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THE CONTROLLER UNVEILING THE PLAQUE

THE SHIP DEPARTMENT

BY

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October 1st, 1958, was an important date in the history of the organization of the Admiralty. For one thing, it marked the inauguration of the Ship Department ; for another it marked the climax of something greater—the completion of a new organization for handling the whole of the Admiralty's requirements in material. Much has to be done to perfect the organization ; it is now in existence, however, and has to justify high promise that it will prove better suited to the needs of the latter half of this century than the old.

Why Change ?

There was so much of proud tradition in the old departmental structure. It has survived the stresses and strains of two world wars with considerable achievements to its credit. What were its disadvantages when viewed against the needs of the future ? Could its strong features be carefully safeguarded and nourished in a new organization ? Could the disadvantages be overcome without running into others of even greater magnitude ?

Such issues were examined at length by a Committee under the Chairmanship of Sir Barclay Nihill, K.B.E., M.C., during 1956 and 1957. The new organization has been developed along the lines recommended by that Committee.

Those of you who have served at headquarters will have a shrewd idea of the disadvantages of the former organization. I will select three of the more important. They will serve to indicate the benefits which the new organization should produce.

You will be aware of the increasingly heavy burden which successive Controllers have had to bear. On the one hand, there has been the mounting number of departments to be supervised and co-ordinated since the tendency during the past half-century has been to create a new department to deal with each major technical problem as it has occurred. Controller has, therefore, had sixteen departments to look after—a superhuman task. On the other hand, his responsibilities have been increased by the greater complexity of our defence structure and by N.A.T.O. obligations. He has been given significant relief in various ways but adequate easement was scarcely possible without radical change.

A second disadvantage—more controversial perhaps—was that the talents and experience available for the detailing of our ships and modernizations were not harnessed in the most effective manner. I need hardly remind you that we are passing through a challenging time when increasingly complex equipment has to be squeezed into hulls already built or being designed to the smallest practicable size. At the same time, due to a variety of reasons, crews have become much larger than formerly ; more space is therefore needed for their accommodation and better standards of habitability are expected. There has been close contact and frequent discussion in the past between all experts concerned with detailing ship plans. There has been widespread opinion, however, that an organization could be produced whereby this blending of expert knowledge could be markedly improved.

One further disadvantage should be mentioned. The old organization was not the best suited to present needs in regard to ship production and financial control. This is a thorny subject which cannot be developed at length in this article. We have passed through a difficult period when technical advance has been so rapid that it has not always been easy to provide vital equipment by the dates required. This has been against a shipyard and industrial background in which order books have been full and delays in warship programmes consequently difficult to arrest. Planning and progressing of such programmes need to be carried out thoroughly and strictly if we are to get the largest sized Fleet within our limited resources.

You have seen plenty of evidence of measures to keep the new construction element of the Navy Votes as high as possible—many of them unpleasant such as the Way Ahead Committee has had to recommend. This produces a complementary obligation to spend that money with the greatest wisdom and under firm direction. The organization for production and financial control needed reconsideration in this spirit.

But it is so easy to criticize. It is necessary not only to pick out the faults but to note the strong points of an existing organization so that the latter are not lost in a new. This was emphasized in the approach of the Nihil Committee.

The strongest feature of the old organization was undoubtedly the strong *esprit-de-corps* within Departments. This produced technical excellence and a good team spirit. A task force can only be efficient if its component ships are happy and well worked-up. Controller's organization has had happy and efficient departments. This *esprit-de-corps* must be retained—and indeed, strengthened—in the interests of the Royal Navy. Professional standards and staff loyalties are priceless assets in the Admiralty service.



THE CONTROLLER SPEAKING IN THE CANTEEN

The New Look

It is now necessary to indicate very briefly the new organization of Controller's responsibilities as a whole if the main subject of this article is to be fully understood.

The new look has two essential features. The first is that the posts of Vice-Controller (at Bath) and Deputy Controller have been abolished but the Fourth Sea Lord has been additionally designated Vice-Controller. In this capacity he will be concerned mainly with that part of the Controller's organization which deals with the maintenance and repair of the Fleet but will also act for the Controller, with the authority of a Board member, over the whole field so far as this might be found necessary.

