

Operation Pluto

Chapter Six : Force 'Pluto'

Although the requirement for most of the new and strange devices which appeared during the war came from Combined Operations Headquarters, there was in the Admiralty a department designed to deal with such items as affected the navy. This was M.W.D., which stood for Miscellaneous Weapons Development, and in general this department was responsible for any weapons or devices of war which did not fit into the long established branches, such as gunnery and torpedo. The dividing line where Combined Operations left off and Miscellaneous Weapons Development took over would be hard to define and no doubt there was a certain amount of overlapping, but there do not appear to have been any major tussles.

With the success of the early Pluto experiments and trials, the eventual provision of ships and crews for the operation became a problem. Already the massive requirements of the conventional forces were becoming difficult to meet as the various branches of the fighting services endeavoured to make certain that they had their full share - and often a certain amount more than that. As being something new and strange and not immediately claimed for adoption by any other department at the Admiralty, Pluto soon found its way to Miscellaneous Weapons Development and, even in that home of unusual devices, was received with incredulous wonder, if not actual antipathy. A senior member of the staff was a retired submariner, Captain J.F. (Jock) Hutchings, D.S.O., who had been recalled on the outbreak of war and who was

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affectionately known in the service as 'Mad' Hutchings. It was decided that he was just the man to see what Pluto was made of. He described his initiation into the underworld, or rather the world of underwater pipelines thus:

"The next morning at Miscellaneous Weapons Development the Director, Captain Jeans, came to me holding an official letter in his hand and said derisively,

'There's a lunatic who wants to wind ^{seventy} miles of steel pipe round a big drum forty feet in diameter which is afloat at Tilbury. They want our help. You had better look after him' ".

The 'lunatic', who turned out to be H.A. Hammick, was attached to the Petroleum Warfare Department, together with B.J. Ellis, the other half of the Hamel inspiration. Although Captain Hutchings did not give a date for this encounter, it ~~was probably about~~ ^{was} March, 1943, ~~which was~~ when the first lengths of Hamel pipe were wound on the drum of the hopper barge which became H.M.S. Persephone, *but in fact this was done in Portsmouth Dockyard*

At this time also the work of connecting up the shore end of the Hais cable laid by H.M.S. Holdfast from Swansea to Watermouth was still incomplete and Sir Donald Banks, Director of the Petroleum Warfare Department, expressed concern at the delay and the fact that affairs were not being properly co-ordinated, as there was no overall authority responsible. The mantle, not un-naturally, descended upon Miscellaneous Weapons Development and Jock Hutchings in particular and he was soon involved in the complicated exercise of foreseeing the likely requirements of the force necessary to handle the laying across the Channel of the Pluto pipelines. This operation only bore a casual resemblance to any cable laying which

had been done before, since the weight of the Hais cable and the very different characteristics of the Hamel pipe necessitated different ships, different gear and different techniques. All these had to a large extent to be imagined as there were no text books to advise and experimental work could be little more than a token owing to the time factor. There was barely a year left before the proposed date of the operation and during that time the ships and craft and their equipment had to be designed, built and given at least some sort of a test to make sure everything would, or at least could, work.

How long it took Captain Hutchings to decide what Force Pluto should comprise is not known, but the oil experts and the people who had been responsible for the early experiments, in which officials of the Post Office with great experience of cable ships advised and assisted, had already formulated preliminary plans. One of the more frustrating aspects of experiments and trials is the fact that people coming in to a project at a later stage nearly always want to start experiments and trials of their own and usually without due cause or inducement. With Pluto the progress of the preparations was hampered by ~~a great deal of~~ antagonism from certain high ranking officers and from the start it was clear that whoever undertook to organise Force Pluto, was going to have something of a private battle on his hands. Not that there were not plenty of influential allies - there were. But with all resources strained in the efforts to provide the necessary equipment for the invasion, a comparatively late starter like Pluto was looked upon with some disfavour by departments already overstretched. Captain Hutchings was far from dismayed by the prospect facing him when he

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(Short title SNO) was told that he was to be appointed Senior Naval Officer, Force Pluto. It is likely that he considered the benefits of what was almost an independent command outweighed the difficulties of mustering the necessary forces. The difficulties of the actual operation lay some distance ahead and it is perhaps as well that the trials and tribulations to come were not revealed to Captain Hutchings at the time, or even his enthusiasm and ardour might have suffered.

