the engines *astern*, that swing will be accelerated, whether it was initially to port or to starboard. It is not unusual, on the first astern movement to reduce headway, for the head to swing in one direction. The pilot corrects this with an engine movement ahead and appropriate use of the helm, and the ship is steadied on her required heading. On application of the next astern movement, it is not uncommon for the ship's head to swing in the direction contrary to the first swing. Hence there is difficulty in placing tugs beforehand, all ready to counteract the unwanted swing. Further study is needed of this, but it would be an advantage to feed this behaviour into the computer as a random wandering in direction, needing prompt action. Pilots speculate that these apparently random swings in the ship's head might in part be caused by passing over uneven shallow water or by complex variations in the tidal stream in the immediate vicinity of the ship.

Thwartships component of astern power

Only when the VLCC has nearly lost all her headway does the thwartships component of the stern power become predominant. This force, caused by a *full astern* engine movement, can build up a very large angular momentum which has to be experienced to be believed. It is not unusual to fail to counter such behaviour by the combined pull of three tugs. In general, pilots when berthing VLCCs are unwilling to use more than *half astern* power to take off the way, for this reason. This thwartships force of the propeller would need measurement, both when the ship was stopped in the water and when she had various amounts of headway, in order to provide a realistic simulation of a berthing operation via the computer.

If berthing simulation, as distinct from bringing-up off the berth, is needed, it would be necessary to measure the behaviour of a VLCC being pulled sideways through the water at varying amounts of underkeel clearance. Her behaviour when one end of the ship still has minimal underkeel clearance while the other is in the relatively deep water of the dredged "box" needs investigation for simulation. The pulls achieved by the various items of deck machinery would also need measurement in amount and direction, for simulation.

COMMENT

Perhaps the above will help to explain the view of some pilots that a simulator dealing only with the mass, linear momentum and "trials" manoeuvring capabilities together with perhaps a simple tidal stream and even wind, would not approach in training value the experience gained by training on the bridge and by supervised practice.

If the forces as they occur in practice, as mentioned in this paper, could be measured sufficiently for practical purposes, and were fed realistically into the computer programme, then one visualises that a pilot retraining for handling VLCCs could obtain real benefit, provided it was accompanied by practical training under supervision, before he commenced duties in earnest. A separate programme would be needed for the approach of each terminal.

Tentative suggestion for obtaining measurements

The measurements suggested above appear to make up a formidable list. But VLCCs are successfully manoeuvred by men noted for experience, practical ability and good judgment, rather than for a deep knowledge of the physical forces acting on a vessel. Apart from the measurement of the amount and direction of tug-pulls, the measurement of the other forces might be made by measuring the linear and angular accelerations and momentums which they produce.

If these linear and angular accelerations and momentums could be measured accurately, when the VLCC is subject to only one of the forces under investigation at a time, that might be sufficient to programme a computer for practical purposes. Later, a similarly intensive and very accurate record of a series of piloted passages could be made. By analysis it might be possible to "take out" the responses of the ship to "normal" movements of helm, engines and tidal stream, and so attempt to measure the more obscure but very important forces caused by wind, by astern movements, by shallow water and by irregular tidal stream, as they are found to occur in practice.

Pilots are impressed by the sensitivity and accuracy of the Marquardt sonar Doppler sets. These measure distance made good and instantaneous velocity. It should not be insuperable for designers to derive a record of linear acceleration from this device, by additional circuitry.

SAL logs, which are dependent on the speed of the water along the ship's side are not held in such high esteem.

The Anschutz gyro compass is a very sensitive directional device. It should not be beyond human ingenuity to use this instrument, already present on a VLCC, as an information source for recording the angular accelerations and momentums in a manner sufficiently refined to give meaningful information. Existing course recorders would not do, but the principle on which they work might be used to construct a recording device which would provide the information needed.