The second—and the more relevant to this article—is that the sixteen or so departments have been re-cast into four larger Departments. Each will be supervised by a Director-General with considerable powers delegated by the Board. The four Departments are :—

(i) *The Ship Department* which will deal with the design and production of the ship as distinct from her weapon systems (although being associated fully with the latter in all matters necessary to secure the best ships). It will undertake most of the functions within the former provinces of the Director of Naval Construction, the Engineer-in-Chief of the Fleet, the Director of Electrical Engineering and the Director of Naval Equipment.

(ii) *The Weapons Department* which will deal with all weapon systems and radio communication and compass equipment except such as form part of naval aircraft. It will, therefore, undertake most of the functions of the former Director of Naval Ordnance, the Director of Underwater Weapons Material,

the Director of Radio Equipment, the Director of Compass Department and the Chief Inspector of Naval Ordnance.

(iii) *The Aircraft Department* which will deal with naval aircraft as complete weapon systems. It will, therefore, undertake the work performed by the Director of Air Equipment and Naval Photography and the Director of Aircraft Maintenance and Repair, together with work formerly performed by D.R.E. in connection with aircraft radio equipment and by D.N.O. for airborne above water weapons.

(iv) *The Dockyards and Maintenance Department* which will deal with the management of the Royal Dockyards and with the repair and maintenance of the Fleet. It will, therefore, embrace not only the work which has been carried out by the Director of Dockyards but also that of a new Division which will co-ordinate Fleet Maintenance. There will also be a third Division which will co-ordinate various marine services including the Port Auxiliary Service and the work previously performed by the Director of Boom Defence and Marine Salvage.

The foregoing is an over-simplification. For instance, there have been important adjustments of duties between the four Directorates-General which it is not the purpose of this article to detail. It should be mentioned, however, that the responsibility for certain electrical work for weapon systems is being transferred from the Director of Electrical Engineering to the Director-General of Weapons and Radio ; also that certain fleet maintenance work is being transferred from the Ship Department to the Director-General of Dockyards and Maintenance.

You may well ask how the four large Departments are to be kept working as a fully harmonious and efficient whole. This will be achieved by the four Directors-General forming—with certain other officers—a compact Management Team under the chairmanship of the Controller. This team will meet frequently to discuss all matters which affect the efficiency of his organization and the material future of the Navy.

The Best of the Past

We are now in a position to consider the Ship Department in some detail.

It will be convenient first to see how the best features of the old organization are retained. The design elements of the Naval Construction, Marine Engineering and Electrical Engineering Departments will continue to exist as clearly defined ' Divisions ' and these will be headed by Directors. The existing staffs will, however, be disposed very differently, but more about that later. The disappearance of the title ' Engineer-in-Chief of the Fleet ' from the Ship Department must cause sadness ; the Director of the Marine Engineering Division must assuredly attract high prestige.

A further good feature of the past is being retained in that the Director of the Naval Equipment Division's team which will probably include officers of all the main specialist branches, has been left intact though its duties will be broadened. In the past these have primarily been to ensure that the design and installation of the ship's equipment have been satisfactory as well as to advise regarding alterations and additions, internal communication systems, accommodation and living standards, replenishment both at sea and in harbour and many other similar matters in the user field. Most of these responsibilities will continue but the Director and his group are now in a position to inject the advice of Captain and officers into the design and fitting out of any new or modernized ship. This is more than a good organizational feature—it is vital in these days of highly complex arrangements. We have increasingly to take steps early in a design to ensure that we are correct first time. Subsequent

