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Date: OCT 15 1986

THE ANTI-AIRCRAFT DEFENCES OF THE
ATLANTIC COAST

Narrator's Note

The first 21 paragraphs of this narrative are taken intact from The AA Defences of the Pacific Coast.

Material for the remainder of the narrative was obtained from files at HQ, Atlantic Command, from War Diaries and files at NDHQ, and by interviews with General Staff and AA personnel in Atlantic Command.

-G W L Nicholson (Maj)

19 Feb 45

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THE ANTI-AIRCRAFT DEFENCES OF THE ATLANTIC COAST

I PROVIDING THE TOOLS

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Para

The Problem of Equipment	1
Pre-War Planning	2
Early Requirements in Armament	4
Equipment Ordered from War Office	8
Anti-Aircraft Orders Placed in Canada	13
Provision of Fire Control Equipment	16
Electrical Methods of Fire Control	17
Employment of Anti-Aircraft Searchlights	19

II THE FIRST THIRTY MONTHS

The Original Defended Area	22
Early AA Defences - Halifax	26
Early AA Defences - Sydney	30
Early AA Defences - Saint John, NB	31
Early AA Defences - Arvida	34

III MANNING THE EQUIPMENT

Increased Scale of AA Defences	38
Authorization of AA Units	42
3.7 inch Guns	47
40 mm Bofors Guns	48
Later Authorization	49
Additional Units - 3.7 inch Guns	51
Additional Units - 40mm Bofors	52
Increase In Scale of 40 mm Guns	53
Training the Personnel	55
Cadre Training	57
The Shortage of Personnel	59
Formation of AA Regts	63
Relation of AA Regts to Other Formations	66
AA GORs	67
AA Searchlight Batteries	70
1 AA S/L Bty	71
5 Special Mobile AA S/L Tp	73
16 AA S/L Tp	75

IV THE COMPLETION OF EXPANSION

Changes in Scale of AA Defences	76
Discontinuance of Heavy AA Btys at Isolated VPs	80
The Peak is Reached	82
21 AA Regt RCA - Halifax	83
22 AA Regt RCA - Saint John	86
23 AA Regt RCA - Sydney	88
24 AA Regt RCA - Arvida	92
Early AA Defences in Newfoundland	99
25 AA Regt RCA - St Johns - Torbay	102
Proposed Joint Canadian - US GOR	106
Reductions in AA Defences - Torbay	109
26 AA Regt RCA - Gander Area	111
26 AA Regt RCA (FS)	116
AA Defences at Goose Bay, Labrador	120
Independent AA Batteries - Shelburne and Yarmouth	129
10 LAA Regt RCA	131
Provision of AA Fire Control Equipment	133
Operational Training and Practice Shoots	136
AA Control at HQ Atlantic Command	138
Restrictions and Reductions	140

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R E P O R T N O 9

HISTORICAL SECTION

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Supplementary Report on Canadian
Participation in Civil Affairs

1. A series of reports on the Canadian participation in Civil Affairs/Military Government is being prepared by the Historical Officer (Civil Affairs) of the Historical Section at Canadian Military Headquarters from information available from Canadian, British and American sources in London. As work progressed on those reports it became apparent that there were certain gaps in the story which could only be filled after examination of information on file in Ottawa.
2. This report has been prepared by the Historical Officer (Civil Affairs) from such material. A great number of Army Headquarters files have been examined. The Historical Officer (Civil Affairs) has also had access to certain files of the Privy Council Office. The resultant report - though it does not attempt to tell a complete or consecutive story - comprises information on a variety of aspects of Civil Affairs/Military Government and on other related subjects which should be of value to the Official Historian.
3. This report is divided into the following sections:
 - I. Training of Civil Affairs Officers in Canada.
 - II. Training of Civil Affairs Officers in U.S.A.
 - III. Training of Civil Affairs Officers for the Far East.
 - IV. Canadian Commitment to Civil Affairs in Europe.
 - V. Canadian Contribution to the Allied Control Commission for Germany.

TRAINING OF CIVIL AFFAIRS OFFICERS IN CANADA

4. Although 14 Canadian officers had been despatched to the first Civil Affairs Staff Course which had commenced at the Civil Affairs Staff Centre, Broadlands House, Wimbledon on 25 Feb 43 and had subsequently been loaned to the War Office by whom they were sent to North Africa for a short period of training in civil administration duties (Hist Sec, C.M.H.Q. Report No. 140, paras 19 and 22), it was not until the end of May 1943 that Maj-Gen P.J. Montague, Senior Officer, Canadian Military Headquarters, forwarded to Army Headquarters a request

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II THE FIRST THIRTY MONTHS

THE ORIGINAL DEFENDED AREAS.

22. During the two and a half years that were to elapse between the outbreak of war and the arrival of modern anti-aircraft equipment, the story of A.A. defences on the Atlantic Coast centres around the ports of Halifax, Sydney, and Saint John, N.B. The limited armament available was mainly distributed between these three centres, whose strategic importance and exposed location made them both desirable objectives and vulnerable targets for attack from Axis aircraft.

23. At Halifax, a port which was to become second only to Liverpool in the volume of supplies handled for the United Nations, there were, in addition to the large convoy assembly area in Bedford Basin, such important vulnerable points as the extensive oil installations at Imperoyal, the Naval Dockyard, the berthage for troop transport, the Joint Service Magazine, and the Airport at Dartmouth.

24. Sydney by virtue of its commanding position athwart Cabot Strait guards the southern entrance to the Gulf of St. Lawrence and the Maritime North Shore. Naval installations and an anchorage where convoys often reaching seventy-five ships assembled presented attractive bombing targets, but ranking highest among the vulnerable points were the large steel works in which coal from Glace Bay smelted ore from Bell Island to produce fifty percent of Canada's steel output.

25. Less exposed to attack by reason of its geographical position, but containing targets of vital importance, was Saint John, N.B. with its ocean terminals and its huge dry dock able to accommodate major war vessels for repair. There were other areas on Canada's East Coast and in Newfoundland and Labrador for which it was deemed necessary to provide

anti-aircraft defences,--but ^{these} ~~new~~ places had to await such protection by Canadian forces and equipment until the summer of 1942.

26. EARLY A A DEFENCES - HALIFAX.

The initiation of the Precautionary Stage against Germany on 26 Aug 39 found Halifax with two obsolete 13-pdr QF 9-CWT AA guns, part of a shipment of eight that had come from Gt. Britain in 1920 (35). Some 800 rounds of ammunition in poor condition remained in Halifax, -- all that was left of the supply sent to Canada after the 1914-18 war, depleted by annual expenditures in NPAM practice camps. Fire control equipment was as out-of-date as the guns, and consisted of two old-model height finders, and a Brocque predictor which had been repaired locally and put into serviceable condition. Immediately upon receipt of the warning telegram, details of the 1 AA Bty (Halifax's NPAM anti-aircraft unit) mounted the two guns at York Redoubt on hastily constructed wooden platforms weighted with old railroad steel (36).

27. On 28 August the 4 AA Bty (Permanent Force) arrived from Kingston with the only modern anti-aircraft equipment in Canada,-- four 3-inch QF 20-cwt guns, and placed them in action on the east side of Halifax Harbour, two at Imperoyal and two at Burnside. The battery brought with it a Vicker's Predictor Mark VII, and one ring-sight telescope. These were distributed one to each gun-site. The Commanding Officer, Col. G.S. Craig, left the battery to become Commander at Halifax Fortress. He was succeeded by Capt. J.N. Lane (Later Brig. and CRCA 4 Div). For a year the 4 AA Bty continued to man the 3-inch guns, moving two of them to Conley St for the protection of Halifax Airport when new 3.7-in. guns became available at Burnside. In August 1940 the battery was converted to the 4 Light AA Bty., RCA. The guns and all stores were handed over to details of the 14 AA Bty., newly organized at Halifax, and at the end of the year the Permanent Force unit went overseas with the Second Division, joining the 2 AA Regt. in England (38).