INSTANTANEOUS ASPECT

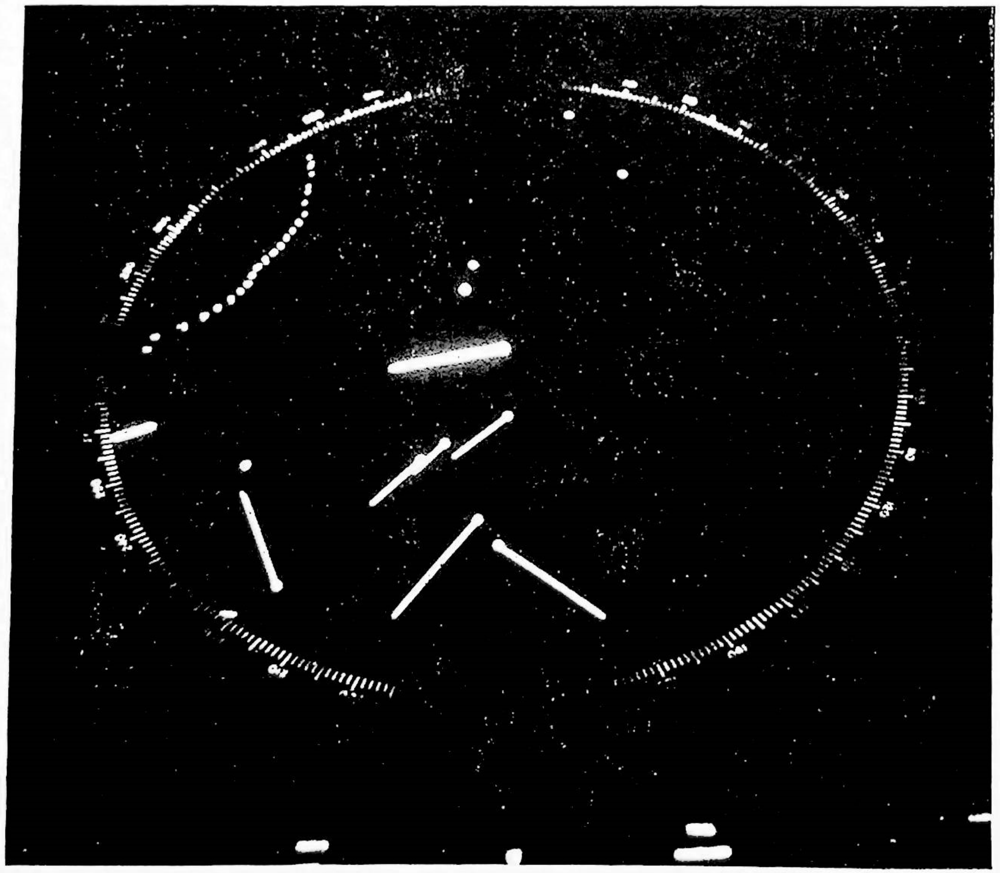
W L D Bayley *(Southampton)*

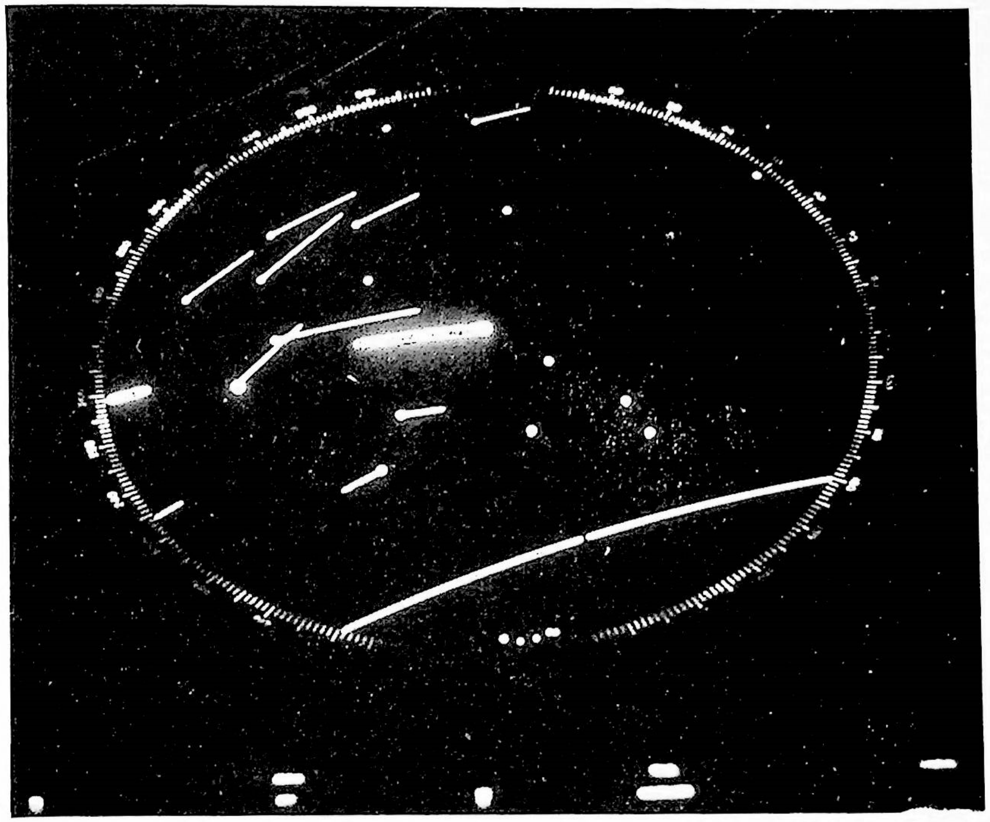
The most important thing that any navigator requires to know about an approaching vessel is its aspect. On a clear night there is no difficulty; the masthead and side lights of an approaching steam vessel are quite unequivocal. It gets a little more complicated with sailing ships. The old doggerel of "red light—reverse bearing and ten points to the right, but not within six points of the wind" must be activated to provide the answer. It is also useful to pray that the answer comes in time! Daytime aspect is in most cases self-evident, although the Royal Navy has done its best to create havoc with the new silhouette of *HMS Blake*, which always seems to be proceeding full astern!

