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THE BRITISH MINISTRY OF SUPPLY

10 December 1948

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THE BRITISH MINISTRY OF SUPPLY

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GENERAL VANAMAN: Gentlemen, we have studied procurement in the United States, in and out of the Military Establishment. This morning we have the opportunity of studying procurement in another organization outside of the United States. What are its good points? What are its disadvantages? Why is it good for Great Britain? Would such an organization be good for the United States?

The Ministry of Supply in Great Britain succeeded so well during the war that it has been continued and actually enlarged in scope.

The corridors of the College have echoed with these questions that I propounded. Six years' experience with the Ministry of Supply in Great Britain qualifies our speaker this morning to answer practically all of these questions, with the possible exception of the last one: Would such an organization be good for the United States? That, I believe, would require a lot of study of our organization, comparing the details with the Ministry of Supply.

It is a distinct pleasure to present to the Industrial College of the Armed Forces and to our guests, Sir Alwyn Crow.

SIR ALWYN CROW: Gentlemen, I am very happy to have the opportunity of addressing you today on, "The British Ministry of Supply." The time at my disposal, I have been warned, will not allow me to go into very great detail about the functions of the Ministry of Supply and the organization which has been built up to discharge these functions.

I propose, therefore, to confine myself in this lecture to giving you an outline of the events which led up to its present organization and a very rapid survey of the way in which the machinery of administration works. I shall be pleased to answer any questions at the end of the lecture on specific points of detail about which you may want information. This I will do to the best of my ability. Where matters of fact are involved, I will try to give you the facts. But I should like to make it clear that where matters of opinion are involved, the opinions must be taken as my own and not in any way necessarily representing the official viewpoint.

To give you a picture of the present organization of the Ministry of Supply and how that organization fits into the general pattern of the Defence Ministries, it is necessary for me to go back a little in history.

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Before the First World War there were only two Departments of State dealing with matters of defense, namely, the Admiralty, which controlled the Navy and made provision for its requirements, and the War Office, which discharged similar responsibilities on behalf of the Army.

Just before the outbreak of the First World War a new branch had been grafted on to these two departments in 1912 in the form of the Royal Flying Corps. This was divided into two sections: one coming directly under the Admiralty and leading eventually to what is now known as the Fleet Air Arm; the other, coming under the War Office for aircraft, working in collaboration with the ground forces. The personnel of the Royal Flying Corps were, to a large extent, recruited from officers and men of the Royal Navy and of the Army.

The First World War marked the beginning of a radical departure from our old conceptions of warfare and of the methods for waging war and for making the necessary provision for the Armed Forces of the Crown. This was the first time in our history that we had to face a war of similar magnitude, and it soon became apparent that the task of increasing our standing Army and Navy to the size necessary to enable us to conduct the war necessitated the introduction of new methods. I may remind you that in that war we had to increase the Army some fifteen times, from approximately one-quarter of a million men to something in the region of four million men. While the increases in the Navy and in the Royal Flying Corps were in no way comparable in actual numbers, it was still a formidable task to provide for their battle requirements on the requisite scale.

As a result, early in the war that side of the War Office which hitherto dealt with research, design, development, and development of all types of armaments was taken out of the War Office and was formed into a separate Ministry called the Ministry of Munitions.

A further change was that the Air Arm was found to play such an important part in the general pattern of defense that it could no longer be run as an offshoot either of the Admiralty or of the War Office. So just before the end of the First World War a new Ministry was created, the Air Ministry; and the Royal Flying Corps became the Royal Air Force.

At the end of the First World War then, the original two Departments of State dealing with defense matters had grown into four. With the re-establishment of peace, the decision was taken to disband the Ministry of Munitions and return to the War Office such officers as the Director of Artillery and similar technical directors who had formed the nucleus of the Ministry of Munitions. This was, I think, looking back, a retrograde step. It became clear fairly soon after the end of World War I

that if we were ever to be put in the position of fighting another major war there would have to be brought into being some form of nucleus organization to coordinate development and procurement problems which would be capable of being extended at short notice in time of war.

The major planning body in Great Britain during the period 1919 to 1939 was a body known as the Committee of Imperial Defence, which came directly under the Prime Minister and on which were represented the three service departments. This committee also had contacts on matters of general policy with the self-governing members of the British Empire.

Under the Committee of Imperial Defence a Principal Supply Officers' Committee was set up in 1924 to coordinate the war supply arrangements of the three Defence Services. This committee did a great deal of useful work in the way of assessing as far as possible the needs of the Services in time of war and cataloguing the industrial potentials required to meet these claims. Until 1936, however, its work was seriously handicapped by the fact that lack of finances prevented the committee from acquiring balancing plant, placing educational orders, entering into firm commitments with individual commercial undertakings, and building reserves of vital materials that would inevitably be in short supply in war.

In 1936, however, largely as a result of the Italian-Abyssinian war, a measure of rearmament was decided upon by the Government and a real stimulus was given to planning. New government-owned and controlled Ordnance factories were built, Admiralty dockyard expansion was authorized, the provision of Air Ministry shadow factories for the aircraft industry was approved, and educational orders were placed with industrial firms to give them actual experience of armament manufacture. At this time, also, considerable attention was given to the measures to be taken to control the distribution and use of materials in war, and a control organization was planned. The tempo of preparation, although still slow, gradually increased during 1937 and 1938. During the final year before the outbreak of war in 1939, the planning took real shape and gave an opportunity for some of the weaknesses that had been revealed in the system to be corrected.

Early in 1939 the Secretary of State for War proposed that research, design, and production of military equipment should be divorced from the War Office and that a new Ministry of Supply should be set up to cover this general field on the lines of the original Ministry of Munitions.

The new Ministry of Supply came into being in June 1939, and quickly developed into one of the largest Departments of State. Its

primary purpose was the provision of equipment to the Army through all stages although it also served the Admiralty and the Air Force, where there were common needs.