28. Meanwhile, early in 1940 four modern static 3.7" AA guns, all that the War Office could spare, had arrived in Canada from Great Britain (see para 11 above), and had been assigned to the defence of Halifax. Three of the new guns were manned at Burnside on 5 Jun 40 by details of the 1 AA Bty, the fourth being placed at Hartlen Pt, across from Devil Island, for training purposes. Like the other NPAM anti-aircraft units in the Command, the 1 AA Bty had not yet been mobilized to War Establishment. Both the Halifax AA units were sadly under strength. A letter from the Fortress Commander at the end of 1940 urging that the establishments of the 4 and 14 AA Btys be increased, pointed out that there were "too few sergeants, cooks, clerks, drivers (i.e.), motor cyclists, spares, telegraphists, and no G.P.O.'s assistants, equipment repairer, butcher, motor mechanic, driver mechanic, technical storeman, storeman, medical orderly, orderlies, or personnel for water and sanitary duties"(39). In order that the batteries might be prepared for instant action it was necessary, with the existing strengths, for practically all personnel to sleep fully clothed with their boots on. Medical authorities had raised objections to this practice, ~~the~~ objections that could only be met by amending the orders regarding preparedness for instant action at all times, unless the increased establishment asked for was provided.

29. On 9 Jun 41 the 14 AA Bty was moved to Arvida, where the AA defence of the aluminum plant had been given high priority. The battery took its four 3-inch 20 cwt guns with it, and Halifax was inadequately left with only the four QF 3.7-inch guns and the two old 13-pars., all manned by the 1 AA Bty (40). But the picture was not quite as black as might first appear. In the harbour and berthed at the Ocean Terminals were many warships of the Royal Navy, undergoing refitting or various forms of repair. Through ~~the~~ arrangements made by the Joint Service Committee, with Admiral E.L.Holland, R.N., the 4.5" guns of H.M.S. FORTH and the AA armament of other naval units were placed under tactical control of the Fortress Commander (41). Telephone communication was established from the GOR, Halifax Fortress to the various berths where

H.M. ships lay, and all AA guns on board were kept manned for any emergency. In this way the potential fire power at the call of the Fortress Commander was substantially increased, although it was realized that the varied armament and varying positions of the ships made it impossible to allot definite sectors of defense to them. In the event of an attack ships would be instructed to fire on enemy aircraft with any gun that could be brought to bear, regardless of the location of the target. Unsatisfactory as this arrangement was from the viewpoint of fire control (nor was there a guarantee that any of H.M. ships might be in the harbour at the time of an attack), it was an emergency measure that those responsible for the defence of Halifax were glad to accept, until such times as Canadian production should furnish the guns for an adequate number of AA batteries on land.

EARLY AA DEFENCES - SYDNEY

30. The outbreak of war found Sydney without anti-aircraft protection of any kind. Work on emplacements was immediately begun, and two days after Canada's declaration of war on Germany two 4-inch QF high angle naval guns arrived from Halifax. Mounting was completed a week later, the guns being placed in position at Westmount, across the Sydney River from the steel plants (42). To provide some form of fire control equipment for the guns, the only ring-sight telescope was withdrawn from the 4 AA Bty, and with new drums constructed at Halifax Fortress to make it suitable for 4" guns, the instrument was sent to Sydney. With accommodation for operational troops in Sydney at a premium, sufficient personnel to man the two AA guns were brought from the 6 AA Bty (NPAM) at Yarmouth, the remainder of the battery being left in rented quarters at their home station (43). In preparation for their manning duties one gun section of the 6 AA Bty spent two months on Lawlor's Island, Halifax, where they trained on one of the QF 13-pdr guns, loaned by the 1 AA Bty at York. The section moved to Sydney on 4 Dec 39 (44). No further change in Sydney AA defences was to take place until

other units and normal wastage had reduced the strength of the 8 AA Bty to eighty-nine all ranks (51). It was time to prepare for the manning of the long expected new AA equipment when it should arrive. On 1 Oct 41, the A G authorized the conversion of "Details of 8 AA Bty RCA" to the 8 AA Bty RCA (Type H), to be formed on an establishment of 6 officers and 152 other ranks. At the same time similar action was taken with the 1 AA Bty at Halifax and the 6 AA Bty at Sydney (52). Nine more months were to elapse before 3.7inch equipments or 40 mm Bofors became available for use in M.D. No.7.

34.

EARLY A A DEFENCES - ARVIDA

One other area in Eastern Canada shared the meagre AA defences of those early equipment-lacking days. Powered by the huge hydro-electric installations at Shipshaw, whose generating capacity ran to more than two million horsepower, the Aluminum Company of Canada's plant at Arvida, Quebec, processing South American bauxite into the aluminum essential to war production, was regarded as an important enemy objective, and, because of its relatively forward position near the East Coast, a potential target for air raids. Measures against sabotage had been taken in June, 1940, when detachments from le Regiment de Chaudière (later relieved by a company of Veterans Home Guard) were stationed in the area to guard the aluminum plant at Arvida, and the dams and power-houses at Chute a Caron and Ide Maligne, respectively, five and thirty-five miles up the Saguenay River (53).

35. To provide anti-aircraft defence for these vulnerable points the four QF 3-inch AA guns which the 4 AA Bty had taken to Halifax on the outbreak of War, were assigned to Arvida. Arriving with the guns on 11 Jun 41 (see para 29 above), the 14 AA Bty, who had been manning them at Halifax for nearly a year, put them into action without loss of time. One section of two guns went to protect the half-million horsepower

the arrival of new equipment in June, 1942.

31. EARLY A A DEFENCES - SAINT JOHN, N.B.

Although the AA defence requirements recommended by the Chiefs of Staff Committee early in 1939 included the provision of heavy guns at the Strait of Canso and at Saint John, N.B. (see para. 7 above), no AA armament was available at either place in September, nor, in fact at any later date were AA guns placed in the Canso Area. When the Precautionary Stage came, Saint John's, NPAM anti-aircraft unit, the 8 AA Bty, RCA, recently reorganized from the 106 Fd Bty RCA (45), had just commenced annual summer training at Halifax. After a busy week during which the battery helped man the forts in the Halifax area (Fort Hugonins and Fort Ogilvie), it returned to Saint John on 1 Sep and commenced recruiting. By the end of the month 256 had enlisted.

32. At first three Lewis light machine guns fitted with AA sights, mounted on elevators in Saint John Harbour, provided the only AA defences for the Dry Dock and Ocean Terminals (46). A request made in September for the provision of 13-pdr guns for training purposes for the 8 AA Bty brought the General Staff reply that all AA guns in Military District No. 6 were needed for the AA defence of Halifax and Sydney (47). In April 1940 the battery began artillery training on an eighteen pounder gun⁽⁴⁸⁾ but it was not until September 1940 that two of the old 13 pdrs were received from Halifax and placed in action by the 8 AA Bty in their newly constructed positions at Fort Howe (49). For fire control equipment Halifax Fortress sent to Saint John its Hawtree Height Finder,--for all practical purposes a museum piece.

33. In May 1941 Saint John's anti-aircraft defences were strengthened by the addition of four new .50 inch Colt Machine Guns on AA mountings (50). By this time drafts to

installation at Isle Maligne; the remaining guns, supplemented by four .5 Colt Browning's of the No. 1 AA MG Troop, took up positions west of the Aluminum plant in Arvida (54). For the next nine months the 14 AA Bty remained at Arvida manning the 3-inch guns, but finding time also to do some training in preparation for handling 3.7's. To this end personnel of the battery exchanged duties, a section at a time, with detachments of the 1 AA Bty at Halifax. There they carried out practice firing during September with the static 3.7-inch gun at Hartlen's Point (55).