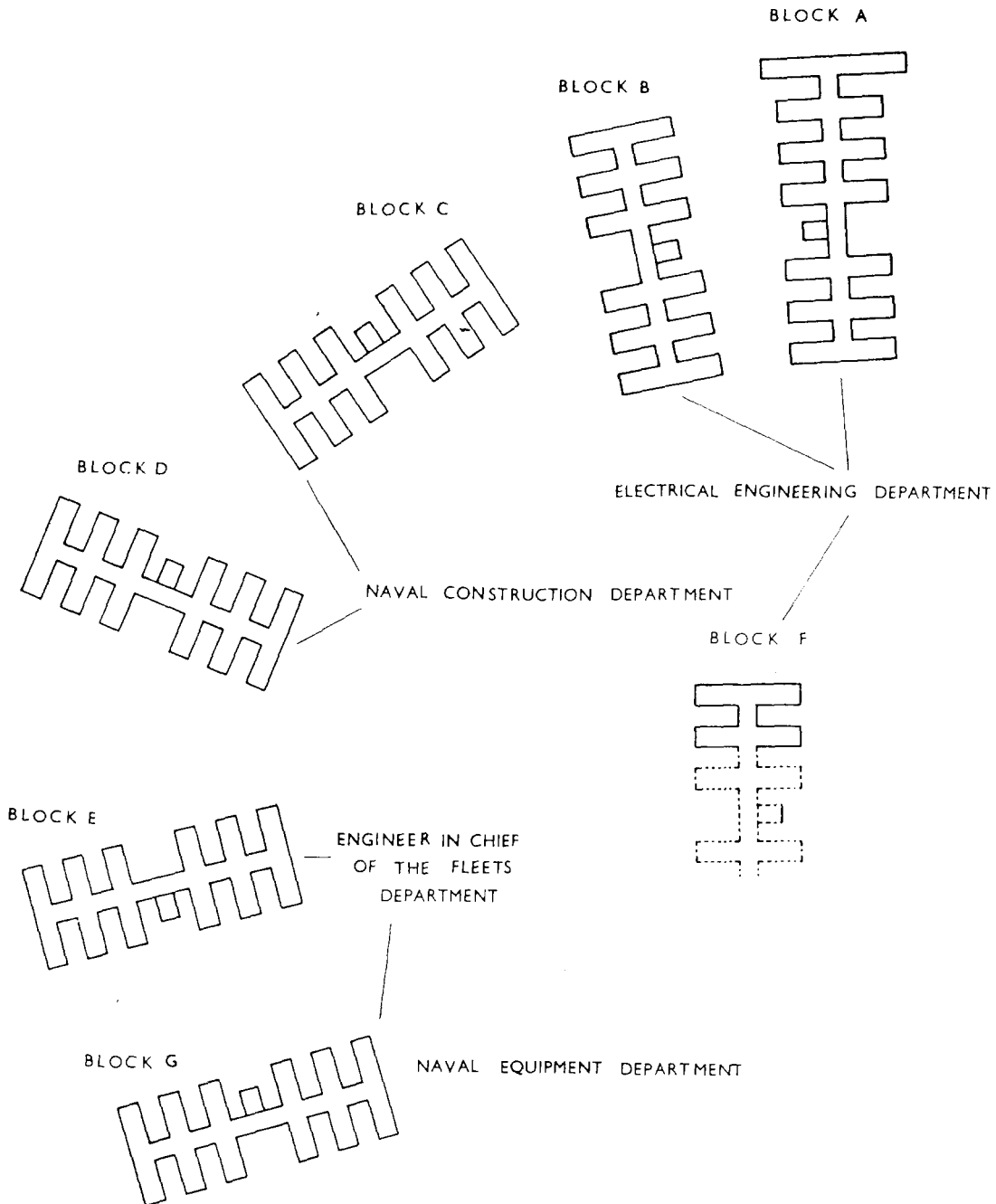


FIG. 1—FORMER FOXHILL LAYOUT

alterations are very costly and can seriously fritter away our limited resources. We have to detail arrangements more fully and check the more complex layouts by more mock-ups and models. These have to be firmly accepted at that stage and further changes avoided until there are really new arguments to be satisfied. The Director of the Naval Equipment Division will play a most important part in injecting Fleet opinion in this and other fields of the Ship Department's activities.

This, of course, is not the only means whereby user opinion will be fed into the organization for there will continue to be naval officers in the Marine Engineering and Electrical Engineering Divisions.