In 1940, a similar split was made in the case of the Air Ministry and the Ministry of Aircraft Production came into being. Throughout the war the Admiralty maintained its original organization although it continued to rely on the Ministry of Supply for the provision of certain types of equipment. We had the situation, then, that during the earlier stages of the war there were five operating departments--the Admiralty, War Office, Air Ministry, Ministry of Supply, and the Ministry of Aircraft Production--which were directly responsible for the conduct of defense and the provision of war material. These departments reported on major matters to the Prime Minister in his capacity as Minister of Defence.

Later in the war a sixth Department of State was formed, namely, the Ministry of Production; its duty was to coordinate effort as between the competing requirements of the three services, and to act in consultation with the Ministry of Labour on all matters dealing with the availability of manpower and industrial capacity.

By the end of the Second World War, the British Government had learned its lesson over defense, and the realization was general among all shades of opinion that we could not go back to the old idea of three Service Ministries unbacked by any central organization for assessing, coordinating and meeting their needs. At the same time it was clear that there had been, during the Second World War, as a result of somewhat haphazard growth, a certain amount of overlap and competition between the Admiralty, Ministry of Supply, and Ministry of Aircraft Production. The need for conserving our resources and for making the best use of these resources made it imperative that so far as possible a greater measure of centralized control should be brought into being.

The first step taken to this end was made in the autumn of 1945 when the Ministry of Production was disbanded and the Ministry of Aircraft Production was absorbed in the fabric of the Ministry of Supply. The Ministry of Supply was then made responsible for carrying out the following functions:

First, to undertake the primary duty of furnishing supplies and carrying out research, design, and development for the fighting services to the extent that these functions had previously been discharged by the old Ministry of Supply and the Ministry of Aircraft Production.

Second, to be responsible for the supply and, in many cases, the design, of a large range of stores used by the Government for which concentration of purchasing arrangements appeared to be advantageous.

Third, to undertake primary government responsibility in the field of engineering, carrying with it responsibility for iron and steel and nonferrous metals.

Fourth, to undertake full responsibility for all developments in the atomic energy field.

In addition to these primary responsibilities the Ministry of Supply also retained responsibility for the research, design, and development of a large proportion of equipment for the Admiralty in the fields of ordnance and guided missiles and for the provision for the needs of the Fleet Air Arm.

In 1946 a bill was presented to Parliament to make provision for the appointment and functions of a Minister of Defence, to be in charge of the formulation of a general application of a unified policy relating to the Armed Forces of the Crown as a whole and to their requirements. This bill was duly passed in Parliament and the Ministry of Defence was formally set up at the end of 1946.

By this arrangement, the Minister of Defence assumes responsibility for the broad policy governing the size and composition of our defense forces, the progress of research and development, and the production of military equipment and stores. The Minister of Defence works through the four Ministers in charge of the respective Service Departments, namely, the First Lord of the Admiralty, the Secretary of State for Air, and the Minister of Supply. The coordination of policy to meet defense requirements is carried out by three committees: the Chiefs of Staff Committee, the Joint War Production Committee, and the Defence Research Policy Committee. All these committees report directly to the Minister of Defence and advise him in their respective fields.

I think it may help you to get the picture of what in England corresponds to the Defense Establishment in the United States if I give you a brief outline of the composition and functions of these three committees.

First, take the Chiefs of Staff Committee.--The Chiefs of Staff Committee is composed of the three Chiefs of Staff themselves, as well as the Chief of Staff to the Minister of Defence. As an opposite, you haven't got anything quite similar over here. It is the duty of the committee to review and coordinate staff policy for the three services. The chairmanship of the committee goes by rotation. The present Chairman is Lord Tedder, Chief of the Air Staff. Before him, it was Field Marshal Lord Alanbrooke, who was then Chief of the Imperial General Staff.

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The composition of the Joint War Production Committee is as follows: The Chairman, a civil servant, is the Permanent Secretary of the Ministry of Defence. The members are the Controller of the Navy, who is the member of the Board of Admiralty in charge of all matters relating to research, design, and production of equipment for the Navy; the Deputy Chief of the War Office General Staff; the Air member for Supply and Organisation for the Air Ministry; the Second Secretary of the Ministry of Supply; and the two Controllers from the Ministry of Supply (the Controller of Supplies for Munitions, who has similar functions to those of the Controller of the Navy for all Army requirements, together with the Controller of Supplies for Air, who undertakes the same functions on behalf of the Air Force). In addition to the Chairman, therefore, there are six members of the committee, one each from the Admiralty, the War Office and the Air Ministry, and three from the Ministry of Supply.

The third committee, the Defence Research Policy Committee, has as terms of reference the responsibility of advising the Minister of Defence and the Chiefs of Staff on all matters connected with the formulation of scientific policy in the defense field. It has as its chairman, Sir Henry Tizard. The members are:

- The Deputy Chiefs of the three Staffs;
- The Controller of the Navy;
- The Controller of Supplies (Munitions);
- The Controller of Supplies (Air);
- The Chief of the Royal Naval Scientific Service;
- The Scientific Advisers to the War Office and the Air Ministry;
- The Deputy Controller (Research and Development) Admiralty;
- The Chief Scientist, Ministry of Supply; and
- The Secretary, Department of Scientific and Industrial Research.

In addition to the chairman, therefore, there are twelve members: four from the Admiralty, three from the Ministry of Supply, two each from the War Office and the Air Ministry, and one from the Department of Scientific and Industrial Research. The Chairman of the Defence Research Policy Committee is not a member of the Chiefs of Staff Committee but he attends meetings of that committee as necessary or desirable.

You will see, therefore, that the mechanism for coordinating in the defense field goes somewhat in this way: Broad policy questions are considered by the Chiefs of Staff Committee, who arrive at policy decisions affecting the Defence Services as a whole. These decisions are studied by the Joint War Production Committee and are analyzed to determine the repercussions on development and production facilities. They are also analyzed by the Defence Research Policy Committee; its business is to advise on the allocation of the detailed programs for research and development as between the four Ministries concerned.