36. In December, four days after Pearl Harbour, the 1 AA MG Troop hurriedly left Arvida for the Pacific Coast, taking their Colts with them (56). Soon after the turn of the year the 14 AA Bty received word of a new role that was to take them to Newfoundland, and at the end of January the four 3-inch guns and all stores and equipment were taken over by the 17 AA Bty, a French-speaking unit, newly formed in M.D. No.5 (57). But for the 14 AA Bty the relief from an operational role was only temporary. They did not immediately leave Arvida, and before their departure at the beginning of April, this versatile unit had received and put into action the first eight 40mm Bofors guns assigned to the AA defences of the Arvida area (58).

37. Such, in brief, is the picture of Canada's thinly spread anti-aircraft defences on her East Coast from September 1939 to the early summer of 1942, a period that included the dark and threatening days that followed the collapse of France and saw the rising tempo of the Battle of the Atlantic. For the soldiers manning the guns it was a time of continuous watching and waiting for the attack that might develop at any moment. For the higher authorities there was the question of making such disposition of the meagre equipment as the changing situation demanded, and of planning for the most effective employment of the new armament as soon as it should be released

from the factories. Such planning must include the allocation of the guns according to a balanced scale of defences, the formation of batteries to man the new equipment, and arrangements for training the personnel of these batteries.

III MANNING THE EQUIPMENT

38. INCREASED SCALE OF AA DEFENCES

By the spring of 1942 many revisions had been made in the scale of AA defence requirements for the East Coast of Canada. The list of four centres for which anti-aircraft protection was planned in March 1939 (see para 7 above) had been extended to include thirteen such areas. Experience overseas had taught the need for providing large vulnerable areas (such as existed at Halifax and Sydney) with an adequate gun density. As a result, the total scale of AA armament had risen from 28 heavy and 10 light guns in 1939 to 112 heavy and 82 light in January 1942. The provision of AA defences in Newfoundland and Labrador accounted for approximately 30 per cent of these requirements.

39. The complete scale now showed the following allotments for heavy (3.7") and light (40 mm Bofors) AA guns (59):

	<u>3.7"</u>	<u>40 mm</u>
Halifax	28	16
Sydney	20	8
Saint John NB	8	4
Shelburne	4	4
Gaspe	4	4
Arvida	12 (incl. 4, 3")	16
St. John's-Torbay	16 (incl. 4 US. manned 3")	8
Bell Island	-	2
Botwood	4	4
Lewisporte	4	4
Gander	8	8
Goose Bay	4	4

40. In arriving at these dispositions, the proposals of the Chiefs of Staff Committee were carefully reviewed by the Joint Service Committee, Atlantic Coast, who in some cases were able, in the light of a more intimate knowledge of local conditions to suggest certain adjustments in the projected scale (60). The

relatively large provisions of guns to Halifax and Sydney was warranted by the extent of the vulnerable areas at each of these ports (see paras 23 and 24 above). Such widespread targets presented a considerable problem in obtaining adequate coverage of the complete area of "run-up" to the "L.B.R." (line of bomb release). By contrast, the needs of Saint John NB, with only one vital VP, the dry dock, could be met by a very much smaller allotment of guns than that given the two larger ports.

41. The establishment of naval bases at Gaspé and Shelburne as a result of increased enemy submarine activity in the North Atlantic led to the need for AA defences at these two ports(61). The scale of guns allotted to the Arvida area allowed for protection at the main aluminum plant and the high-power generators at Chute-a-Caron and Isle Maligne. In Newfoundland the St. John's-Torbay area, made up of the adjacent VP's of the Torbay airport and the dry dock, ship's anchorage, and dockage area of St. John's Harbour, was considered to present about the same coverage problem as Sydney. Two Bofors guns were allotted to Bell Island for the defence of the ore-loading facilities against low-flying attack. Botwood and Lewisporte were the sites of large oil-storage installations, the former port having in addition ocean terminals and a sea-plane base to be given protection. Provision of guns for the defence of the important aerodromes at Gander Lake and Northwest River (at Goose Bay, Labrador) completed the ultimate scale of allotments to meet the anti-aircraft requirements of the Atlantic Command. The scale of provision of 3.7 inch guns remained unchanged for more than a year, after which certain reductions and adjustments took place (see para 78 below). The rapid production of 40 mm Bofors during 1942 made it possible to meet requests, on an increasingly extensive scale, for further protection against low flying attacks, and by March 1943 the number of these light guns allotted to the Command had more than doubled (see para 79 below).

AUTHORIZATION OF A A UNITS

42. As early as October 1940 the GOC in C, (Maj Gen. W.H.P. ELKINS) recommended to NDHQ that the training of personnel to man additional coast defence and anti-aircraft armament forecast for delivery should be commenced without delay. He suggested that existing A A and C D batteries in MD's 6 and 7 should recruit to 25% and 15% respectively beyond their present establishment. Such recruits could commence training immediately, as sufficient accommodation was available at the batteries named. (Those were the 1, 14, 7, 6, 8 A A Btys and the 6 AA S/L Tp; the 1, 3 and 16 Coast Bde, and 86 Heavy Bty, RCA). On completion of the training of these personnel, new batteries could be formed by selection, and would be ready for an operational role without delay. The additions of the personnel suggested would permit the formation of a four-gun Coast Defence Battery, one Anti-Aircraft Battery, and the detachment for a one-gun examination battery.

43. But in 1940 the provision of new AA guns seemed a long way off. A reply from the DMO & I, Col. (later Lt-Gen) J.C. Murchie, while approving the proposal to train more Coast Defence Artillery recruits) pointed out that additional anti-aircraft equipment could not be made available from any source for some considerable time, and that it would not therefore be necessary to raise and train additional personnel for new AA units until further orders, (63).

44. No further action to provide or train AA personnel was taken until late in the following year, when forecasts from the factories pointed to a release of some equipment in the near future. On 1 Oct 41 NDHQ authorized the formation of five batteries to man heavy anti-aircraft guns in Atlantic Command. In each case it was a matter of expanding to full war establishment details of NPAM units who had been on manning duties since being called out in August and September, 1939. The units named and the stations to which they allocated were the 1 AA Bty (H), Halifax; 6 AA Bty (H), Sydney; 8 AA Bty (H), Saint JOHN; 7 AA Bty (M) Gander Airport; 14 AA Bty (M), St. JOHN's (64). On 15 Oct formation of a new French-speaking unit, the 17 AA Bty (M) was authorized for Arvida (65). Batteries assigned to 3-inch guns were designated "Type M" (6 offrs, 140 ORs)(66); those

for whom 3.7-inch or 4-inch guns were already available or ultimately expected were established as "Type H" (6 offrs, 152 ORs)(67).

45. By mid-December it became apparent that delivery of Bofors guns from the factory was to commence earlier than had been expected. The first five guns for the Atlantic Coast were due before the end of 1941, with others to follow at the rate of six or seven a month in January, February and March. While the unforeseen condition on the West Coast produced by Japan's entry into the War was to cause some diversion of early AA armament to the Pacific Command, it was hoped that priorities for Atlantic Command would not be seriously delayed. To man the first twenty-four of these Bofors, the formation of three new "Type L" batteries was approved on 18 December, the 4 AA Bty for Halifax, the 5 AA Bty for Gander Airport, and the 12 AA Tp for Arvida (68).

46. Formation of six more Type H batteries, and seven more Type L troops was authorized for Atlantic Command in February, 1942(70), and now the naming of units to man all guns likely to be available in 1942 was practically completed. The following tables indicate the ultimate scale of guns as planned at the end of February 1942, the battery assigned and the number of guns it would man, and, in the case of the heavy batteries, the guns then available.

47.