It is when fog, heavy rain or snow bedevil the look-out that instantaneous aspect becomes even more vital to safety. Before the Second World War it was impossible to decide aspect until a visual sighting was made, often at short range. With good ears and a law-abiding target, it was possible

Fig 1. *Digiplot* display of situation off South Foreland, with four targets in the South West lane, two crossing ferries and VARNE and S. GOODWIN Light Vessels.

(Photo: Keith Braeman)





(Photo: Keith Braeman)

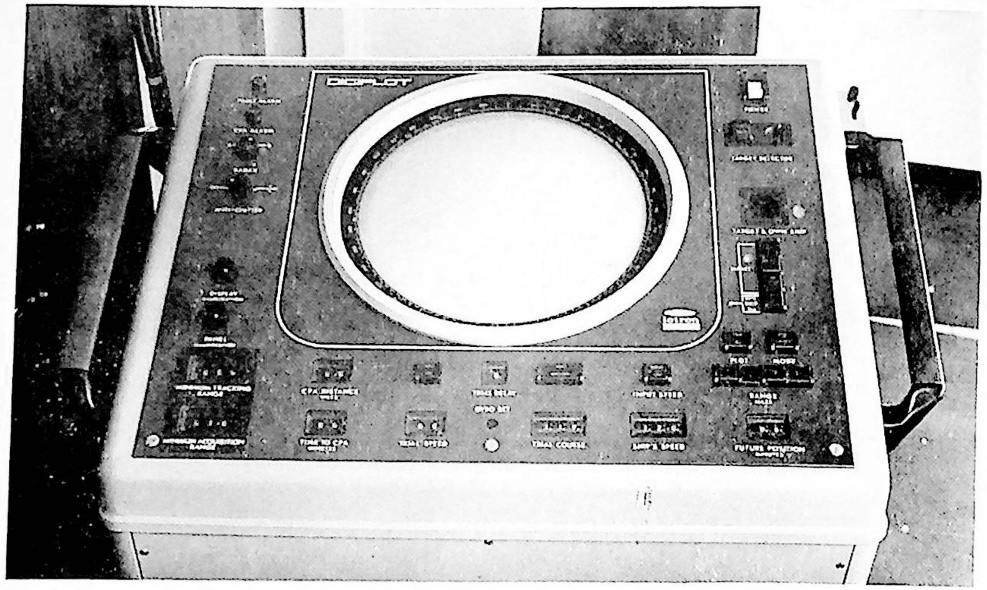
Fig 2. *Digiplot* display off the Dyck, showing six targets in North East Lane, another ferry approaching on a reciprocal green-to-green passing course and two vessels in inshore zone.

to decide that another vessel was in proximity and to get a rough idea of its bearing. There was much seamanlike sense in the requirement of the old Articles to stop and navigate with caution if a fog signal was heard forward of the beam. Radar gave—and basically still gives—only two pieces of raw information about other targets, a relative bearing and a range. Put in a feed from the gyro compass and you can get a true, stabilised bearing. Feed in an impulse from the log as well, and you can have a "true motion" radar.

With all radar displays, the Bridge Thick Weather Manning Scale must include one officer whose sole task is to maintain a plot of all targets within radar range; a formidable task anywhere, but especially so in port approaches and places like the English Channel. The Master or Pilot needs to know the sidelight colour, closest point of approach and time to CPA of a menacing target before he alters course or speed—and any alteration can bring a previously non-dangerous target into the dangerous category.

There have been many attempts to ease the burden on the plotter, from plotting tables, reflector plotters and constant bearing markers to sophisticated electronic wonders resembling Würlitzer organs. The most effective and simplest, in my opinion and, more importantly, in the opinion of the navigators who use it every day, is *Digiplot*. At around £25,000 a throw, it should be!

The American Space Programme has had many "spin-offs" for the benefit of



(Photo: Fuller's of Folkestone)

Fig 3. *Digiplot* console and controls.