Now, it may happen that any particular policy in the form originally stated by the Chiefs of Staff Committee may make demands on the available resources of the general defense organization which cannot be met within a reasonable time; or, taking it a stage further, one policy program, if carried out as originally stated, may have the effect of seriously interfering with another accepted policy program. In such cases, the Defence Research Policy Committee and the Joint War Production Committee get together and make counter-proposals to the Chiefs of Staff Committee. There is always, therefore, two-way traffic between the three committees, and this seems to be, at any rate from our own particular point of view, the most expeditious and satisfactory way of getting our defense requirements as a whole into balance.

Coming now to a consideration of the problems of research, development, and production, which are peculiarly the business of the Ministry of Supply, the principles which have been laid down by the Government to be followed as a matter of policy are these: First, concentration on research; secondly, the limited introduction of equipment of the most modern kind; thirdly, the maximum use of accumulated stocks; and fourthly, the maintenance of a reasonable war potential. These principles govern both the operations of the three main committees to which I have referred and also the application of the decisions of these committees to the Ministry of Supply general programs.

The organization of the Ministry of Supply has been set out accordingly, as is shown in outline on the diagram you have before you. You will see that under the Chief Executives (the Minister, assisted by his Joint Parliamentary Secretaries and the Permanent Secretary) there are six main divisions.

Just going back to the Chief Executives for a minute: The Minister is an elected member of the House of Commons, as are also the Joint Parliamentary Secretaries. They have to speak for the Ministry in Parliament. The Permanent Secretary is a civil servant. There are two Joint Parliamentary Secretaries at the moment. But they do not actually divide themselves, as one might expect, one for Air and one for the Army, but one of them deals more with background administrative work, and the other more with the combined responsibilities of the services. Either of them, of course, may answer for the Minister in the House.

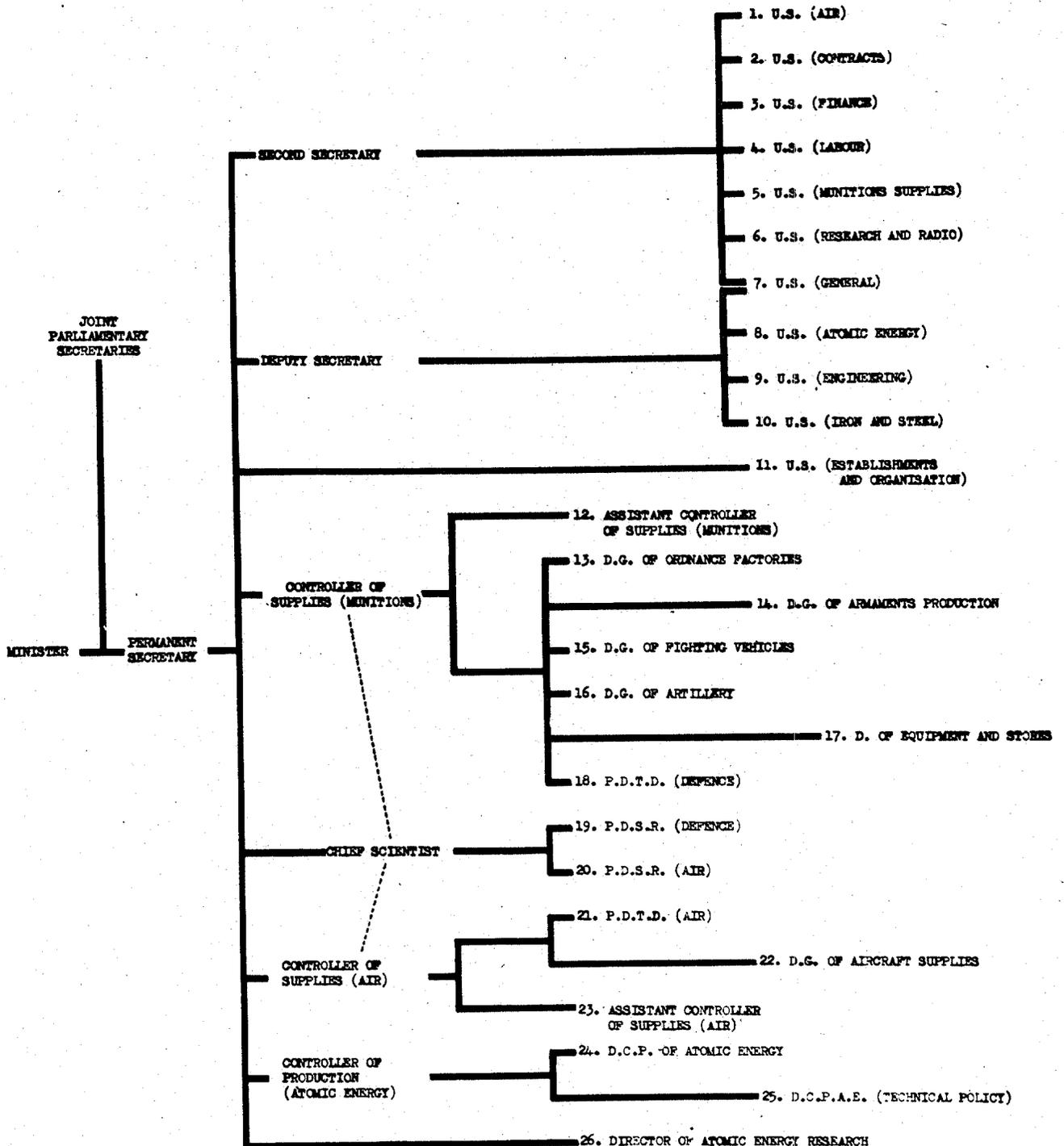
The work of the Ministry as a whole is coordinated by the Supply Council, under the chairmanship of the Minister, which has for members the two Parliamentary Secretaries, the Permanent Secretary, the three Controllers, the Chief Scientist, the Second Secretary and representatives of the Admiralty, the Army Council, and the Air Council.

