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Staff Memorandum (Copy No. 56) on Canada's Post-War Navy (Nov. 1940) 17pp., forecasting Canada's Naval needs after Second World War and recommending a suitable fleet composition.

CR.REF: Plans
Construction of Ships
Tribal Class DD's

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CANCELLED

(Final Report)

STAFF MEMORANDUM

- on -

CANADA'S POST-WAR NAVY.

NOVEMBER 1940.

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NAVAL SERVICE HEADQUARTERS

- O T T A W A -

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by W.E. for DIDA HOHQ

~~SECRET~~

Date JAN 10 1977

CANADA'S POST-WAR NAVY.

N.S.H.Q. OTTAWA - STAFF MEMORANDUM

C O N T E N T S.

Brief Summary of Memorandum.

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Naval Service Headquarters,
O T T A W A .

11th November 1940.

Summary of Conclusions.

- (a) Main Naval Bases at Halifax and Esquimalt.
- (b) Subsidiary Naval Bases at Sydney C.B., Gaspe, P.Q.,
and Prince Rupert, B. C.

(c) Ships.

<u>Class</u>	<u>East</u>	<u>West</u>	<u>Totals.</u>
Cruisers	2	2	4
Destroyers	9	9	18
A/S Vessels	10	10	20
Minesweepers	10	6	16
Magnetic Mine- sweepers	3	3	6

In Reserve - 20 A/S Vessels and 16 Minesweepers.

(d) Personnel.

R.C.N. (Officers 800
(Ratings 12000

Reserve (Officers 350
Forces (Ratings 3150

(e) Building Programme.

Two "TRIBAL" Class Destroyers laid down each year until 1948. It is presumed that the four cruisers will be acquired from the Admiralty either on loan or by purchase.

(f) Costs.

Not counting the capital cost of the four cruisers, but including capital cost of destroyer construction programme, annual estimates average \$26,000,000.

CANADA'S POST-WAR NAVY.

GENERAL.

1. During the London Naval Conference of 1936 the Japanese Delegation, before it was recalled to Japan halfway through the deliberations, endeavoured to gain general recognition of its contention that certain types of naval vessels were essentially offensive, while others were intended for essentially defensive purposes. It failed to obtain acceptance of these distinctions from any of the other Powers represented at the Conference.

2. But while it is generally agreed that it is not possible to distinguish between offensive and defensive types of ships, naval forces as a whole can be built up with either an offensive or defensive purpose in view. Unless some particular country is bent upon future conquest, peacetime navies are primarily designed for defensive purposes. Their composition is then dependent upon three principal considerations: the geographical factor, the extent of the commitments requiring to be protected by maritime force, and the form and scale of attack which might have to be met in an emergency.

3. It is not possible to lay down any general rules for defence, and every case must be considered separately. The British Empire is a special case in that it comprises a wide-spread Commonwealth of Nations which maintains its unity and supremacy by means of Sea Power. Its vast area and the extent of its maritime commitments and responsibilities provide full justification for the possession of a large "defensive" fleet. We may also regard this from the opposite point of view; that unless the Empire continues to possess naval forces commensurate with its

requirements, it cannot expect to maintain its unity and supremacy undisturbed or unchallenged.

4. The Royal Navy is the hub of British Sea-Power, and for over four hundred years it held its proud position alone. Today it is still the hub, but round it are gathered the Navies of Australia and Canada, of New Zealand, India and South Africa. We possess indeed an Imperial Navy, and the whole Empire shares in its provision and support. This would appear eminently reasonable. It is equally reasonable that the division of responsibility for maintaining this Imperial Navy should correspond to the various local geographical factors and commitments of the various parts of the Empire.

5. The size and composition of any local naval force will depend primarily upon the following factors:-

- (a) The length of the vulnerable Coast-line-s.
- (b) The number of important ports and harbours.
- (c) The number and extent of focal areas of maritime trade in the vicinity of coasts.
- (d) The volume of seaborne trade.

6. In addition to the above, some consideration must be given to the possibility of hostile threat and the degree thereof. Wartime naval requirements are naturally conditioned by the country or countries which are the enemies of the moment.