(A) below In the early stages of the planning for the re-entry to the Continent, the main landings were supposed to take place in the Pas de Calais area. It is possible that this was a deliberate leak rather than a planning fact, for there were many indications that a longer crossing for the invasion fleet was envisaged. However, as far as Pluto was concerned, there was a change from consideration of the necessities for twenty to thirty mile pipelines to sixty to seventy miles for the bulk supplies after the initial assault, the landing area being moved westward to Normandy and the Cotentin peninsular. The increase in the length of the pipelines necessary to reach from southern England to Normandy not only required considerably more manufacturing capacity, but also large ships to carry the much greater weights and provide the space needed for stowage. Before one problem was solved another one seemed to have overtaken it, usually with no facts to go on. So Captain Hutchings and his advisers were rather in the position of the prophet Daniel, when Nebuchadnezzar asked him to expound both the dream and the interpretation.

Many of the bits and pieces necessary were already decided upon and their manufacture in some cases was well under way. As far as the Hais cable was concerned, there

(A) Certainly the first Pluto proposals were based on the short channel crossing.

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were few doubts about the practicability of the laying operation now that the necessary cable control and handling gear, and the ships themselves, could and would be prepared in time. The main problem with the Hais cable, connecting to the shore at the end of the lay, due to the fact that the cable ship could not approach the shore closer than the five or six fathom line and would have to drop her end there, had been solved. This was done by adopting the suggestion of the professional cable layers and it seems somewhat astonishing that they had not been consulted earlier. Or, if they had been consulted, that their methods had not been tried. An explanation for this fact may be that, even in war time, there was a great deal of departmental jealousy and a certain amount of what might be considered internecine strife. Indeed, to some extent this happened with the whole Pluto project which went through a period of pull devil, pull baker as various authorities exerted their influence. Within the naval administration rather the reverse was the case with a tendency for departments to treat Pluto as a hot potato.

None of this deterred Jock Hutchings and he was perhaps at times a little too ready to go into battle with what he considered to be the sceptics, laggards or amused onlookers, whatever their rank. He, and eventually most of his team, developed an almost fanatical belief in the project and it is likely that, certainly as far as Captain Hutchings himself was concerned, Pluto was the key to success or failure of operation 'Overlord'.

Hutchings submitted his proposals for the composition of Force Pluto to the 4th Sea Lord, Admiral Petrie, and Sir Alfred Hearn, Oil adviser to the Admiralty, was present

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at the meeting. Later he met Admiral Sir Bertram Ramsey, Allied Commander in Chief, Naval Expeditionary Force (short title ANCXF), and Mr. Geoffrey Lloyd, Secretary for Petroleum in the Ministry of Fuel and Power, and the outline of the Pluto requirements was discussed and agreed. In his notes, Hutchings suggests that Admiral Creasy, Chief of Staff to Admiral Ramsay, was not so sanguine of the success of Pluto and ^{SR}~~Senior Naval Officer~~, Force Pluto, ~~(SNO)~~ clearly could not understand how anyone could doubt the importance and ultimate success of the project. There can have been few people connected with 'Overlord' who would have credited Admiral Creasy with being anything but a very shrewd and capable naval officer and administrator. ^{and} There were possibly many people who ultimately considered his judgement on Pluto was sound.

Hutchings moved to offices at Norfolk House in St. James' Square which, at that time, was the headquarters of Admiral Ramsay, ^e(ANCXF), and the military planner in chief, Lt. General Morgan, Chief of Staff to Supreme Allied Commander (COSSAC). ~~Norfolk House had been the home of General Morgan, who was responsible for that stupendous task,~~ ^{the} military planning of operation 'Overlord' and ~~who does~~ ^{may} not seem to have received suitable ^{appreciation} ~~recognition~~ of his efforts.