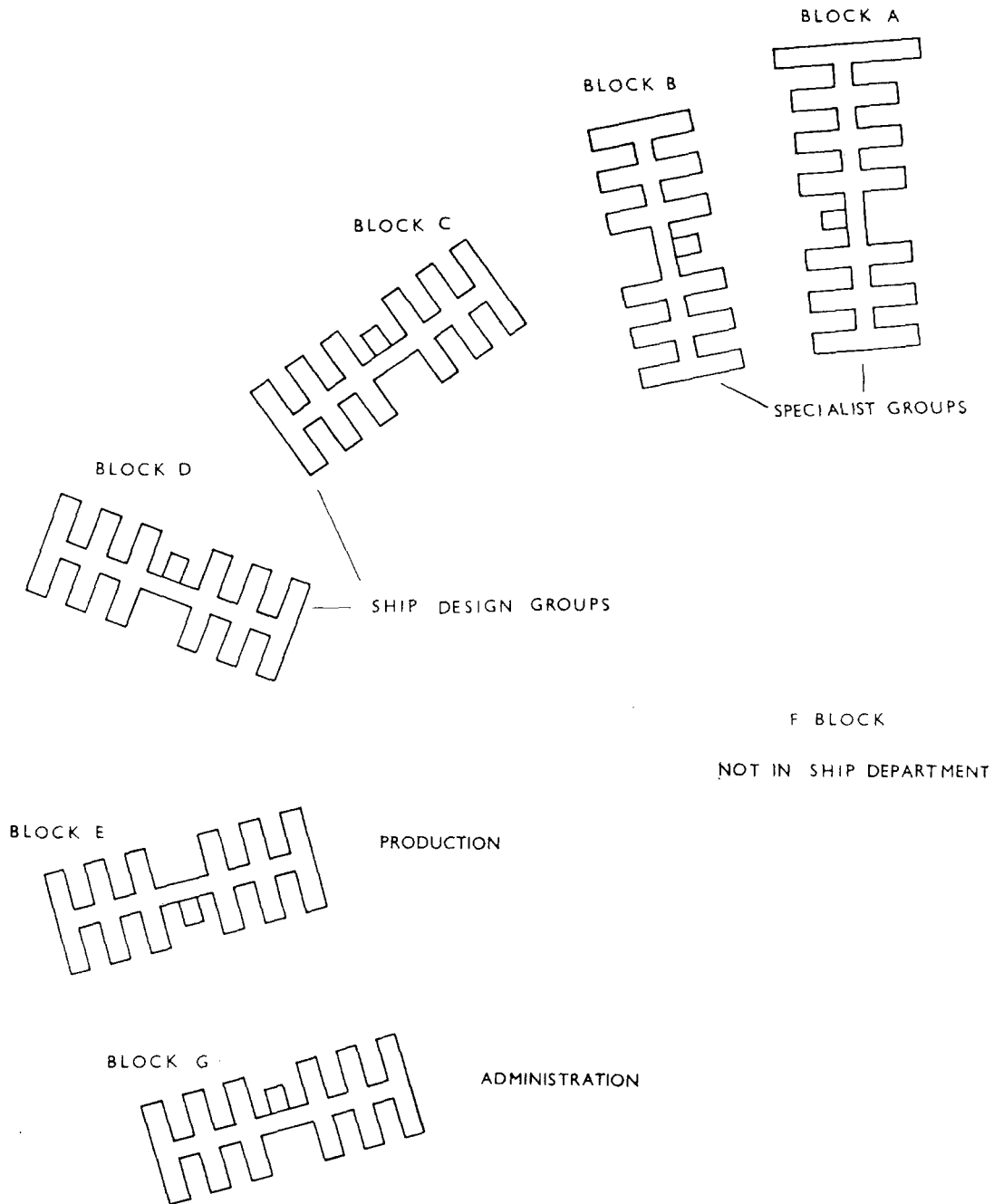


FIG. 2—NEW FOXHILL LAYOUT

The Pattern for the Future

So much for some of the good features of the past. How are these to be blended into an integrated Ship Department ?