Inputs (column at extreme left) include radar/transmitter receiver, gyro compass, ship's speed log. Video processor, azimuth digitizer, compass digitizer, speed digitizer (second column on left) convert input information into machine language and feed to central processing unit. Other inputs to central processor: ship's dynamics (acceleration, deceleration, turning rates) and control panels at top of page.

Output appears on cathode ray tube (upper right). Targets (any object 1500 feet in length) are presented as small circles on screen. Objects longer than 1500 feet (likely shore lines) are displayed as dots. These dots outline the nearest edge of the object.

Variable length vectors (lines emanating from small circles) indicate future positions of targets.

terrestial navigators. *Digiplot*, manufactured by the Iotron Corporation of Bedford, Mass., and distributed by Ferro Marine of London, is one. I was invited by their London agent, Keith Braeman, to see the demonstration rig installed in the Sealink ferry *Vortigern* operating under service conditions on the Dover-Dunkirk route.

It would be hard to find a more testing area in which to operate any plotting device. The course cuts across the main English Channel routes. There is no time for the bridge team to settle down; as soon as the bow pokes out of the harbour entrance the ship is, more often than not, in a multi-risk situation.

Digiplot is quite unobtrusive on the bridge. It looks at first glance like another radar display, but there is no moving sweep and daylight visibility is maintained without a hood. This has the great advantage that more than one person can view and discuss the displayed situation at the same time. *Digiplot* can be plugged in to any existing gyro compass and any type of marine radar operating in the X or S bands. If two (or more) radars are installed, *Digiplot* can be wired to operate from either, thus increasing versatility and reliability. It must be stressed that the device is only as efficient as the master-radar, so it is essential that the ship's radars are well-maintained and well-tuned.

Captain McConnell took *Vortigern* out of harbour with visibility of less than nine cables. I could take my pick of radar sets—none of the ship's people was interested. They were all clustered round

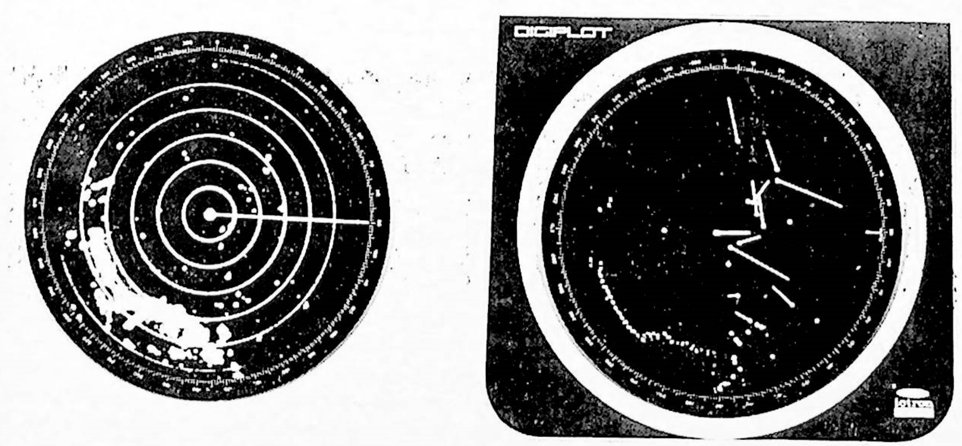
the *Digiplot*. I counted at least twenty-five echoes within six miles; twenty-five pieces of useless raw information.

The *Digiplot* display was quite different. All shore echoes showed as tiny dots—the computer measures the length of echoes and, if more than 1,700 feet, classifies them as shore features, presenting them as dots. Smaller echoes show as circles, with vectors if moving. Ships' courses and speeds are used to generate the vectors, with an additional factor added by the navigator. He decides on a future-time factor of up to 59 minutes, and feeds this into the computer. For example, let us say that own ship's course is North, speed 17 knots and, for a future-time setting of 6 minutes, 1/10 of an hour is given to the computer. Immediately, a vector grows from the centre circle marking "own ship", heading 000° with a length of 1.7 miles. All other ships grow vectors showing their positions in 6 minutes. Some are obviously diverging, others clearly cross ahead or astern by large margins. Others fall into a doubtful category. The Master decides that he needs to know which ships are going to pass within one mile—and he needs this information 12 minutes before the situation arises! No bother—he sets the CPA alarm with this data and relaxes. If any target is going to violate his safety fence, an audio-alarm gives 12 minutes warning, and the offending echo becomes brighter than the others. A small joy-stick allows an interrogating circle to be locked on to the target and, by operating a set of buttons, the Master obtains the target's present true bearing and range, target's true course and speed and time to CPA with CPA distance. He has all the information he needs to decide if an alteration of course or speed is necessary. The Master can now inform the computer that in, say, three minutes he is going to alter course to 045° and reduce speed to 10 knots. He then presses a Trial Manoeuvre control, and the computer speeds up the trial motion to 30 times "real time". The Master sees if his projected manoeuvre is effective and, more important perhaps, if this manoeuvre will bring any previously safe target into a dangerous CPA.