3.7 INCH GUNS

<u>LOCATION</u>	<u>ULTIMATE SCALE OF 3.7" GUNS</u>	<u>BATTERY ASSIGNED</u>	<u>TYPE</u>	<u>NO OF GUNS TO BE MANNED</u>	<u>GUNS AVAILABLE</u>
HALIFAX	28 guns	1 AA Bty 18 AA Bty 19 AA Bty	(2H) (2H) (2H)	8 guns 8 guns 8 guns	4-3.7", 2-13 pdr. - -
SYDNEY	20 guns	6 AA Bty	(H)	4 guns	2-4"
SAINT JOHN	8 guns	8 AA Bty	(2H)	8 guns	2-13 pdr.
SHELBURNE	4 guns	20 AA Bty	(H)	4 guns	-
GASPE	4 guns	-	-	-	-
ST. JOHN'S-TORBAY	16 guns	14 AA Bty	(H)	4 guns	4-3" manned by U.S.
BOTWOOD	4 guns	-	-	-	-
LEWISPORTE	4 guns	-	-	-	-
GANDER AIRPORT	8 guns*	7 AA Bty (16 AA Bty)	(2H) (2H)	8 guns 8 guns*	4-3" U.S.
GOOSE BAY	4 guns	15AA Bty	(H)	4 guns	-
ARVIDA	12 guns	17AA Bty	(M)	4 guns	4-3"

* An early scale (29 Oct 41) allotted 16 Heavy guns to Gander, (71) and the employment of two batteries, the 7th and the 16th was contemplated. When the requirements were reduced to eight guns, the 16 AA Bty was disbanded (72), and its personnel absorbed by the 7 AA Bty (73).

48.

40 MM BOFORS GUNS

<u>LOCATION</u>	<u>ULTIMATE SCALE OF 40MM GUNS</u>	<u>BATTERY ASSIGNED</u>	<u>TYPE</u>	<u>NO OF GUNS TO BE MANNED</u>
HALIFAX	16 guns	4 AA Bty	(3L)	12 guns
SYDNEY	8 guns	24AA Bty	(2L)	8 guns
SAINT JOHN	4 guns	25AA Bty	(L)	4 guns
SHELBURNE	4 guns	26AA Bty	(L)	4 guns
GASPE	4 guns	-	-	-
BELL ISLAND	2 guns	-	-	-
ST. JOHN'S-TORBAY	8 guns	27AA Bty	(2L)	8 guns
BOTWOOD	4 guns	28AA Bty	(L)	4 guns
LEWISPORTE	4 guns	29AA Bty	(L)	4 guns
GANDER	8 guns	5 AA Bty	(2L)	8 guns
ARVIDA	16 guns	12AA Bty	(4L)	16 guns
GOOSE BAY	4 guns	30AA Bty	(2L)	8 guns

LATER AUTHORIZATIONS

49. By the end of February 1942, the formation of twenty-one anti-aircraft batteries or troops had been authorized for employment in Atlantic Command. The task of providing a sufficient number of trained personnel to fill these units was to tax the ingenuity of the administrative and training staffs at N.D.H.Q. and Atlantic Command Headquarters for months to come. But by April Bofors guns were coming off the assembly lines far more rapidly than had been anticipated, and there were indications that when production of the 3.7-inch equipments began, a similar condition might occur (74). It was not too soon to complete the list of AA units required in the Command. Several months must elapse before newly-authorized batteries would be ready to go into operation with their guns. The CGS made this plain in February, when seeking ministerial approval of the formation of new anti-aircraft units:

"Approximately one month's time is required to produce the necessary cadre personnel, plus an additional six weeks for the training of cadres. Following completion of cadre training, a period of from five to six weeks is required for the concentration, organization, and preliminary unit training. There is, therefore, a period of from four to five months' time from the date of authorization until the unit is ready to move to its operational location where further unit training can proceed".(75).

50. Accordingly April, May and June saw preliminary steps being taken to form enough additional anti-aircraft units to complete the manning of all guns on the ultimate scale as then envisaged (76). For the 3.7-inch guns eight new batteries were authorized, of Type H (4 guns) and Type 2H (8 guns). (In no instance did a battery of heavy guns exceed eight 3.7's, the operational control and administration of ^{two} four-gun troops being considered the maximum allotment to a battery HQ consistent with efficiency.) Provision of additional personnel for the 40mm guns was in general arranged for by the expansion of existing units to Type 2L (8 guns), Type 3L (12 guns) or Type 4L (16 guns), and by forming five new troops or batteries for stations not already provided with a Bofors unit. The allocation of these additional units is shown in the following tables.

ADDITIONAL UNITS - 3.7 INCH GUNS

51.

LOCATION	BATTERY ASSIGNED	TYPE	NO OF GUNS TO BE MANNED
HALIFAX	49 AA Bty	(H)	4 guns
SYDNEY	50 AA Bty	(2H)	8 guns
	51 AA Bty	(2H)	8 guns
GASPE	53 AA Bty	(H)	4 guns
ST. JOHN'S -TORBAY	54 AA Bty	(2H)	8 guns
BOTWOOD	56 AA Bty	(H)	4 guns
LEWISPORTE	57 AA Bty	(H)	4 guns
ARVIDA	41 AA Bty	(2H)	8 guns

52. ADDITIONAL UNITS -40 MM BOFORS GUNS

LOCATION	BATTERY ASSIGNED	TYPE	NO OF GUNS TO BE MANNED
YARMOUTH	45 AA Tp	(L)	4 guns
MONCTON	46 AA Tp	(L)	4 guns
GASPE	52 AA Tp	(L)	4 guns
BELL ISLAND	55 AA Sec		2 guns
ST. JOHN'S-TORBAY	48 AA Bty*	(2L)	8 guns

* The scale of Bofors for the St. John's-Torbay area having been increased to 16 guns, the 48 AA Bty was formed for St. John's in order that the troops at the two places might be administered by separate batteries. The 27 AA Bty (2L) remained at Torbay (77).

53. INCREASE IN SCALE OF 40 MM GUNS

The unexpectedly rapid increase in delivery of Bofors equipments had made it possible for the Chiefs of Staff Committee to raise the scale of allotment of light anti-aircraft guns to the Command, and it was to meet this revision that the expansions referred to above (para 50) were made necessary. The changes gave an additional eight guns to Sydney, four to Saint John, eight to St. John's-Torbay, and provided for four guns at Yarmouth and at Moncton. The Joint Service Committee decided in view of the increased allotment to Sydney to protect the Naval installation at Point Edward and the R.C.A.F. Seaplane Base at North Sydney with two guns each, and to strengthen the protection at the Steel Works to eight guns (78). At Saint John the additional four guns provided were assigned to defend the Ocean Terminals across the

harbour from the Drydock. In Newfoundland the amended scale allowed for separate defences at the Torbay Aerodrome and at the Dry Dock and Ocean Terminals in St. John's (see footnote to para 52 above). And finally the new dispositions provided for four-gun troops to guard the airports at Moncton and Yarmouth against low-flying attack.

54. Although it did not result in the planning of any additional AA Units, one other employment of newly manufactured Bofors guns may be noted here. In March 1942 the General Staff decided to allot light anti-aircraft guns to selected counter-bombardment and other isolated coast defence batteries for protection of the coast artillery guns against low-flying attack. These Bofors, distributed on a scale of two for each coastal battery, were not made available for issue until all other commitments had been met with respect to the supply of guns to authorized AA units. Provision was made for their manning by the addition of a light anti-aircraft section to the establishment of the coast battery concerned (79). Batteries in Atlantic Command to which Bofors were allotted were Devil's and Chibucto at Halifax, Lingan at Sydney, Mispec at Saint John, McNutt at Shelbourne, and Cape Spear at St. John's, Newfoundland (80).

TRAINING THE PERSONNEL

55. From October 1941 to June 1942 the number of light and heavy anti-aircraft batteries authorized for Eastern Canada and Newfoundland rose from five to thirty-seven (81). Progressive organization of the new units and the provision of trained personnel followed a regular plan, which was limited in the speed of its fulfillment only by the difficulty experienced in obtaining a sufficiently large flow of recruits to meet the manpower requirements. For each new unit a cadre was selected to undergo a period of six weeks' training at the A.23 Coast Defence and Anti-Aircraft Artillery Training Centre in Halifax. On the completion of its training at A-23 the cadre would move to the Anti-Aircraft ^{Unit} Staging Camp at Debert, which was organized in

March 1942 (82) to accommodate three Type H batteries and four Type L troops, or a total of some 800 all ranks. Here concentration of the new unit would take place, the battery being brought up to strength by the posting of recruits from basic or artillery training centres who had received a month's further special training at the C & AAATC. Then, if its new armament were available, or in sight, the newly formed unit moved to its operational site.