This can probably best be demonstrated if you take two imaginary tours with me of the Foxhill Admiralty site at Bath.

For the first, we will imagine the time to be earlier this year with the old organization in being. The guide map is shown in FIG. 1.

Foxhill consists essentially of seven office blocks (lettered A to G) each of which has twelve 'spurs'—six each side—projecting from a long corridor. Odd spurs have been allocated to special Admiralty requirements but this fact will be neglected for the sake of simplicity.

Entering the main gate, the first block met is G. This was occupied by the Deputy Controller, the Director of Naval Equipment and his staff and by the Deputy Engineer-in-Chief of the Fleet and part of his department. The remainder of the marine engineering staff were in E block. The next two blocks encountered are D and C which were occupied by the Naval Construction Department. Blocks B and A housed the staffs of the Electrical Engineering Department except for its factory production and finance elements which occupied three spurs in F Block. Otherwise F Block was given over to other Admiralty requirements.

Now come with me on a second tour after the Ship Department has settled down to its new form. This must be somewhat later than the date you read this article for the work of re-siting personnel is immense and cannot be completed until perhaps the early part of next year.

Before starting this up-to-date tour, reference must be made, however, to one new Division in the organization. It has already been stated that the design elements of the professional Departments remain under Directors of Naval Construction, Marine Engineering and Electrical Engineering. The production and finance elements of the professional Departments—with certain exceptions—are being brought together, in a Ship Production Division, under a separate Director. This Division will have senior representatives of the three specializations—constructor, marine engineer and electrical engineer. It will plan the future more thoroughly, progress current projects in greater detail, control the shipbuilding overseeing staffs, provide a central financial control and act as a focus in the Admiralty for shipbuilders. The exceptions will be the factory production elements in the marine and electrical engineering fields—i.e. the production of equipment away from the shipyards in these fields. These are to be left with the design Directors but with powerful links to the Ship Production Division. They will in any case be sited geographically with that Division.

Now we can start the tour at G Block and this time you should follow the map in FIG. 2. G Block is essentially administrative—using that term in a wide sense. The Director-General Ships and the Directors of Divisions—including the Director of the Naval Equipment Division—are housed in close proximity so as to secure the closest exchange of views, the speediest execution of policy and prompt resolution of any problems of administration. Close by will be the Civil Assistant who will—among other duties—assist with non-technical policy questions and the organization of the secretarial staff. You will also find the Chief Scientific Adviser who will ensure that technical progress is stimulated by the best scientific advice; he may also attract to the Department some of the applied research previously sponsored outside the professional departments.

Moving through G Block, notice that one spur is almost wholly devoted to personnel management under an officer of Assistant Director status. He will be the executive in this field to the Directorate, the Directors themselves being responsible to the Director-General for professional standards, training, adequacy of manning and other allied problems.

A further spur has project groups within the Naval Construction and Marine Engineering Divisions. They will work closely together to produce design studies of projects under consideration by the Naval Staff and also—equally important—of projects inspired by the Ship Department. This is a new venture from which much is expected.

Another spur houses the technical servicing groups of the professional Directors—the groups which develop technical policy, promulgate guidance

memoranda and conduct the miscellaneous analyses and investigations to ensure that our technical standards are the highest.

Part of one spur is devoted to an 'Action Information Centre'. This will give the planning and progressing displays for the whole Ship Department such as the future building programme, the modernization and refitting programme (fed in by the Dockyard and Maintenance Department), programmes and progress charts for all major projects, curves of shipyard capacity and much other controlling information.

At one end of G Block is the main registry through which all papers pass on their way into and out of the Department. Elsewhere can be seen other vital supporting elements of the administration.

Moving now to E Block (F Block is not a part of the Ship Department) we find all the elements of the Department which deal with planning and progressing ship programmes, co-ordination of the overseeing organization, factory production and with financial control. As already mentioned, all this work—with the exception of the factory production of D.M.E. and D.E.E.—will come under the Director of the Ship Production Division. Part of one spur in this block is devoted to a centralized library for the whole Department.