Digiplot analyses all radar echoes within 17 miles, irrespective of the scale display in use, differentiates between land and sea echoes and holds the closest 200 targets, which are continually monitored to track, plot, select and display the 40 most threatening echoes. It takes only three sweeps of the radar scanner to establish a change of course or speed; digital filtering ensures the accurate display of present course and speed. The information does not have the age of information gained from normal plotting methods. Own ship's

Fig 4. Conventional and *Digiplot* displays compared off Boston Harbour.

(Photo: Iotron Corp.)



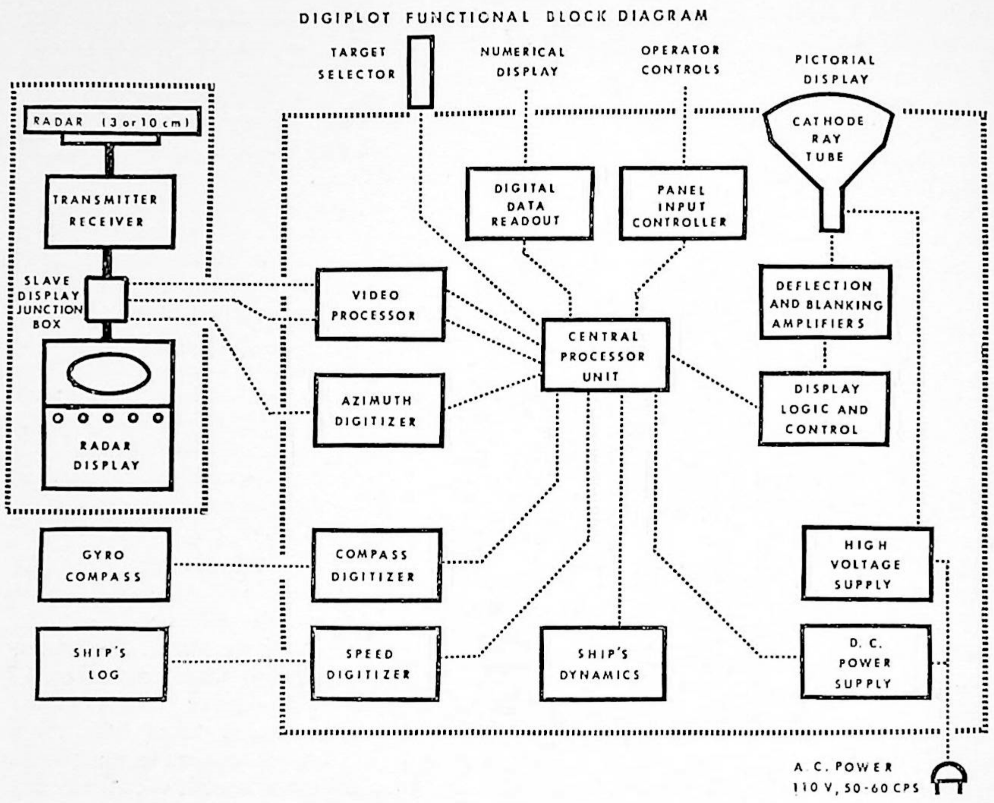


Fig 5. For the Boffins! Simplified Block Diagram of *Digiplot*

handling characteristics are built into the computer. *Digiplot* is particularly good in the "end-on or nearly end-on" confrontation, when conventional plotting can produce ambiguous information. *Digiplot* is unambiguous, accurate and reliable. Captain McConnell came to it with some reservations, but is now full of enthusiasm and praise for its accuracy and reliability. It is also very simple to operate and after 30 minutes tuition I, who had never seen the equipment before, was competent in its use. Shipboard maintenance is well within the scope of the average Second Mate, being mainly a mere changing of trays when a faulty component is (rarely) discovered.

Facilities other than collision avoidance are available. Most interesting to pilots is the magnetic recorder, which preserves the previous 45 minutes of display for play-back if required. This could be useful in training and also in the event of a casualty. Other extras include stability calculations, ship's accounts and navigation systems.

The value of *Digiplot* cannot be questioned in main open water traffic routes or in estuarial approaches. With narrower channels and dock approaches, its value, in my opinion, diminishes. However, it is always desirable to know, for example, immediately that dam'-fool yachtsman on the edge of the channel alters course across your bows!