In the early stages, the overall responsibility for Pluto was vested in the Director of Miscellaneous Weapons Development, but as the work progressed and the problems began to affect a wide area of administration, there was a period of discussion aimed at deciding whose baby this somewhat doubtful creature might be. For his

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General

part, Mr. Geoffrey Lloyd (now Lord Geoffrey-Lloyd) placed the responsibility for Pluto in the hands of Sir Donald Banks, Director of the Petroleum Warfare Department which dealt in such things as flame throwers and Tido, the fog dispersal device for airfields, but since the whole scheme depended on what was undoubtedly a naval operation, namely laying the pipelines from England to France, responsibility had to be divided. In April 1943 it was agreed that the Navy had marine responsibility from high water mark to high water mark and the War Office responsibility for general supply arrangements in conjunction with the Petroleum Board. The Petroleum Warfare Department, in addition to progressing and co-ordinating the plan generally, were given the task of erecting and controlling the pumping arrangements on the English shore. At this point, Combined Operations, who had handled Pluto ^{for} ~~from~~ the armed services and initiated the fundamental sea experiments and trials, stood aside, no doubt with the feeling of having given a vital operation a handsome start.

War

The ~~new~~ Office representative for Pluto matters was Colonel (later Brigadier) 'Tiny' Bond, a very tall, very efficient soldier. A near relation of Combined Operations Headquarters, a department at the Admiralty dealing with Combined Operations Material was in the charge of no less a person than Lord Reith, so it was obviously of some importance. Lord Reith suffered rapid promotion in the Royal Naval Volunteer Reserve somewhat to the astonishment of members of Mountbatten's staff. Two army and one naval officer from Combined Operations Headquarters were walking along Whitehall on their way to a services club in Craig Court for lunch, when a tall, saturnine figure with a heavily

as the following little story reveals

Major General

X, Sir Donald Banks, KCB. DSO. MC. TD had had a varied and distinguished career both in the army and in civilian life before accepting this appointment. There are indications that he found some restraint necessary in the face of Capt. Hutchings single-minded enthusiasm.

scarred face was seen approaching. It was Lord Reith R.N.V.R. The army officers at once addressed their companion, who was a full commander, asking whether he considered himself entitled to a salute from so august a person. Lord Reith solved the problem by duly placing his hand towards the peak of his cap. Hardly a genuine naval salute, but a salute nevertheless. The C.O.H.Q. Commander returned it gracefully.

The next day the army formed a special party to make a foray down Whitehall in the hope of seeing Lord Reith once more acknowledge the seniority of their companion. In due course the tall figure approached, head and shoulders over the crowd. But what was this? Lord Reith was wearing a brass hat, the laced peak glinting impressively. A commander so soon? No, as his lordship came into full view he had clearly four ^{ings} ~~bands~~ of gold lace on his sleeves - a captain! The C.O.H.Q. Commander acknowledged his superior officer smartly and received a gracious movement of the hand towards the shiny peak in reply. The army decided that ^{the} ~~that~~ morning combined operation had failed and ate their roast pigeon in gloomy silence.

Although Pluto was no longer in their official care Combined Operations Headquarters still played a part in the building up of Force Pluto, a naval representative attending a meeting at the Admiralty on manning the ships and craft. Rear Admiral H.T.C. 'Hookey' Walker was in the chair, the steel hook, which replaced one of his hands, acting as a useful gavel and an impressive symbol of authority.