In peacetime they are based on more general considerations, often unduly biassed by some particular threat which colours the public mind at the time. That such a bias does not always lead to a satisfactory state of affairs has already been amply demonstrated in Canada; since shortly after the last war we have been paying more and more attention to our western seaboard, based on the assumed threat of trouble with Japan, only to find that our immediate enemies are after all in Europe, and that the danger area is our eastern seaboard. It is only fair to add that those directly responsible for defence have continued to stress the importance of treating both coast-lines on an equal basis, and this is surely the true answer to our full assurance of security. Canada's post-war naval forces must suffice to cover requirements of defence in both the Atlantic and Pacific Oceans.

7. In a memorandum on Sea-Power written in 1902, the Admiralty stated that "...It would be necessary that we should have sufficient power available to carry on a vigorous offensive against hostile outlying squadrons, without unduly weakening the force concentrated for the decisive battle, whether in Europe or elsewhere." Admiral Jellicoe remarks in his Report that ".....the weakness of our outlying squadrons prevented the early institution of this vigorous offensive in the late war."

8. We are very liable to think almost exclusively in terms of "defence"; the very title of the Department encourages this dangerous habit. Offence is still the best form of defence and the vital importance of offensive operations must not be lost sight of.

9. The present war is being fought under very different conditions to the war 1914-18; the enemy has no proper Main Fleet to "contain" which we must

keep a large and powerful force concentrated; above all the advent of huge air forces puts a new complexion on maritime operations in general. A future war may well be fought under still another new set of conditions. But there is no change in the basic necessity of maintaining command of the sea in order to assure safe transport for Empire Shipping, whether for military or commercial purposes. The importance of having strong outlying forces for the protection of the sea-routes and focal areas is still and always will be paramount.

HISTORICAL.

10. Although the question of Canadian Naval defence was first seriously considered in 1902, the real birth of the Royal Canadian Navy occurred as a result of a Joint Resolution by both Parties in the Canadian House of Commons on the 29th March 1909. This read in part:-

".....This House fully recognises the duty of the people of Canada, as they increase in numbers and wealth, to assume in larger measure the responsibilities of national defence.....
The House expresses its firm conviction that whenever the need arises the Canadian people will be found ready and willing to make any sacrifice that is required to give to the imperial authorities the most loyal and hearty co-operation in every movement for the maintenance of the honour and integrity of the British Empire". Only after thirty years is the confidence of the house beginning to be justified.

11. The Admiralty memorandum of 20th July 1909 recommended the formation of a "distinct fleet unit". They recognised that under certain conditions local defence flotillas of torpedo craft and submarines might be of limited use, but observed that a scheme limited

to torpedo-craft would not be a good means of developing a self-contained fleet capable of both offence and defence.

12. The smallest "fleet unit" suggested was:-

One Battlecruiser,
Three Light Cruisers,
Six Destroyers,
Three Submarines,
and the necessary auxiliaries.

Later, however, it was recognised that Canada's double seaboard rendered the provision of the proposed "fleet unit" unsuitable for the present. (The Panama Canal, shortening the distance by sea between coasts from 13,800 miles to 6,300 miles, was not then completed.)

13. The Admiralty represented that it was difficult to make further proposals without knowing approximately the amount Canada was willing to spend. Canada then suggested the preparation of two schemes, involving annual expenditures of three million and two million dollars respectively. On this basis the Admiralty then proposed:-

5 Light Cruisers	or	3 Light Cruisers
6 Destroyers		4 Destroyers

No decision was arrived at but a small staff of officers came from England to organise the new service.

14. The Naval Service Act of Canada became law on 4th May 1910 and at the same time Sir Wilfrid Laurier announced the following building plan:-

4 Unarmoured cruisers (Bristol class)
1 Unarmoured cruiser (Boadicea class)
6 Torpedo-boat Destroyers (Improved River Class)

The total cost of building was estimated at eleven million dollars + 33% if the ships were to be built in Canada. Unfortunately the programme was never even begun, the Government being defeated at the General Election of 1911.