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ORGANISATION AT JULY, 1948
(PROVISIONAL)



The general background administration of the Ministry is divided between the Second Secretary and the Deputy Secretary, who have ten Under Secretaries to assist them. Of these, six, as you will see, come under the Second Secretary and three under the Deputy Secretary, while the tenth, the Under Secretary (General), reports to both.

You will see that the Second Secretary who, I may remind you, is a member of the Joint War Production Committee, assumes general responsibility for all matters connected with contracts, finance, and labour questions; and, in addition, provides the background administration for the Controllers of Supplies (Munitions and Air). Under him also come administration and financial questions relating to research and development over the whole field, except for certain specific exceptions, such, for example, as research and development provision for atomic energy, which is handled by the Deputy Secretary.

The Deputy Secretary undertakes the administration of the more or less nonmilitary contacts of the Ministry. He has three Under Secretaries to help him, as well as being able to call on the services of the Under Secretary (General), who is really the coordinator between the two sides of administration. He is generally responsible for the administrative work for the Controller of Production of Atomic Energy which, at the moment, we classify as a nonmilitary project. He also deals with policy issues affecting the engineering industries, and undertakes the administration of government-assisted or government-controlled industrial concerns.

The Under Secretary for Establishments and Organisation reports directly to the Permanent Secretary. He deals with all establishment questions, organization and methods, the review of office machinery, and he also deals with all security questions. He has, as you see, a direct line to the Permanent Secretary to the Ministry.

We now come to the Controller of Supplies for Munitions, a post at present held by General Wrisberg, who has just recently visited the United States. General Wrisberg is in charge of all research, design, development, production, and inspection of new and continuing army stores. Under him he has two Production Director Generals, the Director General of Ordnance Factories and the Director General of Armaments Production, together with five approving authorities: the Director General of Artillery, the Director General of Fighting Vehicles, the Director of Engineering, the Director of Equipment and Stores, and the Director of Telecommunications and Radar. These last two directors, who are not shown on the chart, report specifically to and come under the Assistant Controller of Supplies for Munitions. The Controller of Supplies for Munitions has under him a Principal Director of Technical Development, who is charged with the general coordination of design, research, and development, and acts also as Chairman of the British Engineering Standards Coordinating Committee.

A very important part of the Munitions organization deals with inspection, trials, and proof. These activities are grouped under the Assistant Controller of Supplies for Munitions.

Taking the organization in a little more detail, the Director General of Ordnance Factories deals with five categories of government manufacture of equipment: guns, carriages, fuzes and small arms ammunition (which are grouped together), explosives, and fillings. The Royal Ordnance Factories, which come under the Director General of Ordnance Factories, have been brought down considerably in number from the peak during the war, but they still constitute an important industrial capacity and are the main nucleus for war expansion.

The Director General of Armaments Production has three main subdivisions: weapons, ammunition, and instruments. Ammunition is produced partly from industrial sources and partly by the ordnance factories working to specifications laid down by the Director General of Armaments Production.

Now we come to the approving authorities. These directors are responsible for advice to the War Office Staff on all technical questions affecting the equipment for which they are responsible. They are responsible for the development of this equipment, for the provision and approval of all drawings and specifications of equipment for production purposes, and for production information for the production authorities; and, finally, they are responsible that the equipment, when produced, reaches and will maintain the requisite standards of performance and reliability before and after issue to the Army.

The ways in which the approving authorities carry out their responsibilities follow in the same general pattern, for they each have access to their own design establishments. In addition, they can avail themselves of the services of such bodies as the Ordnance Board, on which all three services are represented, and the Armaments Design Establishment. For advice on scientific and research matters they call on the Principal Director for Scientific Research (Defence), shown as number 19 on the chart before you. This official is an executive director and has under him two Headquarters Directors: the Director of Chemical Research and Development and the Director of Weapons Research for Defence. Under him also there are five Experimental Establishments: the Chemical Defence Experimental Establishment, the Explosive Research and Development Establishment, the Chemical Defence Research Establishment, a Tropical Testing Establishment, and the Armament Research Establishment at Woolwich.

While on the chart the two Principal Directors for Scientific Research, both for Defence and for Air, are shown as coming under the Chief Scientist, they do, in fact, work entirely respectively for the Controller of Supplies for Munitions and the Controller of Supplies for Air.

The function of the Chief Scientist is mainly that of a coordinator to insure that the scientific programs are in balance. The Chief Scientist, himself, is in general charge of the whole scientific and technical pool of the Ministry of Supply and acts as an adviser to the Minister on all scientific and technical problems. The pool is distributed between the three Controllers and works in headquarters or outstation establishments coming under these organizations. The Chief Scientist's business is to attempt, so far as possible, to keep research and development programs in balance with the available facilities. He exercises a general supervision over the personnel, and is consulted upon all questions of their allocation, appointment, or promotion.

Next we come to the Department of the Controller of Supplies for Air, Air Marshal Sir Alec Coryton. You may note that here the Principal Director of Technical Development is much more an executive director than his opposite number on the Munitions side. The responsibility, in fact, for supply of all aircraft and Air Force equipment is divided between the Principal Director of Technical Development for Air and the Director General of Aircraft Supplies; the former, particularly, dealing with technical development and the latter with all the technical aspects of production and supply. In both cases, executive responsibility is delegated to Technical Directors who specialize in the following fields: aircraft engines, aircraft equipment, and radio.