At this stage of the preparations for 'Overlord'

man-power was at a premium and a long discussion took place at the end of which the necessary crews had not been found. Then someone came up with the brilliant suggestion that two LST's (Landing Ship Tank) earmarked for some special job, were not now required and their crews, which were said to be Polish, could be used for the Pluto ships. A sigh of relief went round the table, only to be replaced by deeper gloom when another voice remarked that the Polish crews were only on paper anyway and were not actual bodies with arms and legs.* Eventually it was decided that crews should be recruited from the Merchant Service on what was known as a T124X agreement. This was done and resulted in mixed crews of naval ratings on naval pay and merchant service seamen on substantially higher rates, which naturally did not lead to the easiest of situations. In fact, Force Pluto was an astonishing mixture of men from all walks of life and work, few, if any, had ever had anything to do with cable laying. Not, it may be thought, entirely propitious for an operation on which the whole success of the invasion might depend. On the other hand, in Captain Hutchings, Force Pluto had a leader of exceptional drive and force of character. Those closely associated with him in the day to day battles for Pluto have described him as very dominant and strict but always fair to his subordinates and deeply religious. Another report recalled that he had a rather violent temper and on one occasion flung an inkpot out of his office window on the eighth floor, from which it descended with a crash on to the street below. Apparently without hitting anyone. He was also inclined to indicate his annoyance when on the telephone by ~~holding~~ the receiver to the extreme length of its flex. These rages subsided as

X In order to provide the additional manpower required for Operation Neptune, the naval part of Overlord, the Admiralty laid up a number of warships and used their crews. In addition some soldiers and airmen were transferred to the navy, presumably as volunteers.

Take in
A overleaf
Li

Hurling

~~end of the table chipped in.~~

Delete
'Unfortunately, sir, there were no Polish seamen to man the LST's. The crews were only on paper.'

Many of the men manning
That was as far as the manning question got on that occasion but eventually someone came up with an answer, as usually happens. ~~The crews of~~ the cable ships and the barges concerned with the laying of the pipelines were recruited from the merchant service and engaged under what was known as a T124X agreement. This solved the immediate problem but was not an ideal solution as these men received merchant navy rates of pay and were working side by side ~~with naval ratings whose pay was very much less.~~ This was perhaps merely an extension of one of the major inconsistencies of wartime when men living and working at home in comparative safety got good wages inflated with overtime while those in the front line of the fighting were paid a mere pittance. Possibly a system of share and share alike would have been more equitable.

(A)

quickly as they erupted, but of course the person on the other end of the 'phone was not ~~usually~~ ^{always} aware of this fact.

He worked himself desperately hard and expected everyone of his team to do the same. He took an active and often a leading part in all trials and on one occasion stripped to his underpants in mid-winter and dived into icy water to clear a fouled propeller. His Wren secretary, said that their working day normally commenced at 0830 and went on until 2200, very often travelling about ashore and afloat complete with typewriter, sometimes completing a report on board a Pluto barge between Portsmouth and Ryde. Having been completely terrified of him for the first eighteen months, she eventually decided that he was in fact a kindly and considerate man - providing nothing came between him and his work. There is no doubt he inspired great loyalty in all who worked with him and the general opinion of the members of Force Pluto was that Captain Hutchings was Force Pluto. His personal assistant and general factotum was Lieut. Alan Pook, RNVR and he also had a civilian secretary, Miss Knight.

The composition of the Force having been decided, the immediate necessity was to commence further trials and initial training and for this, of course, craft were needed.

H.M.S. 'Persephone', the converted hopper barge, which carried out the first trial lay from Stone Point on the Hampshire shore across the Solent to Gurnard, was available for trials and training with the Hamel|pipe and this vessel was used to lay a number of lines in order to connect the mainland pipeline to the Isle of Wight. Land pipelines were then laid from Thorness bay to Sandown and

Second Officer
Laura Atlee,

Shanklin where pumping stations were installed in the shells of bombed out buildings on the sea front. The whole of this installation was cleverly camouflaged and apparently was undetected by the enemy who, having once destroyed the place, left it alone.

but this
H.M.S. Holdfast, which laid the first Hais cable from Swansea to Watermouth was in service and available for training ~~which~~ was severely restricted by the need to conserve stocks of Hais cable. The Hamel pipe was readily available.