56. The training cadre for a 3.7" battery of four guns consisted of 4 officers and 15 other ranks; and for a 40mm four-gun troop, 2 officers and 4 ORs (83). In general the officers and men for these cadres were drawn from existing anti-aircraft units that had been pursuing a combined operational and training role during 1940 and 1941. A large number of the batteries formed in Atlantic Command during the spring and early summer of 1942 were in each case built around a nucleus withdrawn from the 1, 6, 7 and 8 AA Btys, who had received their early training on the old QF 13-pdr 9-cwt at Lawlor's Island.

CADRE TRAINING

57. Cadre training started on 19 Jan 42 for the Bofors batteries formed for Halifax, Gander Lake and Arvida (the 4th, 5th and the 12th respectively)(84). Delay in the expected release of 3.7" equipments caused deferment for the time being of cadre training for the heavy batteries. Because the first eight Bofors guns manufactured in Canada were diverted to the Pacific Coast, to meet the emergency that existed there (85), it was not until late in February that Halifax received its initial issue of two 40mm guns (86). The course being conducted at the Citadel for the first three cadres was therefore extended to 12 March, in order that some training might be carried out on actual equipment. Up to the arrival of the guns, pictures brought from England

and dummy wooden models served the instructors in the Light Anti-Aircraft Wing (87). In Mid-March, their cadre training completed, the units commenced concentration of personnel. The 12 AA Bty went to Staging Camp at Debert, to receive in the next ten weeks a full establishment of Officers and men before moving to its operational station at Arvida (88). The 4 AA Bty remained in Halifax, where the unit rapidly grew to full strength, placing in action as they came from the factory the Bofors assigned to the defence of that city. By the end of September the battery, expanded to a Type 4L unit, was manning its full quota of sixteen guns (89). The cadre of the 5 AA Bty was despatched without delay to Newfoundland where, absorbing the personnel of the disbanded 16 AA (MG) Tp (90), the unit by the end of April was manning the first six 40mm guns released for Gander Airport (91).

58. Meanwhile at A-23 instruction proceeded without delay. When the second six-weeks' course finished on 30 April, cadres had been trained for the thirteen heavy and light batteries whose formation was authorized in February (see para 46 above)(92). Seven of these immediately proceeded to Debert for concentration of their respective batteries. It was imperative that the guns awaiting these units should be put into action with the least possible delay. To meet the strength requirements of these batteries, and of six units in a similar process of formation in Pacific Command, the Artillery Training Centres across Canada were combed for trained artillery personnel. As a result nearly 1000 Active and "R" personnel went to Debert from Petawawa and Halifax (A.23), while at the same time nearly 500 from these centres and from Shilo and Brandon were assigned to AA units being formed at the West Coast (93). By the middle of June, the new units now at full strength, had moved out from Debert to their operational stations (94). Personnel of the remaining cadres, on a

lower priority because the guns for their batteries were not yet scheduled for delivery, were temporarily attached to existing AA batteries for further training. In the majority of cases several months were to elapse before formation of these batteries reached completion (95).

THE SHORTAGE OF PERSONNEL

59. The training of cadres continued at A-23 throughout the summer of 1942 (96), and by the end of August the cadres for the last of the batteries then authorized (the 55,56 and 57 AA Btys), had completed their six-weeks' course. But progress in bringing the new units to strength had lagged far behind. It was no longer a matter of trained cadres waiting for their guns to become available before battery concentration could begin. The flow of AA armament from the factories was steadily increasing. By the autumn of 1942 40mm and 3.7" guns were being received faster than personnel were available to man them (97). The obstacle to progress now was the lack of trained recruits. As early as July a report from Atlantic Command (98) stated that:

"The greatest problem in the implementation of the AA programme is the shortage of personnel which are to be provided by NDHQ. Requirements of trained personnel for the 15 Aug are approximately 1,800. Only 400 have arrived at A 23 Training Centre, 25% of which are French-speaking and cannot cover off part of the above requirements."

A further report at the end of September showed immediate shortages in the Command of 68 officers and 1539 other ranks if all authorized AA units were to be filled to War Establishments (99).

60. Two main contributing causes brought about the acute manpower shortage that was now presenting so pressing a problem. One was the sudden demand for personnel to fill

in less than a year some sixty static anti-aircraft batteries on both coasts (100), requirements estimated in May 1942 at more than 6000 (101). The other factor, brought about largely by Canada's West Coast defence needs in the light of the War with Japan, was the drain upon the training centres of recruits to bring to strength the units mobilized to complete the 6 Div, to man the 7 Div and to form three Bde Gps of the 8 Div (102). These calls upon Canada's manpower resources were in addition to the regular requirements for overseas reinforcements. It was inevitable that basic and advanced training centres should fail to meet all these demands. In the emergency many newly-formed infantry units themselves became temporary training centres as they accepted drafts of NRMA raw recruits direct from depots. The anti-aircraft batteries were given a higher priority on the output of the CA(B)TCs, and, on the Atlantic Coast, at least, personnel entering A 23 had already completed at least a month of basic training.

61. Accommodation at A23 was increased to handle the specialized training of all the recruits that the Basic Training Centres across the Country could supply. In May the Heavy AA Wing moved from Wright's Brook, (Navy Island Cove) on Bedford Basin, to a canvas camp at Aldershot. The move made it possible to increase the number in training from 100 to 500. During the summer the Wing was turning out an average of 400 trained H A A gunners a month, and by the end of the year the number trained had reached 2600. On the move of the Heavy Wing to rejoin the rest of A.23 at its permanent location at Eastern Passage in November, accommodation for personnel in training dropped to 300, but by the end of the year 2600 had received a month's special-to-arm training, and in the early months of 1943 this number

this number was increased by a further 1700 (102). From the Light A A Wing a similar output was maintained. In search of more accommodation the wing moved in May from the Citadel to Conley Street (Halifax Airport), where three training batteries functioned throughout the summer of 1942.

62. The race to man the guns went on for a year and a half. By the end of October 1942 there were 46 3.7" guns in action in the Command, and double that number of Bofors. But equipment of both types was lying in Ordnance or standing on site awaiting personnel to put them into operation (104). In January the picture had improved somewhat, with 71 heavy and 96 light equipments in action (105), but it was not until the late summer of 1943 that supply from the training centre caught up with production from the factory. By mid-September, after certain modifications in scales of AA defences had helped to ease the difficult man-power situation, all A A guns on the ultimate scale in Atlantic Command were being manned in action by trained personnel, - 108 3.7 inch, and 134 Bofors (106).

63. FORMATION OF A A REGTS

The need for grouping the newly formed units for administrative and operational control early became apparent. A CGS submission to the Minister in Mar 1942, seeking authority to form eight Headquarters of an AA Regiment made the following case:

" The Headquarters of both the ATLANTIC and PACIFIC Commands are finding it increasingly difficult, as additional units are authorized, to deal directly with the vast amount of detail involved in the initial development of their AA Defences and the formation with subsequent administrative and operational control of the numerous AA units. As a result, the GO's C-in-C, ATLANTIC and PACIFIC Commands, have recommended, that the AA Defences of their respective Command be grouped, where feasible, into regimental areas, and that decentralized control be made possible by the provision of a Headquarters of an AA Regiment for each regimental area." (107).