The arrangements for inspection follow fairly closely the pattern adopted in the Munitions Department. The inspectors come under the wing of the Controller of Supplies for Air. Scientific research, as well as the very important field of guided missile development, come under the Principal Director for Scientific Research for Air. This includes all work on aerodynamics, wind-tunnel research, wing shapes, radio, navigation, and communications, as well as the various aspects of guided missile development. Again, the ultimate responsibility for this work rests in the Controller of Supplies for Air and the interest of the Chief Scientist is nonexecutive.

Lastly, there is the Department of the Controller of Production of Atomic Energy, who works in conjunction with--I put it that way because he isn't over him--his colleague, the Director of Atomic Energy Research. The Controller himself has two Deputy Controllers to help him, one undertaking the general administration and executive control of the atomic energy factories, and the other looking after technical and security policy questions, interdepartmental liaison, inventions,

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and patents. The Director of Atomic Energy Research is in full control of the Atomic Energy Research Establishment and his responsibilities are connected primarily with basic research in this field.

This gives the over-all picture, although I am afraid it is necessarily very much in outline. But there is one other aspect which is not shown in the diagram, to which I should like to draw your attention, and that is the role played by the Chief Naval Representative on the Supply Council. He has two deputies, one attached to the Munitions side and one to the Air side. His responsibilities, mainly, are liaison between the Ministry of Supply and the Controller of the Navy, and he holds a watching brief on behalf of the Navy to see that Navy demands which are placed with the Ministry of Supply are satisfied. These demands include such matters as the development and provision of aircraft supplies for the Fleet Air Arm, the development of guided missiles for naval purposes, and the general development of ordnance and ammunition requirements, which is centralized for all three services under the Ministry of Supply. As regards the latter, the coordination as between the three services is carried out by the Ordnance Board, the President of which is appointed by rotation from the Navy, Army, and Air Force, and reports to the Controller of Supplies for Munitions.

It is clear that a vital requisite for the efficient functioning of the Ministry of Supply is that there should be very strong links with the three fighting services to insure that their requirements are being adequately covered. I have referred to the liaison system between the Ministry of Supply and the Admiralty. On the Air Side, the Controller of Supplies for Air is an additional member of the Air Council, so that at this level there is direct contact with Air Staff policy. Criss-cross contacts are maintained right down to working levels between parallel officials of the two Ministries. On the Munitions side, General Wrisberg deals directly with his opposite number in the War Office, General Crawford, the Deputy Chief of the General Staff, who is specifically charged with the supervision of all War Office technical requirements. Again, there are close contacts at all levels between the two Ministries.

Nevertheless, it can only be determined by experience of the working of those arrangements whether the disadvantages of the system are outweighed by the advantages. The advantages that we hope for are that by centralizing supply, so far as at present possible, there can be arranged bulk purchasing and avoidance of inter-service competition for production capacity, raw materials, and labor. Further, it is hoped to achieve a greater measure of commonality of design, rationalization, and the elimination of duplicated effort in any field.

An obvious disadvantage is the breaking of the chain of responsibility by the creation of a gap between the user and the supplier. This operates in peacetime and there is a danger that it may be intensified in war unless the need for maintaining and strengthening the links between the defense group of Ministries is constantly watched.

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Both in the United States and in the United Kingdom there is full awareness of the vital necessity of achieving to the highest degree unification of the defense services, and maintaining a rational balance both in peace and in war between the needs of those services and the industrial economy of the two countries as a whole. In each country we are feeling our way towards these ends, and, taking the broad view, it is reassuring to see the close similarity between the two systems that are being evolved. Nevertheless, on each side of the Atlantic, I think, we must admit that our efforts are in the experimental stage, as yet, and that there are many problems still to be solved.

Suppose I leave it there, if I may, and I will answer any questions that you have.

Thank you.

QUESTION: Sir, why is the Navy left out of the organization of the Ministry of Supply?

SIR ALWYN CROW: Well, I think the answer is that it isn't if you are coming down to figures. I should think probably something like 20 percent of the research and development for the Navy is done by the Ministry of Supply and possibly about 30 percent of the production, something of that kind.

But you have put your finger on why I said this is an experimental organization. It is not complete in the sense that it undertakes all supply work for all the services.

We did come to the conclusion that things like shipbuilding and some things which are peculiarly the business of the Navy and are not paralleled by other services should remain with the Navy. I think, myself, that that would have to happen, anyhow. If we, for instance, took responsibility in the Ministry of Supply for shipbuilding, we would have to create a special department. In other words, the men who furnish the services would have to come lock, stock, and barrel to the Ministry.

I think, really, there isn't very much in it. But it is an apparent and maybe a real anomaly.

QUESTION: The question in my mind is how this Ministry of Supply is tied in with the civilian agencies, particularly where you have the Under Secretary for Iron and Steel? Would you discuss that?

SIR ALWYN CROW: Yes, certainly.

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How that started was, in order to step up our production to meet the war requirements we had to do a very great deal of government assistance. We had to coordinate the issue of materials and licenses for manufacture under one central body. That is an inheritance from the war.

But it is also true that there is a certain measure of control that we are groping our way towards. That must be maintained in a small knit economy like ours in peacetime. That is what that man does. In other words, you are talking about number 10 on the chart--U. S. (Iron and Steel)--aren't you?

QUESTIONER: Yes.

SIR ALWYN CROW: Well, number 10 also has had a great deal to do for the bill to nationalize the iron and steel industry, which is being ironed out in Parliament. I don't know whether they are going to do it, or not. The policy is that in order to insure that we can get an expansion program in step with our existing facilities, we have to exercise a certain amount of control over that industry, especially as regards insuring that they do not embark on projects which would be very detrimental for them to have to give up. It is a rather similar situation to the one you have over here with regard to the aircraft industry--and, in fact, we have in England--where both of those industries have to be watched for their war potential.

QUESTIONER: I assume you are familiar with the charter of the National Security Resources Board.

SIR ALWYN CROW: Yes.

QUESTIONER: I failed to hear anything in your speech or to see anything on your diagram which tended to correspond to the National Security Resources Board in the United States. Would you explain that?