We move next to D and C Blocks and come to features of special interest in the effort to produce better integrated ship design and modernization. In these two blocks are housed four integrated Ship Design groups dealing essentially with aircraft carriers, submarines, cruisers (with depot and other ships) and escort vessels.

Let us consider one of these groups by assuming that the design staffs involved are housed in half a block—or six spurs. The principle behind the siting of the staffs is shown in FIG. 3. Two naval construction elements are sited on the 'wings'—one of which deals primarily with new design projects in its field and the other with the modernization and day-to-day problems for its ships of the Fleet. In the centre are the marine engineering and electrical engineering elements and they will co-operate with both wings to give close interchange of opinions and the speediest treatment of all problems below Directorate level or referred to them by the Directorate.

Within each group nominated members of the staff of the Naval Equipment Division will spend a goodly portion of their time imparting the point of view of Captain and officers and to ensure that user advice follows a consistent policy.

Another interesting feature of these groups is that certain officers (project officers) have been nominated to co-ordinate the whole design programme. These officers will have essential production and financial information fed to them so that they can grasp the whole project. They will hold regular meetings of the staff at their level and corresponding officers from other Directorates-General will be invited to attend many of the meetings.

The Technical Chief Executive (T.C.E.) of the *Dreadnought* project will be a special leader in view of the great importance and complexity of this project. He will continue to control an integrated planning, constructive marine engineering and electrical engineering team—the *Dreadnought* Project Team. So far as design matters are concerned, these elements will still have responsibility to their professional directors and will be part of the submarine integrated design group.

In D and C Blocks we find the ship design groups which deal respectively with destroyers and frigates, with cruisers and Fleet support ships, with aircraft carriers and with submarines.