64. Of the eight AA Regiments whose formation in Canada was approved in June 1942 six were authorized for Atlantic Command (108). Organization of regimental headquarters was completed by the end of August (109). HQ 21 AA Regt administered the air defences of the Halifax area. HQ 22 AA Regt was responsible for the AA batteries at Saint John N.B. and outlying AA Units at Moncton and Gaspé. HQ 23 AA Regt was established at Sydney, and HQ 24 AA Regt at Arvida. In Newfoundland, HQ 25 AA Regt at St. John's administered AA batteries in the St. John's-Torbay area and at Bell Island while the 26 AA Regt was formed for Gander, Botwood and Lewisporte (110).

65. This grouping left certain batteries outside the AA Regiments because of their comparatively isolated locations. Units at Yarmouth, Shelburne and Goose Bay remained as independent batteries, under operational control of the local defence commander(111). A suggestion put forward by the GOC-in-C Atlantic Command to consider batteries at these points as details thrown off from the AA Regiments at Halifax (for Yarmouth and Shelburne) and Saint John (for Goose Bay) indicated the advantages that would be thus obtained in standardization of training, technical advice, and regimental control of officers (112). Distances concerned however, were regarded as being too great for effective organization along such lines, and the batteries remained non-regimented.

RELATION OF AA REGTS TO OTHER FORMATIONS

66. The introduction of AA Regimental grouping within the Command made it necessary to define the AA Chain of Command with reference to control and administration within the Fortresses and Defended Ports and Areas. A directive addressed to the HQ of the various Defences in the Command specified that -

(1) The Fortress or Defended Port or Area Commander is responsible for general defensive measures in his area

including AA.

(ii) Actual operational control (fire) is from the G.O.R., which is a unit under command of the H.Q. A.A. Regt.

(iii) Administration, when the Regt or non-Regimental Bty is localised in one area, is along normal lines as in the case of a Coast Regt. If on the other hand a portion of the Regt is localized in a separate Defended Port or Area, there must be a division of control and administration between the AA Regt and the Defended Port or Area concerned. In this regard maintenance, equipment, discipline, pay, leave and furlough (except officers) must function under the Bty or Tp Comd as an entity in the normal chain of the Defended Port or Area. Purely regimental questions of promotion, establishment, technical matters, etc. will come under regimental control. As regards training the Regtl. Comd is really the technical advisor to the Fortress, etc and similarly the Comd of detached portions of the Regt becomes a technical advisor to the respective Defended Port or Area Commander (113). In general the division of control between the Regimental Commander and the Commander of the Fortress or Defended Area followed these lines. The many responsibilities of the Commanding Officer of a Defended Port or Area were generally numerous and onerous enough for him to be quite willing to let the AA specialist run his own show (114).

A A GUN OPERATION ROOMS

67. A natural accompaniment to the grouping of anti-aircraft batteries into regiments was the establishment of an AA Gun Operation Room to function with each regimental HQ. No. 1 AA GOR, the first to be formed in Canada, was authorized for the 21 AA Regt in July 1942 (115). Previous to formation of the regiment, a GOR had been organized at

R A Park, which was the Battle H Q of Halifax's AA Defences. Switchboards were installed with circuits to all AA positions, to R.C.A.F. Headquarters, and to the Naval Docks. Circuits at the docks were terminated so that ships-of-war lying alongside the piers could tie in with the AA defences of the city (see para 29 above). As information regarding the organization of GOR's became available from Great Britain, the system was organized along recognized British lines. For more than a year, before a Canadian establishment was created for a GOR, operating personnel were detailed from the AA batteries in the Halifax area (116).

68. From No.1 A A Gun Operations Room ^S went trained personnel to assist in manning similar units as they were formed in the Command. Nos. 3, 4 and 5 AA GOR's for Arvida (24 AA Regt), Gander (26 AA Regt) and St. John's-Torbay (25 AA Regt) respectively were authorized in August 1942 (117). The establishment provided in each case (5 offrs and 36 ORs) was based on the British WE for a Class "B" GOR controlling a maximum of seven gun sites. Since, with the exception of the 21 AA Regt at Halifax, none of the AA Regiments to whom these GOR's were allotted boasted that number of sites, mobilization within the limits of the establishment was kept to the minimum number of personnel for actual operational requirements (118). GOR's for the 23 AA Regt at Sydney (No.7 AA GOR) and for the 22 AA regt at Saint John (No.8 AA GOR) were authorized in February 1943 (119). At Goose Bay, where no regimental organization existed, No.10 AA GOR was formed in July (120) replacing a temporary control room that had been out into operation when the first heavy battery went into action there in August 1942 (121).

69. Functioning in close liaison with RCAF Operational Headquarters in each locality, the GOR was the nerve centre of all anti-aircraft defences in the area. Into the GOR came

"early warning" plots from RCAF Group and Sector Headquarters, supplemented by all information regarding the movement of enemy planes in the vicinity forwarded from the RCN, from Fortress Intelligence, from the Coast Artillery Fire Commander, and from neighbouring GORs (122). As the hostile craft came closer the Heavy AA sites in the area warned from the GOR, would begin sending in ZPI and APF plots (see para 133 below). All information as it was received would be displayed on large charts and location maps in the GOR. The Gun Duty Officer was then responsible for the selection and passing of pertinent information to the appropriate AA gun sites, and to the other services (123). In the case of an attack it was from the GOR that the AA Defence Commander (usually the O.C. AA Regt), or his representative, would fight his batteries.

A A SEARCHLIGHT BATTERIES

70. Of the four areas in Atlantic Command for which anti-aircraft searchlight defences were to be provided (see para 21 above) only one, Halifax, was ultimately provided with a permanent searchlight battery. Late in 1941 General Staff planning with respect to the use of lights in A A defences had undergone further revision, and on 1 Oct 41 the formation of four AA searchlight batteries was authorized (124). These were the 1 AA S/L Bty, for Halifax; 2 AA S/L Bty, for Gander Airport; 3 AA S/L Bty, for Sydney; and 4 AA S/L Bty, for Saint John. Already new lights (60 inch, 800,000,000 CP) and diesel generating sets were available (125), on a scale of twelve per battery, and only the problems of provision of trained personnel and accommodation at the operational sites remained to be solved. But policy changed again, and a decision not to use lights at Gander, Sydney and Saint John resulted in the indefinite deferment of mobilization of the 2, 3 and 4 AA S/L Btys (126).

The postponement became permanent, and in May 1943 the three units were disbanded without having been formed (127).

1 AA S/L BTY

71. From early in the War a small number of searchlights for anti-aircraft defence had been manned at Halifax. The 1 AA Light Tp, RCA and 6 AA Light Tp, RCA, with detachments of the 4 AA Bty (later replaced by 14 AA Bty) operated three old (1918) and two modern (1939) searchlights during 1940 and 1941 (128). Personnel of these two troops were absorbed in the formation of the 1 AA S/L Bty in November 1942. The new unit put into action and manned a wide ring of twelve modern lights in the sparsely inhabited area around Halifax Harbour and Bedford Basin. Positions were well camouflaged, and a number of dummy searchlights built of canvas, and fitted with looking-glass to reflect the sun's rays, faced south and east to deceive approaching enemy aircraft.