A Dutch colleague from Dirkzwagers also made the trip; his assessment is similar to mine. He, too, feels that *Digiplot* cannot replace shore-based radar for narrow channel work. Our practical approval is also borne out by the man with the money, the ship-owner. *Digiplot* has been, or is being, installed in five LNG carriers totalling 420,000 m^3 capacity, 36 tankers totalling more than 7 million dwt, 21 container ships and 12 other vessels. Four Russians ships are included in these figures.

(continued at foot of next page)

OBITUARY

Stuart Jenkins

Stuart died suddenly in Grangemouth on 4th January 1974 at the age of 49. He will be sorely missed.

After starting his career with Furness Withy he became Master with Regent Tankers and ultimately joined the Grangemouth pilots in September 1961.

He leaves a widow and three children who have our deepest sympathy.

Alan Newport

We regret to learn of the death, last October, of Alan John Newport, an Elder Brother and Member of the Board of Trinity House since 1969.

He went to sea in 1944, serving in the Mediterranean and Far East, joined Common Brothers in 1947 with whom he obtained his first command in 1955. In 1961 he joined the Marine Survey Service of the Board of Trade and in 1966 was appointed Director of Marine, Government of Fiji.

Harry Gateshill

We report with regret the death on the 8th December 1973, of serving Humber Pilot H C Gateshill.

Harry, who was 56, was born in South Shields and served his apprenticeship in the Prince Line. He obtained his Master's certificate in January 1944. During the Second World War he served on the AHL vessel *SS Bury*, carrying out rescue operations, and as second officer took charge of a lifeboat. He received a plaque on which is inscribed "With the gratitude of 178 officers and men rescued in the North Atlantic May 11th-12th 1942".

He joined the Humber Pilot Service in 1949 and he became well known because of his Geordie accent, which at that time was unique in the service where the pilots were predominantly Yorkshiremen.

Harry was a good and conscientious pilot, well respected and popular with his shipmates, and will long be remembered. Our sympathy goes out to his widow Ella and his two extremely gifted sons.

RBC

Charles Pearce

Only two days before he was due to retire at 67, Trinity House Pilot Charles John Griffin Pearce died suddenly at his home in Southampton. On the previous day he had piloted the *Nordic Waser* out of Southampton.

The local *Echo* reporting his death, quotes former senior pilot Jack Holt, "He was a very efficient pilot and one of the most popular men in the service".

Formerly working in the Bristol Channel area, Charles Pearce was appointed to the Isle of Wight pilotage service as a temporary pilot in 1944, shortly before the D-Day operations in which he took part. Subsequently, he was appointed to Southampton and became choice pilot for Holland America and Chandris Lines.

He devoted much time to the UKPA and was at one period the district representative. He leaves a widow and daughter to whom we offer our sympathy.

My trip in *Vortigern* showed me that some manufacturers are listening to what the navigator actually wants, and not trying to sell him something that they want him to want!

Coastlines

Teenage Exchange: Antwerp

The 17-year old daughter of a River Scheldt Pilot is anxious to improve her English, before going on to higher studies, by staying with a family in UK for a few weeks (preferably near London where English lessons can also be taken).

If a British family with a girl of similar age would care to reciprocate, the offer is made to spend the month of August near Antwerp and to join the Belgian family on holiday on a boat. Would those who might be interested please write direct to

Miss Marit De Blende,
Wielewaalstraat 21,
2610 Wilrijk (Antwerp),
Belgie.

Pilot Cutters

Too late to compete for front cover picture place, we learn of the launching in February of a fine new vessel for the Clyde Pilotage Authority. Their first in glass fibre construction, this 60-foot cutter will halve the time to the limit of the pilots' jurisdiction, off Gailes on the Ayrshire coast. With its speed of 18 knots, it is the fastest pilot boat in Clydeport. The hull was moulded by the Tyler Boat Company in Kent and brought to Sandbank for fitting out by Alexander Robertson & Sons who built Britain's last two America's Cup challengers. "And good luck to all who sail in her!"

Register of PCs

Last year the Association wrote to all Districts asking for information on pilot cutters in use round the country to be made into a register.

Mr. John Farmer (Clyde) undertook to collate the information on behalf of the National Technical Committee, and at a meeting of the NTC held on 26th February he produced the completed book.

The Register will be available at the offices of the Association in Peel Street for the information of members, or if any District would care to borrow the Register at any time we would be pleased to post it to them on request.

Mr. Farmer has agreed to keep the Register up to date as far as the information available to him will permit, and if any Station which has not so far contributed information regarding their Pilot Cutters would care to do so, he would be pleased to include further details.

The Association wishes to record its thanks to Mr. Farmer for all the work he has put into this project, and for the excellent presentation of the Register.