15. In 1912 a Bill passed the House of Commons for the building of three battleships in Great Britain at a cost of \$35,000,000, but it was rejected by the Senate and automatically dropped. It must be remembered that the expenditures quoted above would not apply today, when ships are larger, more complicated, and very much more costly to construct and maintain.

16. The next occasion on which the naval defence question came once again to the fore was the publication of the Jellicoe Report early in 1920. This Report is very comprehensive and deals with practically every aspect of the establishment of a "local navy".

17. Canada's naval requirements are viewed under two heads: Canada's own requirements for her own safety; and in the broader light of the security and safety of the Empire as a whole.

18. To quote from this Report: "The Naval Force suggested as adequate purely for the protection of Canada's trade and Canada's ports under the conditions assumed comprises:-

3 Light Cruisers
1 Flotilla Leader
12 Torpedo Craft
8 Submarines

and certain auxiliary small craft for training purposes, etc." This programme was expected to cost, for construction and maintenances some \$10,000,000 a year.

19. And again: "If Canada at any period decides to co-operate in the general needs of the Empire...." The Basis suggested is a "Fleet Unit" which, it is

considered that war experience has shown, should comprise in the case of Canada:

1 Battlecruiser,
2 Light cruisers,
6 Destroyers,
4 Submarines,
2 Fleet Minesweepers,
and certain auxiliary craft."

It may be noted that the idea of a "distinct fleet unit" and with minor changes the composition of such a unit, had not changed during a period of over ten years which included four years of war. (See paragraph 12).

20. The Report indicates that almost the whole of the force suggested for Canada's own needs is intended to work on the Pacific Coast. Yet although our commitments on this coast are outlined in some detail, no specific reasons are given for stipulating so many cruisers, destroyers, etc.

21. The practical recommendations in this Report, particularly those concerning numbers and types of ships (upon which of course most of the other recommendations are based) were made twenty years ago. The changes which have taken place since 1920 are far greater than those which occurred in the first twenty years of this century. Ships too have changed. With the advent of the high-speed battleship the "battlecruiser" will disappear. Armament, speed and endurance of cruisers have increased their capabilities and usefulness. Again, the Report deals with Canada's western seaboard in considerably more detail than with the east, because, Germany having not only been defeated, but effectively demilitarised by the Versailles Treaty, the principal threat was considered to come from Japan. As has been already pointed out, this supposed threat has coloured almost the whole of the past twenty years.

22. Altogether, it cannot be said that this brief glimpse into the past history of paper programmes and shattered hopes proves of much practical assistance in determining future requirements. In any case, haphazard lists of types and numbers are useless and even dangerous. Above all, world conditions have altered out of all recognition in the past few years and are still very much in the melting pot. The only reasonable solution is therefore to review to the best of our ability probable future requirements, in an effort to determine the most efficient size and composition of Canada's post-war Navy.

CONSIDERATIONS

23. The fundamental factors governing the strength of a naval force are two - political and geographical; while the second factor is more or less fixed, the first is essentially unstable.

24. Political. There are two political factors which we are justified in assuming will remain unchanged after the present war.

- (a) No possibility of war with the United States as an enemy.
- (b) No possibility of war without the Naval forces of the Empire being on our side.

A corollary of (a) to be borne in mind is the possibility of a war in which the U. S. A. is an ally. As regards (b), circumstances could of course arise where Canada and the United States were without the support of the British Fleet, which might have been depleted and subsequently employed on the defence of other parts of the Empire.

25. Accepting these two factors as axiomatic, we are justified in assuming that the

main forces of an enemy, wherever they may be, will be neutralised by the main force of the British and/or United States Fleet. It follows that our own problem is therefore the defence of our own coasts and harbours and the protection of seaborne trade in the vicinity of our eastern and western seaboard. Such protection can of course be best afforded by attacking and destroying enemy forces which threaten our areas.

26. In making this logical assumption, there are two points that must not be lost sight of; the value of offensive as well as defensive operations in our own waters; and the possible value of any assistance which we might provide in the main theatre of war.