72. The functions of the searchlights were three-fold, (a) to dazzle low-flying enemy planes, (b) to identify hostile or friendly planes, and (c) to be used as a beacon to guide lost aircraft (129). (Successful employment of lights with AA guns was not considered feasible. See para 20 above). There were other ways in which equipment and personnel of the battery might be employed. An anti-aircraft searchlight might be so sited on the shore that it could perform an auxiliary role as a fighting light for the guns of a coast artillery unit (130). Because each searchlight position in the Halifax area was connected by telephone to Fortress Headquarters, its fifteen or twenty-man detachment was regarded also as an infantry reserve outpost against the threat of an overland attack by enemy raiding parties (131). For another year and a half the 1 AA S/L Bty manned its twelve lights at Halifax. Then, in June 1944, the reduced scale of attack brought about by the favourable tide of the War allowed the withdrawal of the unit from an operational role. The lights were taken out of action (131), and in July the battery

reduced in strength, moved to Debert, to undertake a new role of searchlight co-operation with No.7 O T U, RCAF (see para 74 below)

5 SPECIAL MOBILE AA S/L TP

73. In July 1942 the 5 Special Mobile AA S/L Troop was formed on an establishment of 3 officers and 57 ORs, with six lights (132) for the purpose of providing searchlight co-operation at RCAF training schools in Atlantic Command (133). The troop carried out organization and preliminary training at Fort Ives Point, Halifax, and was brought to strength by personnel from the disbanded 10 Searchlight (CD) Bty RCA (134) and 16 AA (MG) Bty RCA (135), and by men recruited from No 62 CA(B)TC at Charlottetown (136). In October the unit moved to Debert to commence experiments in co-operation with No.31 O.T.U (137). Training with the RAF was considered by both parties to be mutually valuable. During the next year the mobile troop rotated between Debert, Pennfield Ridge, NB, and Greenwood NS (138), spending one or two months with the RAF training units at these stations.

74. In August 1943 the troop took up permanent residence at Greenwood, to provide co-operation in searchlight training for the new Mosquito courses at No.8 OTU (139). The training and experience of the searchlight operators produced good results. "We succeeded in picking up the invading aircraft, which were diving in without navigation lights, every time they made the attack. This effort brought very complimentary remarks from the fliers who have both done a lot of operational flying overseas We are badly needed because these pilots in training will have a lot of anti-searchlight work to do over Germany." (140) The experiment of searchlight co-operation between Army and Air Force had proved successful. In July 1944 two of the troop's six detachments went to Debert to merge with part of the 1 AA S/L Bty from Halifax in forming a mobile troop for carrying on similar searchlight training with No. 7 O.T.U., RCAF (141) (see para 72 above).

75. The anti-aircraft searchlight battery designated for Gander Airport did not materialize (see para 70 above). The only AA lights operated by Canadians in Newfoundland were five belonging to the U.S. Army. The only operation of AA lights by Canadians in Newfoundland occurred when the Searchlight Troop of the 16 AA (MG) Bty took over the manning of five of the U.S. Army's lights at St. John's. From June 1941, when the troop arrived from Halifax (142), until October 1942, when all equipment was returned to the Americans (143), the Canadian unit, with Troop HQ at Mundy's Pond, St. John's, trained with and operated the searchlights that formed part of the city's AA defences, and for a short part of that time, placed a light in action at Bell Island (144). When the 421 Coast Arty Bn (US) took over the sites in October, disbandment of the 16 AA (MG) Bty had been in process for several months. The machine gun troops at Gander and Torbay Airports having returned their guns to the US Army in May and June had already been broken up and their personnel posted to other AA units (145). The disposal of the searchlight personnel to coast and AA artillery units at Halifax and Saint John completed the existence of the battery (146).

IV THE COMPLETION OF EXPANSION

CHANGES IN SCALE OF AA DEFENCES

76. Before the provision of anti-aircraft protection in Atlantic Command had reached the peak further changes in the disposition of defences were to be made. In October 1942, following a review of all L.A.A. defences in Atlantic Command the Joint Services Committee (147), basing its recommendations upon a Joint Army Air Appreciation, recommended certain increases in the allotment of Bofors for the defence of Aerodromes.

The Committee pointed out that with the possible exception of Halifax and Sydney, only a minimum of gun density in all-round defences was provided for VPs by the existing allotment. With regard to aerodromes, additional protection was needed to give perimeter coverage for runway areas, as well as for the protection of control rooms and hangars. There were several aerodromes in the Command with no LAA allotment and it was recommended that those which had an operational role and which were subject to threat of low-flying bombing attack should be given protection. The Committee proposed the following increases (148).

<u>Aerodromes Presently Defended</u>	<u>Present Allotment of Bofors</u>	<u>Additional Requirements</u>
Gander	8 guns	8 guns
Halifax	4 guns	6 guns
Sydney	4 guns	4 guns
Yarmouth	4 guns	4 guns
Torbay	8 guns	Nil
Moncton	4 guns	Nil
Goose Bay	8 guns	4 guns
<u>Additional Aerodromes Recommended for Defence</u>		
Saint John	Nil	4 guns
Maitland	Nil	4 guns
Pennfield Ridge	Nil	4 guns
Bagotville	Nil	4 guns
Debert	Nil	4 guns
	TOTAL	46 guns

77. Tentative approval of these proposals of the Joint Services Committee was given by NDHQ, but before any actual increases were made in provision of guns, the picture changed again as the whole question of AA dispositions in the Command came once more under review. Acting on instructions from the Chiefs of Staff Committee (149), and

basing its recommendations on an AOC EAC re-assessment of the LAA defence needs of aerodromes, and a technical review by the GOC-in-C of all AA dispositions in the Command, the Joint Services Committee submitted a plan for re-distributing AA light and heavy equipments on the most effective basis (150). With certain reservations the plan was concurred in by the Chiefs of Staff Committee (151).

78. In the matter of 3.7" guns the new schedule increased the concentrations at the important harbourage facilities of St. John's, at the Goose Bay and Gander Aerodromes, and at the aluminum plant and power installations at Arvida. Equipments to meet these increases were provided for by the withdrawal of heavy AA defence from Gaspé, Shelburne, Botwood and Lewisporte (See para 81 below). The Joint Services Committee in putting forward recommendations for LAA dispositions modified its submission of the previous October with regard to increased AA defences of aerodromes, recommended withdrawal of Bofors from Coast Artillery battalions, and proposed increases generally of two guns each at the majority of the VPs in Halifax and Saint John. Shipshaw development at Arvida, and Naval installations at Bay Bulls, Nfld. were also recommended for LAA protection. The Chiefs of Staff, considering that reduced anticipated plans and scales of attack did not justify greatly increased coverage by AA guns, in general maintained the status quo of allotments, except for allowing for additional protection at Gander and Goose Bay aerodromes, and sanctioning the new AA defences for Shipshaw and Bay Bulls.

79. The revised ultimate scale for Atlantic Command and the one that marked the peak in the allotment of AA guns, was now as follows:

	<u>3.7"</u>	<u>40 m.m.</u>
Halifax	28 guns	24 guns
Sydney	20 guns	16 guns
Shelburne	-	4 guns
Yarmouth	-	4 guns
Saint John	8 guns	12 guns
Gaspe	-	4 guns
Arvida	16 guns	16 guns
Shipsaw	-	6 guns
St. John's (Excl USA)	12 guns	8 guns
Torbay	-	8 guns
Bay Bulls	-	6 guns
Gander Lake	12 guns	16 guns
Botwood	-	8 guns
Lewisporte	-	6 guns
Goose Bay	12 guns	12 guns
10 Lt. AA Regt RCA	-	36 guns
	<hr/>	<hr/>
TOTAL	108 guns	186 guns

80. DISCONTINUANCE OF HEAVY AA BTYS AT ISOLATED VPs

An important change in the policy of allotment of heavy AA guns in Canada came in January, 1943, when the Chiefs of Staff Committee, acting on British experience in active theatres of operations, reached the conclusion "that better value would be obtained in the AA defence of Canada generally by withdrawing the heavy AA defence against high level bombing from areas of secondary importance where only one 3.7" battery has been located, and using the guns withdrawn to strengthen the defence of larger areas whose present allotment is only eight or twelve guns". The factors whose consideration led to this decision were as follows:

- (a) "High-level bombing is usually carried out only against big targets.
- (b) Only sporadic bombing raids are presently envisaged in this country.

- (c) It may be assumed that only a limited load of bombs can be carried for purposes of a raid on this country.
- (d) Spot bombing is not customarily carried out from high altitudes.
- (e) 3.7" AA guns cannot effectively engage aircraft carrying out low level or dive bombing attacks.
- (f) Nothing less than an eight gun density (equal to sixteen guns at least) is likely to produce lethal results against high level bombing. Four guns have not even deterrent value against a determined pilot".(152).