SIR ALWYN CROW: Yes. Well, when we are dealing with internal matters of policy, the security is rigid. In England, it comes under what is called the Official Secrets Act.

I hope I understood your question correctly.

COLONEL MCKENZIE: I don't believe you have, sir.

The question, as I understand it, refers to our organization, the National Security Resources Board reporting directly to and advising the President in the present setup as a result of the Unification Act of 1947. Do you have, in any of these Ministry formations, a similar counterpart?

SIR ALWYN CROW: Yes we do. We have the Joint Intelligence Board, which is responsible for dealing with security questions, generally. It makes reports to the Minister of Defence and to the Cabinet.

On the whole, our security regulations are not, apparently, so tight as they are here. But they are, in fact, as tight because of the fact that I have mentioned, namely, everybody has to sign the Official Secrets Act.

There is also a very stringent condition on the question of the nationalization of the people. For instance, in the whole defense organization nobody can be employed who is not second generation English. That is the kind of thing we have; and it is quite as rigorous as here.

QUESTION: My mind is not clear as to the relationship between the ten Under Secretaries and the three Controllers. Would you elaborate a little on that?

SIR ALWYN CROW: Yes. Now I am coming to something for which you haven't a parallel here, and that is the professional civil service in England. These men really act, as I described them as background organization. For instance, supposing that the Controller of Supplies (Munitions), or any one of his Directors, wanted to place a contract with anybody. He would not be able to place the contract directly. He would have to place it through the Under Secretary for Contracts who has--I am taking that particular man as an example--a number of divisions of subject matter which correspond to the divisions on both the Munitions and the Air side. He is the man, for instance, who maintains all the data about contractors, their ability to carry out certain forms of contracts, and the classification into different types of effort.

We will say the Director General of Artillery wants to place a contract. He will go to the Contracts Branch. He will have to tell them what the type of thing is that he wants. He is allowed to have direct dealings with the contractors; but the whole of the financial and procurement side, so far as the realizing of it and the building of it is concerned, is actually handled on that side of the Ministry.

In certain cases they do let people work in direct contact; for instance, the Under Secretary for Atomic Energy. He generally works entirely directly with the Controller of Production (Atomic Energy). He is shown as a matter of organization under the Deputy Secretary.

QUESTION: With shipbuilding remaining a responsibility of the Admiralty during an emergency, where would questions of the allocation of personnel, that is, labor, these resources of manpower or facilities be settled? Where would those questions of allocation be settled?

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SIR ALWYN CROW: There would be a number of Ministries coming in there: Board of Trade; Ministry of Transport and the Ministry of Labour, which is affected as well.

The Ministry of Supply would come in on the iron and steel side, or the materials side. That is settled by special committees largely between the Ministries concerned. The Admiralty occasionally may find its self--and does find its self--in competition with ordinary civil transportation.

QUESTION: One of the all-important items of supply in war is fuel. That is handled by the Ministry of Fuel and Power. Would you explain just what relationships are arbitrary in the Ministry of Supply and the Ministry of Fuel and Power?

SIR ALWYN CROW: Well, we have standing interdepartmental committees between the Ministry of Supply, the Admiralty, and the Ministry of Fuel and Power. In addition to that, there is a Cabinet Committee which is solely charged with watching the possibilities of obtaining new sources of fuel, new types of fuel. And, again, that is helped by committee linkages.

If it came to a question of allocations on the defense side, between competing claims, the decision would be made probably by the Defence Policy Committee. The Fuel Committee acts essentially as a subcommittee of the Defence Policy Committee.

QUESTION: Many Americans understand the Ministry of Supply to be almost a purely civilian organization. And feeling that it is, they worry that perhaps the British Armed Services won't always get what they need, when they want it, and so forth.

You have shown that all of the top policy committees, and so forth, that you have outlined are amply represented with service members. To what extent, either in the offices as outlined on the board here, or in the establishments that are operated still further down the line, do people in uniform actually serve and occupy positions of importance?

SIR ALWYN CROW: To a very great extent, indeed. I am quoting from memory so that I may not be right, but I think we have something of the order of 700 to 800 representatives of the Armed Services in the Ministry in executive positions.

Take that chart, for example: The Controller of Supplies himself is a general. The Assistant Controller of Supplies is a major general. That is on the Munitions side.

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On the Air side, again you have an Air Marshal and an Air Vice Marshal. Coming on down the line, the Director General of Artillery is a major general; the Director General of Fighting Vehicles is a major general, and so forth.

The plan we decided to adopt--I don't know how successful it is going to be; it is used in the Ministry of Supply as a matter of policy--is that in any appointment, going right down the line, to try, so far as possible, to appoint the man whom they think is best suited for the job, irrespective of his background, whether civilian or military. I must say it has worked out very well.

QUESTIONER: But it would be true to say, sir, that the Director General of Artillery, for example, will always, must always, be a service officer.

SIR ALWYN CROW: Yes. There are certain places where service personnel must be appointed. But I was thinking of places, for instance, like in the Design Department or possibly the Director of Armaments for the Air side. These, legally, can be either civilian or military personnel. But it is true that certain key positions which are allocated to the services cannot be filled with civilians.

As regards other positions, legally, except for the secretarial side, which is a background side and doesn't deal, itself, with technical matters, you have what I told you, comparatively free appointment.

QUESTION: I have two questions, sir, both pertaining to guided missiles. One, is research and development for guided missiles for the Royal Navy vested in the Ministry of Supply?

SIR ALWYN CROW: Absolutely; yes.

QUESTION: Next, with limited funds for research and development, would you outline briefly the steps to resolve different interests among the three services?

SIR ALWYN CROW: Yes. First of all, I remind you of the policy that was laid down. Remember, the top one was research. It has top priority. All our funds nowadays are limited. In peacetime, Research and Development do get a very good crack of the general allotment. But within that the allocation is done in two ways: In the Ministry of Supply itself the competing claims are thoroughly discussed and an allotment is made under a committee with the Chief Scientist as chairman.