27. Geographical. The outstanding geographical factor is of course our possession of long and indented coastlines facing both the Atlantic and Pacific Oceans and, providing the Panama Canal is available, the fact that it requires 14 days at 20 knots to go from one coast to the other, with the necessity of refuelling halfway. It is doubtful if the trip round the Horn could be accomplished in less than six weeks.

28. It now appears that a new factor may have to be taken into account in the future. Canada is assuming responsibility for the defence of Newfoundland, and there is reason to believe this may become a permanent commitment. In any case it should be included in our calculations.

29. The fact that Canada's post-war naval forces should be strong enough to fulfil our needs on both coasts has already been stressed. (See paragraph 6). Their distance apart by sea, and the fact that even this is dependent upon the availability of the Panama Canal and suitable refuelling facilities is a further argument to support the contention. It is unreasonable to oppose the argument by quoting the principle of concentration of force since the nature of the forces we are considering is primarily defensive.

30. Personnel. Naval policy is also governed by the decision of successive Canadian Governments that our naval forces should be Canadian-manned, full use being made of Imperial training facilities. As a result of the war, we now have largely increased barracks accommodation and our own training facilities. Provided that an adequate proportion of these is retained after the war, the recruiting of personnel in sufficient numbers is unlikely to be a governing factor in the size of the Navy.

31. Forms and Scales of Attack. In estimating defensive and protective naval requirements it is necessary, at least to some extent, to take into account possible enemies and the forms and scales of attack which they might be able to bring to bear against us. In the present circumstances it is impossible to forecast the post-war situation in these respects. But just because it is impossible hardly justifies us waiting until after the war to commence our preparations for that time. The best interim solution appears to be the assessment of a reasonably average scale of attack, and temporarily at least to base our naval requirements on that.

32. The suggested forms and scales of attack, applicable to either coast, are as follows:-

- 1 - or possibly 2 - Capital Ships.
- 2 - 8 inch Cruisers.
- 2 - Armed Merchant Cruisers.
- 4 - Ocean-going Submarines.
- Minelaying by surface craft or submarines.
- Seaborne aircraft in small numbers, operating against ships.

33. We must now consider the various types of ships, in relation to the duties they are required to perform and the scale of attack they may have to meet.

34. Capital Ships: In the present stage of its development, the R.C.N. would find it difficult to maintain and operate Capital Ships. It is recommended that we should continue to rely upon the Royal Navy - and perhaps to some extent upon the United States Navy - for this type of defence, whilst we concentrate upon a contribution of cruisers, destroyers and smaller craft that are within our power to operate.

35. Cruisers. Some eight different types of Cruisers are now included in the Royal Navy, ranging from the 10,000 ton ship carrying 8 inch guns to those of 4,200 tons carrying 6 inch guns. The cruiser has a dual role; it works with the Main Fleet; and it is employed for trade protection. For this latter purpose the cruiser is ideal; it has good sea-keeping qualities and high endurance. The "Improved Southampton" class (BELFAST and EDINBURGH) of 10,000 tons and $32\frac{1}{2}$ knots, carrying 12 - 6 inch guns, 12 - 4 inch high-angle guns, 6 - 21 inch torpedo tubes and having a very high radius of action was designed particularly for this work of trade-protection, and should be ideal for our use. There is also the slightly smaller FIJI Class of 8000 tons, 33 knots, 12 - 6 inch, 8 - 4 inch H.A., of which there are now nine ships in commission; it might be possible for Canada to take over the manning and operation of four of these, either by purchase or on loan. The respective complements are approximately 760 and 650 in these two classes.

36. Destroyers. The Modern type of destroyer of the TRIBAL Class is ideal for the Royal Canadian Navy. Its high endurance and seaworthiness allow it to operate over the long distances which service in the R. C. N. demands and its powerful gun armament places it in a position to operate singly on the high seas without fear of being overcome by enemy armed raiders of lesser fighting value than cruisers. Destroyers have proved themselves in this, and the last, war, as the ideal counter to the submarine and the useful maid-of-all-work. A flotilla of these

vessels (leader and eight destroyers) on each coast will provide a reasonable defence force for patrol of the focal areas in local Canadian waters and for the A/S escort of fast liners and troop convoys. This number is recommended on the assumption that we shall not be required to develop full naval power on both coasts at the same time. If, in the opinion of the Government, it is necessary for Canada to develop a two-ocean navy for the same reason that the United States is now doing, a further flotilla of one leader and eight destroyers will be required as, with the additional commitment of Newfoundland on our shoulders, we shall need two flotillas for security on the Atlantic seaboard in addition to one on the Pacific.