Small Craft Safety

Safety on the Solent was given novel emphasis last summer by the combined efforts of the Isle of Wight Rural District Council and Trinity House who lent *THPV Vanquisher* to visit yachts and small boats at their moorings during Boat Safety Month.

Coincident with a Small Boat Safety Exhibition at Cowes, the visits to boats afloat in the Medina were received with enthusiasm and, as the Prime Minister said during his visit to the exhibition, the fact that Trinity House and their pilots were prepared to put in this voluntary effort had an enormous impact.

On board *Vanquisher* were Officer in Charge of Isle of Wight Pilot Vessels, Mr Jack Sharpe, Launch Officers, Messrs W Bell and M Rose, together with Pilots Watson and Robson and a local Coastguard Officer. They distributed information pamphlets, gave advice and answered queries on many aspects of safety at sea.

There may be a cue here for other districts in which, like the Solent, pleasure sailing and merchant shipping co-exist at some hazard to both parties. In 1972 there was created the Solent Standing Committee for the Safety of Small Craft to represent all local authorities in the Solent area and other bodies having licensing jurisdiction over small craft as well as national authorities connected with safety at sea. Its aims are to standardise and enforce the regulations for small passenger carrying craft and to consider all matters relating to the safety of small craft in general operating in the Solent area.

We are indebted to Trinity House for this very encouraging item of news and we would like to congratulate the Board for their whole-hearted support of the venture. The good work has not ended with the summer exhibition though, for the IOW District Pilot, Mr P B W Watson, was recently elected Chairman of the Standing Committee.

George Dawson Retires

After nearly 56 years of seagoing experience, George Dawson will be succeeded as Senior Trinity House Pilot by Bruce Bell at Southampton. The Dawson tradition began with his father who was a pilot for 50 years before retiring in 1939 and George entered the Royal Navy, first going to sea in *HMS Worcester* in 1918.

Proceeding to the Union Castle and Royal Mail lines, he served in the *Gascon*, *Chepstowe Castle*, *Arundel Castle*, and *Arlanza*. He obtained his master's certificate in 1930 and joined the pilotage service in 1937 where he was on the inward service, Isle of Wight.

Throughout the war he was mainly on minesweepers in the Royal Naval Reserve as well as for several months on convoy escort duties to Russia. In 1944 he was awarded the Distinguished Service Cross.

Returning to pilotage in peacetime, he transferred to the outward service from Southampton in 1950 and was appointed a sub-Commissioner of Pilotage (IOW District) in 1954 and Senior Pilot in 1969.

His main hobbies, it seems, are growing roses and grandchildren, in the affairs of which we wish Mr and Mrs Dawson much happiness. George also holds some firm views on the pace of modern life and, far from regarding the passenger liner as on the verge of extinction, he believes that the speed of life has to be reduced and that people will progressively turn to ships with pleasure.

SCOP Scoop!

Our special correspondent, Nigel Moir at the Civil Service College, Sunningdale, where a week-end SCOP meeting was held in February, sends this post-prandial rhyming contribution:

SCOP, SCOP, beautiful SCOP,
Nothing quite like it for quitting the shop;
So travel, unravel,
And hammer the gavel,
And let us drink deep to John Archer and SCOP.

SCOP, SCOP, glorious SCOP,
Keeping Authorities right on the hop;
We visit and quizz it,
Expenses? Oh, swizz it,
Get on with the Act
And please relish your SCOP.

SCOP, SCOP, hasty old SCOP,
With Government change it will be a great flop,
So, hurry our story,
And Dan please vote Tory
Ensuring the fruit of the labours of SCOP.

SCOP, SCOP, heavenly SCOP,
In matters of management it is the top;
With John, Ted and Ronnie,
The paperwork's bonnie
For covering cracks in the surface of SCOP.

SCOP, SCOP, juicy old SCOP,
For making a clean sweep we're like Mrs Mop;
All joy to the nation,
Enjoy SCOPulation,
And call all the progeny 1, 2, 3 *SCOP.*