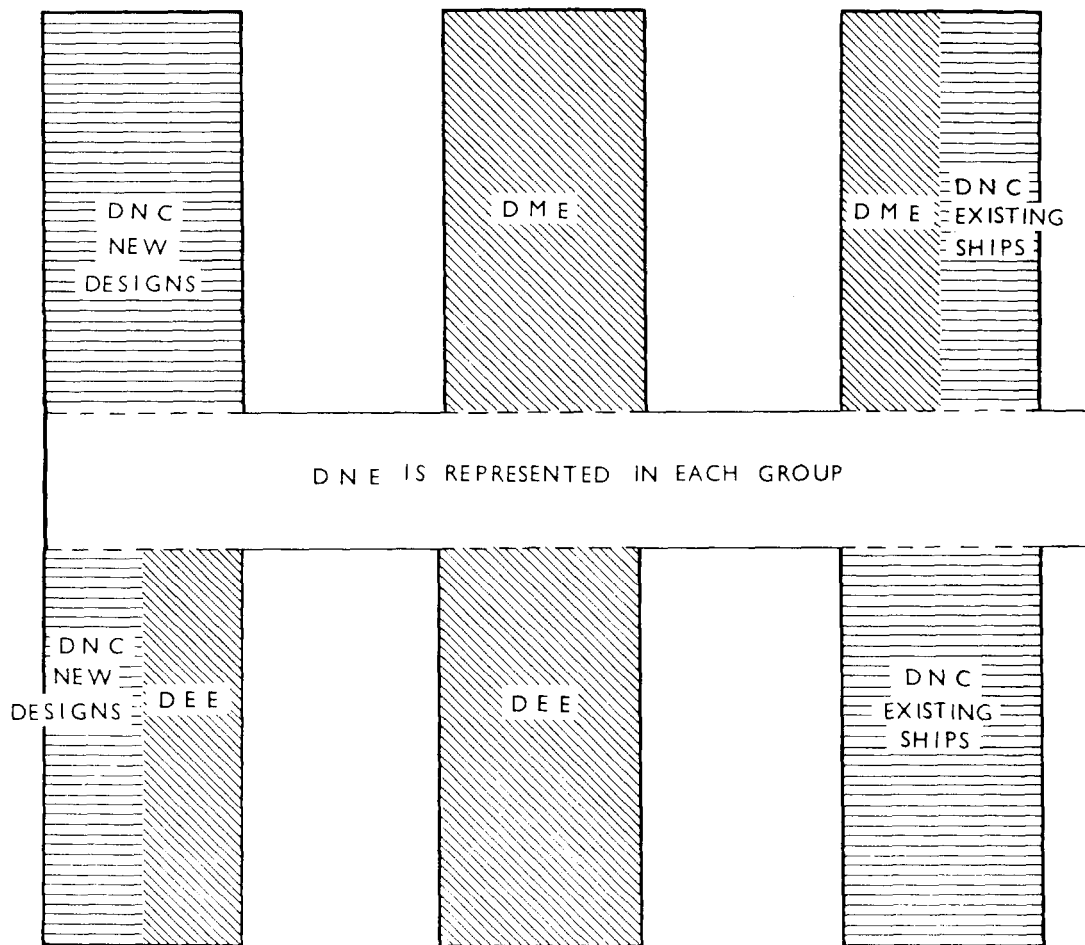


FIG. 3—TYPICAL LAYOUT OF SHIP DESIGN GROUP

We now pass to B and A Blocks at the end of our tour. These have a vital part to play for they house the specialist design groups. Those of you who have served at headquarters will know that there are many highly specialized facets of ship design which need close study for their own sakes if the Navy is to have the best design standards. Turbine design, internal combustion design, gearing design, ventilation, habitability, refrigeration materials, damage control, weapon arrangements, ship forms, structural design, electrical distribution systems and electronics are but a few of the many elements on which expert knowledge must be acquired and the best guidance given for each new design or modernization.

The three design Directors will each have two groups for this purpose. They will be constituted broadly as follows :—

Director of Naval Construction

Group I—Hydromechanics (together with attack and defence of ships, noise, vibration, shock, weapon integration with ship design)

Group II—Structural work and materials (including ventilation and habitability)

Director of Marine Engineering

Group III—Main machinery components

Group IV—Auxiliary machinery and equipment

Director of Electrical Engineering

Group V—Heavy current equipment and system design

Group VI—Light current equipment.

Again, certain officers in the specialist design groups are being nominated to sponsor the development of selected projects, e.g. the gas turbine boost machinery.

FIG. 4 shows the higher professional structure for the Ship Department. In the Marine Engineering Division, the post of Deputy Director is in abeyance in view of the appointment of Rear-Admiral Nuclear Propulsion.

I should add that the creation of the Ship Department has enabled certain demarcations to be adjusted to secure the most efficient service to the Ship Design groups. The fact that the specialist groups of the three professions are sited in such close geographical proximity means that there will be close contact in associated fields of expert design and knowledge.

There will also be changes in the Ship Department organization at Admiralty headquarters in London. There will be a single integrated group comprising constructors and engineers. This will have several duties to perform of which I will mention one or two only. It will operate a filtered 'Bridge Plot' of the 'Action Information' data at Foxhill so that the Board and Directors-General can always have the latest information available. It will form a close link with the Naval Staff and also maintain full information of current projects and of ships in the Fleet.

This completes the tour of the re-cast organization. But take a bird's-eye view of the layout at Foxhill once more. The integrated ship groups are in the centre of the site with production advice on the one side and specialist design support on the other. If we can now get closer together and feel 'all of one company' the conditions should exist whereby better results can be obtained than ever before. This is our earnest hope.

It would be misleading if the impression were left that the new organization produces all credits and nothing on the debit side. Curiously enough, integration can only be obtained by dispersion in other ways. Professional staffs are more scattered, some strong contacts formerly existing within Departments could be weakened, papers could be more difficult to track. Everything is being done to reduce or eliminate these potential drawbacks.

Conclusion

The items on the credit side, however, are very great—more so perhaps than have been represented in this article or can be realized at present. It is the purpose of us all to use the opportunities created by the new organization to enhance the standards of naval design and production and give the Navy the best value for its money.

How better can this article be concluded than by repeating the words of the Controller on Vesting Day :—' I am quite sure that, in the days ahead, whatever their ups and downs, we shall be all the better able to sustain the effort by being moulded together in this new pattern.'