37. A/S Vessels. The increasing powers of the modern submarine make specially-fitted A/S vessels essential for the defence of harbour approaches and focal areas of trade. Large numbers of these vessels are required in wartime, and many of these are usually obtained by the requisitioning of suitable craft. It is very necessary to maintain a number of them in peacetime for training purposes and to be immediately available in an emergency. It is considered that a minimum of two hunting groups of 5 each on each coast would suffice, that is twenty in all, with a further twenty in reserve, under proper Reserve Fleet routine inspection.

38. Minesweepers. These are necessary to protect harbours and their approaches from contact and magnetic mines, and are of two different types - the minesweeper (M/S) and the magnetic minesweeper (M.M/S). Requirements for these vessels are not confined to a single port on each coast. Halifax, Sydney, Saint John, N.B., St. John's, Nfld., and the Gulf of St. Lawrence on the east coast; Esquimalt, Vancouver and Prince Rupert on the West, will all require units of both types. Use of requisitioned ships can be made as in the case of A/S vessels, but a certain number must

be maintained for training purposes and for immediate use in an emergency. A minimum of two in commission for each of the main ports mentioned would provide 10 on the East and 6 on the West coast. At least an equal number should be kept in reserve. A minimum of three Magnetic Minesweepers on each coast is desirable.

39. Bases and Facilities. Efficient and fully-equipped bases at Halifax and Esquimalt form the basis of the naval plan. It is considered that subsidiary bases on either coast, sufficiently equipped in order to be able to expand at short notice, are necessary additions to the Naval organisation. The obvious location for these subsidiary bases would seem to be Sydney and Gaspé on the East Coast and Prince Rupert on the West Coast.

POST WAR OBJECTIVE.

40. Defended Bases.

2 Main Naval Bases - Halifax and Esquimalt.

3 Subsidiary Bases - Sydney, Gaspé and Prince Rupert.

Ships.-

Capital Ships	None.	
Cruisers	2 each coast	- 4
Destroyers.....	9 each coast	- 18
A/S Vessels.....	10 each coast	- 20 (and 20 in reserve)
Minesweepers (M/S).....	10 East and 6 West	- 16 (and 16 in reserve)
Magnetic Minesweepers (M.M/S)	3 each coast	- 6.

Personnel.

(a) R. C. N.

Officers	800
Ratings	12000

(b) R. C. N. R. and R. C. N. V. R.

It is considered that the Reserve Forces should be at least double their present authorised peace-time strength:

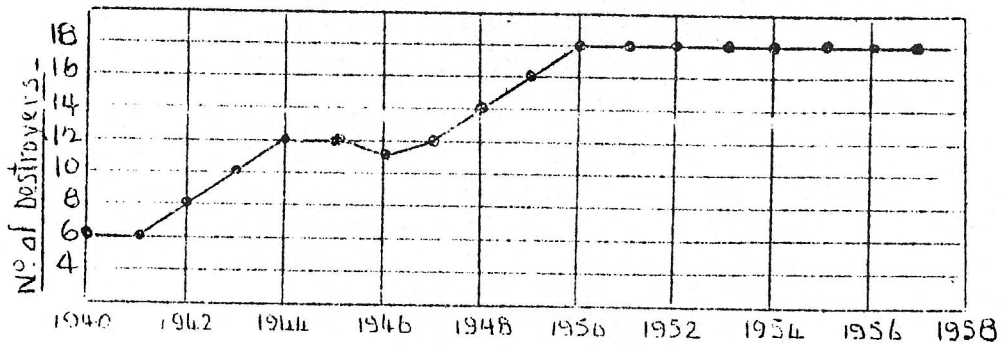
R.C.N.R.....	{	Officers - 150
	{	(Ratings - 850
R.C.N.V.R.....	{	Officers - 200
	{	(Ratings - 2300

These numbers are intended as a general indication only. Actual strength of the Reserve Forces will have to be carefully considered after the War.