Aberdeen	H. McKilligan ...	Aberdeen Harbour, North Pier, Aberdeen
Ardrossan	A. Caldwell	13 Chapelhill Mount, Ardrossan, Ayrshire
Barrow-in-Furness ...	R. Moore	Windswept, 35 Roa Island, Barrow-in-Furness, Lancs. LA13 0QL
Barry	J. Bennett	Brent Knoll 92 Port Road East, Barry, Glam.
Belfast	W. J. Kirkpatrick ...	15 Downshire Gardens, Carrickfergus, Co. Antrim, N. Ireland
Bridgwater	C. Muller	124 Worston Road, Highbridge, Somerset TA9 3JX
Brixham	R. J. Curtis	Abri, 31 Gillard Road, Brixham, Devon TQ5 9EG
Cardiff	E. F. Williams ...	39 Arles Road, Ely, Cardiff, CF5 5AN
Clyde	J. M. Farmer ...	239 Eldon Street, Greenock, Renfrewshire
Colchester	P. Hills	26 Regent Road, Brightlingsea, Essex
Coleraine	W. Dalzell	Harbour Office, Coleraine, Co. Derry, N. Ireland
Exeter	B. L. Rowsell ...	17 Camperdown Terrace, Exmouth, Devon
Falmouth:		
Sea	R. T. Williams ...	14 Arwenack Street, Falmouth, Cornwall
River	J. Timmins	1 Ponsharden Cottage, Ponsharden, Falmouth, Cornwall
Fowey	M. H. Randolph ...	Elm Cottage, East Street, Polruan-by-Fowey, Cornwall
Gloucester	B. H. Richards ...	Southerly, 60 Combe Avenue, Portishead, Nr. Bristol, BS20 9J5
Goole	A. R. Wild	31 Airmyn Road, Goole, Yorks.
Grangemouth ...	R. C. MacMillan ...	31 Crichton Drive, Grangemouth, Stirlingshire FK3 9DF
Hartlepool	B. G. Spaldin... ...	24 Kesteven Road, Fens Estate, West Hartlepool
Hull	R. B. Campbell ...	25 Taylors Avenue, Cleethorpes, Lincs.
Inverness	T. H. MacDonald ...	Nyhavn, 14 Leys Park, Inverness
Ipswich	J. Wright	"Rosapenna" 9 Cliff Lane, Ipswich, Suffolk
Isle of Wight... ...	A. T. Tulloch ...	Fairways, Palmer's Road, Wootton, Isle of Wight.
Lancaster	H. Gardner	Greystones, 128 Morecambe Road, Lancaster
Leith	L. M. Smith	64 Trinity Road, Edinburgh, 5
London:		
Cinque Ports ...	J. A. Cresswell ...	361 London Road, Deal, Kent
Gravesend Channel	P. A. E. Roberts ...	Utne, Conifer Avenue, Hartley, Dartford, Kent
River	D. W. J. Hobday ...	Pentlands, Stock Lane, Wilmington, Dartford, DA2 7BY
Medway	T. G. Hannaford ...	175 Wards Hill Road, Minster, Sheppey, Kent
North Channel ...	N. Walker	Wild Acres, Steam Mill Road, Bradfield, Manningtree, Essex
Londonderry ...	C. M. O'Donnell ...	3 Oakfield Drive, Londonderry, N. Ireland
Lowestoft	J. E. Johnson ...	Westing Down, 44 Gunton Church Lane, Lowestoft, Suffolk
Middlesbrough ...	W. E. Guy	25 Wheatley Close, Acklam, Middlesbrough
Milford Haven ...	M. A. Haigh ...	Gannet's Lodge, Church Hill, Llanstad Well, Pembs.
Neath	A. Bosher	24 Thorney Road, Baglan, Port Talbot, Glam.
Par	R. F. Dunn	Hillmere, 7 Polmear Road, Par, Cornwall
Plymouth	E. Rogers	Pilot Office, 2 The Barbican, Plymouth, Devon
Poole	E. S. Haines	Pilot Office, Town Quay, Poole, Dorset
Portsmouth	M. Sparkes	Trinity House Pilotage Service, Victoria Pier, Portsmouth
Port Talbot	J. Parry	6 Hazel Close, Dan-y-Graig, Porthcawl, Glam.
Preston	H. Halsall	Pilotage Office, The Docks, Preston, Lancs.
Prestatyn	A. M. Hatton ...	39 Grosvenor Road, Prestatyn, Flints.
St. Ives	J. W. A. Dew ...	92 St. Johns Street, Hayle, Cornwall
Shoreham	T. N. H. Dalton ...	5 Willow Close, Lancing, Sussex
Southampton ...	K. E. Powell ...	Pilot Office, Berth 37, Eastern Docks, Southampton, SO1 1AG
South Shields ...	J. A. Hogg	1 Eden Garth, Cullercoats, North Shields, 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 ...	6 Marine Terrace, Teignmouth, Devon
Trent	W. L. Smedley ...	257 Beverley Road, Kirkella, Nr. Hull, E. Yorks.
Wisbech	T. Harris	3 Baxter Close, Wisbech, Cambs.
Workington	M. Ditchburn ...	68 Loop Road North, Whitehaven, Cumberland
Yarmouth	G. M. Logie	71 Marine Parade, Gorleston-on-Sea, Norfolk

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