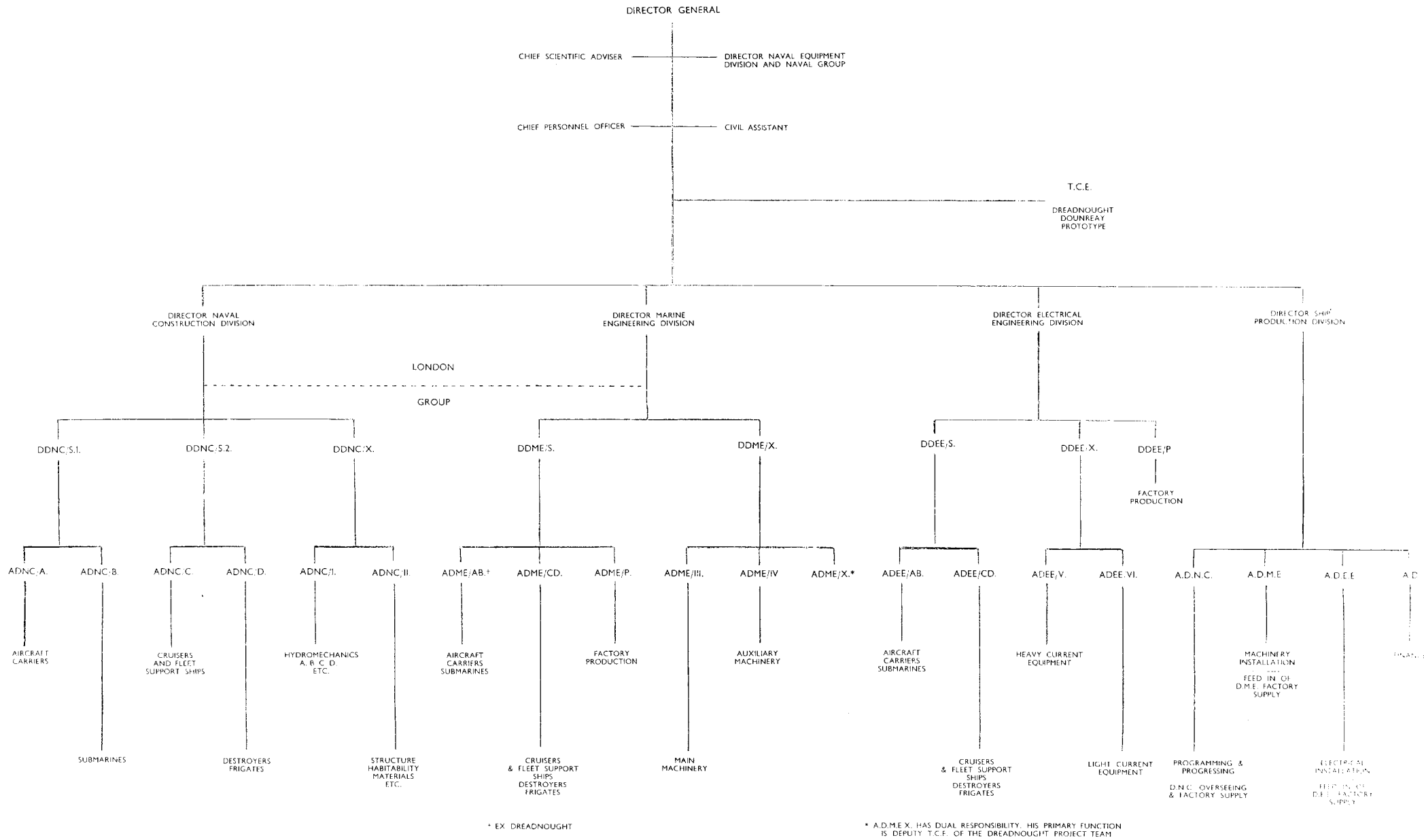


FIG. IV
SHIP DEPARTMENT
PROBABLE
HIGHER ORGANIZATION