41. There will be no difficulty in obtaining the A/S and M/S vessels from war construction. The question of destroyers however, requires investigation, in order to determine the building programme necessary to achieve the postwar objective.

<u>Ship</u>	<u>Completed</u>	<u>Over Age</u>
Saguenay	1930	1944 - (Official Age
Skeena	1930	1944 - (Limit for Des-
Ottawa	1931	1945 - (troyers (London
Restigouche	1931	1945 - (Naval Conference
St. Laurent	1931	1945 - (1936) is 16 years.
Assiniboine	1932	1946 - (War years count
Tribal A.	1942	1958 - (double. Two war
Tribal B.	1942	1958 - (years are allowed
Tribal C.	(1943)	1959 - (for in this
Tribal D.	(1943)	1959 - (case,

and two each year until 1948.



42. From the above it will be seen that provided no further losses are incurred during the present war, a building programme of two TRIBALS per year up to 1948 inclusive will provide us with our proposed force of destroyers ten years from now.

CAPITAL COST.

43. Cost of construction in Canada of 18 TRIBAL Class Destroyers at \$4,000,000 each:-

\$72,000,000

In addition, the original outfit of stores, ammunition and torpedoes will cost \$450,000 per ship:-

\$8,100,000

TOTAL . . \$80,100,000

Spread over ten years, the annual capital outlay required will be:-

\$8,000,000

Maintenance and Total Costs.

These costs will rise during the ten years as two destroyers are added annually.

x	4 Cruisers @	\$1,400,000	....	\$5,600,000
	5 Destroyers @	312,000	....	1,872,000
	20 A/S Vessels @	128,000	....	2,560,000
	16 M/S Vessels @	128,000	....	2,048,000
	6 M. M/S Vessels @	50,000	....	300,000
	2 Barracks @	1,000,000	....	2,000,000
	2 Dockyards @	300,000	....	600,000
	2 Armanent Depots @	250,000	....	500,000
	3 Subsidiary Bases @	50,000	....	150,000
	N.S.H.Q., Ottawa		.....	240,000
	Courses in England		.....	100,000
	Naval College		.....	120,000
<hr/>				
	Total Maintenance Costs		.....	\$16,090,000
	Annual Capital Outlay for Destroyer Construction		.....	8,000,000
<hr/>				
	Total Estimates at Start		.....	<u>\$24,090,000</u>
<hr/>				
	Total Estimates at End of 10 years			<u>\$27,834,000</u>

x Capital Cost of Cruisers Not included.

44. The approximate figures worked out above are probably conservative but are certainly modest. It is illuminating to make a few comparisons with some available pre-war figures.

45. The following table was made up from the figures for 1927-28, half-way through the "peace of 1918-39" and before the economic crash of 1929.

Country	Expenditure on Navy. (\$Millions)	Population (Millions)	Naval Expenditure per Capita	Value of Shipborne Trade per Capita.	Equivalent "Insurance Premium"
Great Britain	295.000	45.0	\$6.55	\$180	3.60%
Australia	10.000	6.0	\$1.66	\$228	0.73%
Canada	2.725	9.5	\$0.30	\$116	0.26%
New Zealand	2.430	1.5	\$1.62	\$320	0.50%
South Africa	0.360	1.5	\$0.24	\$230	0.10%

46. If we assume an increase of Canada's population to 11 millions, and use the same per capita figures for value of seaborne trade, an expenditure on the Navy of twenty-five million dollars annually gives us a per capita naval expenditure of \$2.20 and an equivalent insurance premium of 1.8%, which is still only half that paid by Great Britain in peacetime.

47. It is interesting to note that the total peacetime expenditure on the Navies of the Empire in pounds sterling is almost exactly equal to the population of the Empire. Thus were the burden to be shared equally the annual cost per head of the Empire's population would be one pound sterling.

11th November 1940.