But over defense as a whole, the allocation to the Ministry of Supply--or, if you like, the allocation of jobs as between the Ministry of Supply and the Admiralty--is carried out by the Defence Research

Policy Committee. The Defence Research Policy Committee has a standing staff to analyze and appraise the value of research projects so far as it can. It has an assessment staff. On the basis of that, each year it produces a recommended plan, which goes to the Ministry of Defence, who has to say what should be done.

The Defence Research Policy Committee members are not actually executives. They are composed, as you see, from members of all the Ministries. But if their recommendation is accepted, it becomes executi-

You might get a situation, for instance, where you would transfer, as has happened, en bloc, people from the Munitions side to the Air side or possibly from the Air side to the Admiralty, and so on. It is a difficult problem.

I think it would be a pretty accurate guess to say that we have today, roughly, half the number of people we want in facilities and jobs. So that that allocation has to be a very vigorous one. But we have got, as I say, to keep in balance with all sides. The allotment for research and development does have top priority, and is particularly heavy in the Air side.

COLONEL MCKENZIE: Would you say, sir, that the number you have is occasioned by a lack of scientists or your inability to get the required degree of skill and knowledge?

SIR ALWYN CROW: I think--and I believe it to be true over here--that it is really occasioned by two things: One is the competing claims, so to speak, of ordinary nongovernmental employment, so far as the scientists themselves are concerned. It is not very easy to get really high-class men to undertake government service unless they are adequately rewarded.

But the real thing is, I think, we haven't got the requisite number of people. I have made an estimate of available top-grade scientists, that is to say, people who could be trusted to carry out work of a group without supervising; and in England that number, in the physical and engineering fields, is probably between 3,500 and 4,000 for the whole country. And I should say in the United States it isn't very much more.

That is our fundamental trouble--just to get the numbers we need. It has been accentuated, of course, in England by the fact that we have had what really amounts to six years' interruption in the training of scientists.

COLONEL MCKENZIE: I see Captain Rowley wants to ask a question. I am quite sure it is directly on this point. We will give him an opportunity to do so at this time.

CAPTAIN ROWLEY: I wondered, sir; is the larger part of the scientific research and development which is under the Ministry of Supply, accomplished on their own plan, or at the request of the Defence Establishment?

SIR ALWYN CROW: We try to keep about 25 percent to ourselves. In other words, we try to allocate at least 75 percent of our effort to the named projects recommended by the Defence Research Policy Committee. But we reserve the right to maintain, so far as we can, background people for background research.

And, in addition to that, we allocate a great deal of work to universities. We work just as you do over here. But we try to have in the establishments a definite percentage of the supervisory staff who are not held down to any one specific project.

CAPTAIN ROWLEY: Does the Ministry of Supply actually supervise all of the scientific research requested or needed by the three Military Services?

SIR ALWYN CROW: Not all.

CAPTAIN ROWLEY: I mean, supervises or coordinates.

SIR ALWYN CROW: Not all of it. The Admiralty has its own organization. I was speaking of the Ministry of Supply itself. About three-quarters are allocated, one-quarter not. I think, roughly, the same thing applies in the Admiralty.

CAPTAIN ROWLEY: Is there a board or any agency in the Defence Establishment to coordinate the desires or needs of the three Military Services in research and development before their requests are presented to the Ministry of Supply?

SIR ALWYN CROW: Yes. That is done mainly by the Defence Research Policy Committee. But before it actually comes to that point it is discussed thoroughly with the Chiefs of Staff Committee and with the Joint War Production Committee with regard to repercussions, or what will happen if they do succeed.

In other words, they assess the relative importance of different items, or possibly they give them weighting numbers, first of all. They try to work out, first, to what extent is a new departure likely to be achieved by work along this line? Secondly, if you can get success, can you apply it? What repercussions would there likely be? And, thirdly, if you satisfy those two things and get a good answer to those, what does it mean displacing?

They assess a new item on this basis. They can take these numbers and from them arrive at a sort of figure of merit. On that the policy is decided. That, incidentally, is the same system as is applied over here in connection with research and development.

QUESTION: How do you resolve differences of opinion in the committees if action is stymied by lack of unanimity among the committee members on an important matter? Does that ever happen?

SIR ALWYN CROW: Frequently. I won't say "stymied," but it is delayed. The only answer I can give you, Colonel, it is a sort of process of attrition. It all depends on who holds his point the longer.

QUESTION: On the question of finances, are the funds for the Ministry of Supply justified and appropriated directly to it, or do the services chip in their share of the cost of operation and supply?

SIR ALWYN CROW: The answer is half and half. On research and development, the Ministry of Supply does make provision in the budgetary estimates for allocations. But when it reaches the point of procurement, or even before that (prototype manufacture, and so on), as a general rule that figure is included in the parent Ministry budget--the War Office, the Air Ministry, and so forth. So that the Ministry of Supply's annual budget does not specify the amount of money it spends.

QUESTION: Who determines the over-all supply requirements of the country, and after they are determined who balances those requirements against the resources available?

SIR ALWYN CROW: Well, that is the permanent job of the Joint War Production Committee, a committee which I mentioned as being one of the three main committees of the entire Defence organization. That committee, you will remember, has one representative each from the Admiralty, the War Office, and the Air Ministry, and three from the Ministry of Supply. It is the business of that committee, in conjunction with the Board of Trade and the Ministry of Labour, to determine the repercussions and the results of adopting a policy. If an unfavorable answer should be given, the requirements might be affected.

QUESTION: It is not clear to me just what authority the Minister of Defence has over the Ministry of Supply and over the Admiralty. Would you explain that please, sir?

SIR ALWYN CROW: He has no direct authority as regards the chain of authority. On the other hand, he is responsible for the general formulation of the policy and in seeing that it is carried out.