From Norfolk House the offices of Force Pluto moved to No.80 Pall Mall, but this proved an unfortunate choice, as it was bombed shortly afterwards and Pluto returned to Norfolk House where it subsequently remained, although an advanced H.Q. was established at Woolston, on Southampton water, in 1944.

The complexity of the Pluto operation can be gauged by the number and types of ships and craft considered necessary. This, and the fact that all vessels would need at least some modifications and the major ships required very considerable work to fit them for their laying duties, no doubt had some bearing on the attitude of a number of people in high places and may have helped to crystallise their objections that Pluto was not going to prove successful. The fleet was as follows:-

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* Ships and craft of Force Pluto:

Hais cable ships

Holdfast ex London

Deck displacement
after conversion
~~2,500~~ 2,988 tons

Algerian (~~loaded displacement~~)

~~5,740~~ tons

Latimer ex Empire Ridley

12,220 tons

Sancroft ex Empire Baffin

12,220 tons

Pipe layer

Persephone ex Hopper barge W24

1,587 tons

Cable laying barges Britannic loaded displacement 350 tons

Oceanic " " " "

Runic " " " "

Gold Bell " " " "

Gold Drift " " " "

Conundrums Nos. I to VI

Displacement loaded 1,600 tons

Accommodation barges,
and other auxiliaries

Lawson

Glenmore

Coronia

Abaster

Abatos

H.M. Tugs Marauder, Bustler, Danube V, Danube VI
and Schelde were allocated to Force Pluto as required
for towing Conundrums.

In addition H.M.S. Campanula, a corvette, was allocated
to Force Pluto as command ship for Captain Hutchings
for the Cherbourg - Isle of Wight laying operations.

A number of motor boats and other small craft
were also used.

H.M. Trawler Cedar

" " Grampian

These vessels were used for
hauling out pipelines and other
duties in connection with
Tombola.

* There are some minor differences in the D.N.C. list of Pluto craft
and others - possibly only due to names being changed at some stage.

As has been said, manning this large fleet presented a problem of some magnitude and of the 100 officers and 1,000 men required, only a handful had any experience of cable laying. *and was very experienced.* Commander Treby/Heale ~~was the only man~~ who had commanded a working cable ship. *Mini* Commander Kennard, who subsequently became captain of Algerian, had had some cable experience with the Royal Indian Marine, and Captain Eagle had been in charge of the Eastern Asiatic Oil Company's Terminal at ~~Mare~~ in Borneo, where tankers took on their cargo at the end of a very long pipeline. *(A) below* Nobody had any experience of handling a cable as large and heavy as the 3" Hais or any knowledge whatsoever of how the 3" Hamel steel pipe would behave. Everyone, from Senior Naval Officer Pluto downwards, had to learn by experience and it was only dedication and enthusiasm for the project that carried them through.

To follow (A) below [Lt Cdr. Lee, who originally commanded HMS Persephone was later promoted to commander and became captain of Sandcroft]

Again it must be emphasised that, as far as the planners were concerned, nothing must be left to chance and everything connected with Overlord was organised on a belt and braces system. In spite of their pre-occupation on the Russian front, where already the tide had turned ominously against them, the Germans had strong forces and impressive fortifications in the west and there was no doubt that the landings would be fiercely resisted. Once Pluto lines were established across the Channel, supplies of the vital but highly inflammable petrol could be assured. Dumps of flimsy leaking tins, inviting destruction, would not be necessary and the highly efficient jerricans could be refilled time and time again, from the far less vulnerable pipelines. It had already been established that a bomb would virtually have to hit an underwater pipeline to damage it and the chances of this happening were negligible.

(A) Commander A. Bicker-Caaster, who became captain of Holofest, had had cable ship experience with the Western Union Telegraph Co. it is believed.

So it was not difficult to understand why Captain Hutchings had unswerving faith in the necessity for Pluto and why he was determined that it should succeed in the face of all obstacles, some of which were firmly entrenched on this side of the Channel and probably able to do more than the enemy to prevent Pluto fulfilling its purpose.