His authority, then, comes in a very simple way: If the Admiralty, if you like, or the Ministry of Supply were going to defy him, they would not get his backing in Parliament on the estimates. They wouldn't get any money.

QUESTION: I have a question on the industrial plan. I feel certain that England has an industrial plan. I would like to know what organization draws this plan up and how often it is revised. I am speaking of an industrial organization plan, or mobilization plan.

SIR ALWYN CROW: Let me divide that into two sides because the air side and the land side are the two main jobs of the Ministry of Supply.

On the air side, you are dealing with an industry which is in war very important. The policy of the air side in placing contracts is to devote as much money as possible in the way of prototype and developmental manufacture to the various big air firms in order to keep them alive and to keep the plant in operation.

That is, I think, exactly the same method as followed over here. I remember being told by one big American firm here that its peak weekly production in 1945 was sufficient to take care of the air requirements for the whole world, in peacetime, for a year. That kind of picture is appearing all the way through. We have exactly the same problem.

On the land side, we rely much more on the resources of our own government factories. For instance, during the war, I think I am right in saying, there were more than 40 government ordnance factories. This number has now dropped considerably. But we have still got the possibility of expansion there.

Then, in addition, so far as possible the munitions people give educational and experimental orders to industry. But, one of the biggest difficulties is to persuade industry to take those orders. Such orders interfere with the normal work of industry, so it doesn't like taking them. A good deal of polite persuasion is usually necessary to place the orders.

QUESTION: I am not quite clear in my mind about that Under Secretary for Contracts (No. 2 on the organization chart), just where he begins, where he leaves off, and what his responsibilities are in connection with the getting of supplies. Could you give me some information on that?

SIR ALWYN CROW: Well, to make sure that I don't malign him, I will read you what his terms of reference are: He is in charge of all arrangements of contracts on military and civilian aircraft, aero-engines,

munitions supplies, clothing and textiles, provision of capital assets for contractors, technical costings, and contract statistics. He settles questions relating to patents and awards. He arranges payments for the use of inventions by government departments and allied governments. He also deals as a side issue, or rather a big one now, with all disposal policy--disposal of stores collected during the war.

In other words, what he really does is to keep a steady statistical check. If, for example, you wanted to buy a particular item, he would designate not only all the contractors on his books who are capable of dealing with the contract but, so far as possible, tell you their ability to undertake the contract and the likelihood of their satisfying it within the time specified. Then he actually places the contract and ultimately arranges for payment. He is an agent, in other words, for these other people.

COLONEL MCKENZIE: Is he a civil servant or a military person?

SIR ALWYN CROW: He is a civil servant.

QUESTION: My question may not be pertinent, sir, but if the Under Secretary for Contracts is a civil servant, might I ask is he a permanent civil servant or an appointive civil servant by the majority party of Parliament?

SIR ALWYN CROW: Well, I will answer your last question first. No civil servant is appointed by the majority party of Parliament. The Civil Service works independent of changes of government.

As regards the first one, I really don't know. We have a saying in England, "There is nothing so permanent as a temporary, unpaid civil servant." To that extent he is at least permanent.

QUESTION: When you answered the question about where the Ministry of Supply got its funds, I believe you answered only with regard to research and development. That was the way I understood it.

SIR ALWYN CROW: I'm sorry I did not make myself clear.

The Ministry of Supply gets its funds for research and development directly from Parliament. Its funds for procurement, prototype manufacture, and so forth for the services are allotted from the services which, themselves, present it in their budgetary estimates to Parliament.

Then, as regards its more general undertakings, like, for instance atomic energy, and so on, it goes directly to Parliament for that. It has a mixed budget, in other words: Some of it is obtained directly from Parliament, and some internally via the three services which it serves.

COLONEL MCKENZIE: We have a number of visitors this morning. I should not like to see this opportunity pass by without giving you a chance to ask any questions that you have. Are there any questions from our visitors?

QUESTION: I would like to ask whether or not the Ministry of Supply gets into the area of cataloguing, inventory control, the general supervision and distribution of materials once they are purchased? Is that left strictly up to the services?

SIR ALWYN CROW: They have a definite responsibility for still maintaining certain things like the flax control, raw materials control, iron and steel control, and so on, where, in any case, it is necessary as a matter of government policy to decide the competing requirements of imports. You see, the British Government policy, as you know, is to restrict imports as much as possible. There has to be some final authority to decide the relative claims, one import against another import. That is done partly by the Ministry of Supply and partly by the Board of Trade. We do retain within the country a number of controls and regional organizations for the pooling of supplies for both military and nonmilitary products.

QUESTION: A little earlier you indicated one of the advantages of the Ministry of Supply was to give, I think your term was, commonality. Does that mean to make sure that all three services buy the same item, identify it the same way in the specifications; or if one service doesn't agree to the specifications permit it to purchase a special item?

SIR ALWYN CROW: Well, if it comes to the point that you make, that is, they should need a special item, yes. But the Ministry of Supply does not consider that it is bound to produce just what the services want it to produce.

QUESTIONER: But there is some final authority.

SIR ALWYN CROW: The final authority is not the Ministry of Supply.

We will assume the Ministry of Supply furnishes a very excellent argument to the effect it is not able to furnish an article that the Army wanted, for example. Now if they were unable to persuade the Army to modify its request, that matter would have to be finally resolved probably in the Chiefs of Staff Committee or the Joint War Production Committee. That would be the authority in that case.

I have not been there for two years, but in the six years I was there I very rarely remember ever getting into such a direct conflict as that.

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GENERAL VANAMAN: Sir Alwyn, we are extremely grateful for your over-all view of the Ministry. Especially grateful, I know, are our observers, who have held the fort against 115 other "eager beavers" until your arrival.

We thank you very much for this presentation.

SIR ALWYN CROW: Thank you.

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