Thus, as Force Pluto began to build up, Hutchings was constantly at work exhorting and encouraging those concerned with the production of ships, craft and equipment, and endeavouring to sort out his crews and get training organised.

The main base for personnel was established in the old Supermarine works at Woolston on the east bank of the Itchen and Captain Howard R.N. was appointed commanding officer. A new arrival recalled that, when he asked a duty rating if the tide was flooding, the reply came "No, sir, its coming in". The base was called 'Abatos' as being suitable for the main residence of Pluto. There was also a smaller ^{naval} establishment at Tilbury to cope with the loading of the Hamel pipes and the handling of the Conundrums.

In addition to the main Pluto operation, Senior Naval Officer Pluto was also made responsible for Tombola, the ship to shore pipelines, and this system of landing bulk petrol was the immediate follow-up to supplies of jerricans and packed petrol. This was a much more simple job from the naval point of view, as the pipelines were constructed on shore by a party of Royal Engineers. The pipelines were hauled out into deep water by a trawler.

A set of moorings was laid at which a tanker was berthed and connected to the pipeline by a flexible hose. By this means a coastal tanker could discharge her cargo of petrol in a few hours. During this time she would of course be a sitting target for both aircraft and gunfire and to what extent the method could be relied upon was a planner's nightmare. In the event, the only damage to tankers was self-inflicted, but this was bad enough, and at one time a third of the available tanker fleet was undergoing repairs in a yard specially commissioned for the purpose on the river Hamble.

To gauge the relative importance of the various methods decided upon for the provision of petrol or P.O.L. (Petrol, oil, lubricants), since these were usually considered as a group, it is necessary to have some idea of the tonnage or gallonage which each could deliver. The figures below are approximate for Pluto, since they depended on pumping pressures and those for tankers are only a rather questionable average, but they will serve their purpose.

Pluto:

Cherbourg - Isle of Wight
 3" Hais cable 250 tons day
 Hamel pipe 250 " "
 Dungeness - Boulogne
 3" Hais cable 350 tons day
 3" Hamel pipe 350 " "

10 3" lines Cherbourg - Isle of Wight were calculated to deliver 2,500 tons a day.

Tankers

Coastal

Average *coastal* tanker would deliver 130 tons an hour through Tombola lines.

To provide for the fuel requirements during the assault and early stages of the operation, 180,000 tons of petrol was prefabricated in some 13,000,000 jerrycans and 13,400 tons of this accompanied the invading armies.

As will be seen, arrangements in the early stages of the invasion proved to be somewhat different from those anticipated and most of the coastal tankers were able to use the small harbour of Port en Bessin, which was virtually intact. ^L Tombola, therefore, was not used to anything like the extent it might have been. An added reason for this fact was that the site chosen, which had a rocky foreshore, was by no means suitable for towing out pipelines to the tanker moorings. Possibly there was not much choice as the pipelines had to connect with the shore installation built in the port. It also seems likely that, having found Port en Bessin would be used even in the early stages, the necessity for the Tombola arrangements had diminished and the fact that lines were laid was probably due to the possibility of the Port being put out of action later by enemy activity. So Tombola, although moderately successful and originally considered by the planners as an essential feature of the P.O.L. supply operation, was soon relegated to low priority and eventually abandoned. As with a number of the invasion plans, this was one which could have proved a vital essential, but which in the event gained little praise or publicity. A very great deal of thought and effort went into the devising and production of the Tombola equipment and to the training of crews and establishment of techniques. The fact that it did not save the day by producing bulk supplies of fuel in the critical phase of the assault does not mean that Tombola failed. It just was not necessary. That is war. In his own notes on the work of Force Pluto, Captain Hutchings has very little to say about the efficacy of Tombola. Perhaps because his main consideration was the successful laying of the Hais cables and Hamel pipelines.

^L (A) below
 (A) A considerable amount of petrol was landed in jetties loaded in the small 'Chant' tankers which could carry either bulk or packed supplies.