81. In Atlantic Command this new decision meant the withdrawal of the heavy batteries guarding or allocated to the installations at Gaspe, Shelburne, Botwood and Lewisporte. With the shortage of manpower in the Command it was not difficult to find a place for the personnel affected. The French-speaking 53 AA Bty (Type H) remained for the balance of the winter at Gaspe, engaging in intensive training, moving with its guns in June to Arvida, to become absorbed in the 17 AA Bty. The 20 AA Bty, designated for Shelburne, remained in training at Halifax, and in June 1943 relieved the 1 AA Bty on its movement to Goose Bay. The 56 and 57 AA Btys, for Botwood and Lewisporte respectively, still on a cadre basis at Halifax and Bedford, were disbanded, and their personnel absorbed into other units (153). The 3.7 inch guns for the disbanded units remained in ordnance at Halifax and St. John's for re allocation in accordance with the revised scale of defences (see para 79 above)(154).

82.

THE PEAK IS REACHED

By the late summer of 1943 the number of anti-aircraft sites manned in Atlantic Command had reached the maximum, as all guns allotted in the ultimate scale of defences were reported in operation (155). Not all AA batteries were fully trained, nor was all the necessary equipment for fire control available. (See para 134 below). But the terrific race against time to organize and equip, and accommodate the new units was over, and under their regimental headquarters the batteries were rapidly becoming efficient in their operational role. As noted more than

once above the dispositions frequently changed. In the paragraphs that follow a glance at each regimental area will indicate some of these changes and outline the general progress that was achieved in the Command before reductions and disbandments marked the policy of retrenchment in the face of falling scales of enemy attack.

83. 21 AA REGT RCA HALIFAX

The original composition of the 21 AA Regt RCA, formed in the Halifax area with Lt-Col E. D. Walsh, ED in command, was as follows:

HQ 21 AA Regt
1 AA Bty (2H)
18 AA Bty (2H)
19 AA Bty (2H)
49 AA Bty (H)
4 AA Bty (4L)
1 AA S/L Bty 12 lights
No.1 AA G O R

It will be noted that the allotment of heavy batteries provided for 28 3.7inch guns, a scale that did not later change. Three reliefs however took place in the manning of the seven heavy sites. In June 1943, when the scale of 3.7" guns for Goose Bay was being increased by eight guns, it had been intended that the 20 AA Bty, originally slated for Shelburne, should move to the Northern Station (see paras 78 and 81 above). Because the battery was not considered ready for despatch to so isolated an area as Goose Bay, the more fully trained 1 AA Bty was sent to Labrador (156), and the 20 AA Bty took over its sites on the west side of Halifax Harbour (157). A year later the two batteries exchanged places to assume the roles originally allotted them (158).

84. The third change-over of heavy batteries took place between the 49 AA Bty and the much-travelled 14 AA Bty. The latter unit, formed at Halifax in August 1940 to relieve the 4 AA Bty (P.F.) (see para 27 above); served for nine months at Arvida, before going to St. John's. In March 1944 it returned to Halifax to exchange duties with the 49 Bty, which had been manning four 3.7" guns on McNab's Island in the entrance to Halifax Harbour (159). The two remaining 3.7-inch batteries saw little change of scene. The 19 AA Bty was formed in October 1942, and manned sites on either side of Bedford Basin, without further moves (160). The 18 AA Bty, was organized at Halifax in March 1942, and after spending two months at Arvida, where it manned four guns for the 41 AA Bty until that unit was sufficiently trained to take them over (161) returned to put into action the two heavy AA sites on the West side of Halifax Harbour (162).

85. Until the summer of 1943 all Bofors protection to Halifax was given by the 4 AA Bty (Type 4L), which by September 1942 was manning sixteen 40 mm guns at the various VPs on both sides of the Harbour (see para 57 above). In July 1943, the 46 AA Tp having spent ten months in defensive operations at Moncton Airport, took over equipment and personnel of approximately two troops of the 14 AA Bty, and, expanded now to the 46 AA Bty (Type 3L), assumed responsibility for the manning of all Bofors on the Halifax side of the Harbour (163). The 4 AA Bty, converted to Type 3L, remained on the Dartmouth side to protect the RCAF airport and Seaplane Base, and the oil refineries at Imperoyal (164). A redesignation of certain static AA batteries that had similarly numbered counterparts among the units of mobile LAA regiments changed the number of the 46 AA Bty in September 1943 to the 146 AA Bty RCA (165). The end of 1944 found the 21 AA Regt,

under the command of Lt Col G L Kent (who had succeeded Lt Col Walsh in August 1944, upon the latter's taking over the 27 AA Regt at Victoria), with its component batteries manning 28 3.7" guns and 24 Bofors, -- the total ultimate scale for Halifax.

22 AA REGT RCA — SAINT JOHN

86. When the 22 AA Regt was formed in September 1942, with headquarters at Saint John, batteries at Moncton NB and Gaspé PQ were included in the organization. At the end of 1942 the regiment comprised the following units:

HQ 22 AA Regt		Saint John
8 AA Bty	(2H)	Saint John
25 AA Bty	(2L)	Saint John
46 AA Tp	(L)	Moncton
53 AA Bty	(H)	Gaspé
52 AA Tp	(L)	Gaspé
No. 8 AA GOR (auth. Feb 43)		Saint John

The inclusion of the outlying batteries, particularly the two at Gaspé, in MD No 5, was dictated by the exigencies of geographical grouping, but it meant that the regimental commander, Lt Col G L Kent (8 Sep 42 to 17 Aug 44) had an unusually wide range of territory to cover (166). This area was gradually reduced, as one by one the detached batteries left the regiment either by transfer or by disbandment. First to go was the 53 AA Bty at Gaspé. Under the policy of removing heavy AA defences from isolated areas this battery took its guns out of action in the spring of 1943, moving to Arvida in June (see para 81 above). At the same time, the withdrawal of AA protection from Moncton sent the 46 AA Tp to the 21 AA Regt in Halifax (see para 85 above). The remaining outlying unit of the 22 AA Regt, the 52 AA Tp, continued to man four Bofors at Gaspé until November 1943, when, on the removal of all AA protection from that port, as part of the reduction in the scale of defences (167) it became one of the units of the re-organized French-speaking 26 AA Regt for Newfoundland (see para 118 below).

87. Meanwhile, at Saint John, the 8 AA Bty, having served its apprenticeship through the first three years of war on the old 13 pairs later supplemented by .5 in AA machine guns, by the end of 1942 had its eight 3.7's in action at two troop sites north-east and south-west of Saint John Harbour (168), positions which it continued to man until disbandment. The policy of relieving batteries in Newfoundland and Labrador by units in Nova Scotia and New Brunswick brought about an exchange in duties between the 25 AA Bty (Type 2L), giving Bofors protection to VPs at Saint John, and the 30 AA Bty (Type 2L) from Goose Bay. The relief took place in July 1943, and both batteries were expanded to Type 3L to look after the increased scale of guns at the two stations (169). Of the twelve Bofors sites at Saint John, eight were kept fully manned, the remaining four ready for manning, with their guns in the local drill hall. Under this arrangement the three troops in the battery followed a rotation of two at operational sites, and one always in training (170). A year later the two batteries returned to their original stations (171), a troop from the 4 AA Bty at Halifax being supplied on loan to the 22 AA Regt to cover the relief of the 30 AA Bty. The Saint John battery, now redesignated to the 125 AA Bty (Type 3L) (see para 85 above) (165), was almost immediately broken up as the regiment disbanded in August 1944 (172). Reduced to four-gun strength (173), and guarding the Dry Dock against low-flying attack, the 125 AA Tp (Type L) became an independent unit, -the sole survivors of the 22 AA Regt. The 3.7" guns of the disbanded 8 AA Bty were turned over to Reserve Army units in Saint John for training purposes, and the regimental commander, Lt-Col Kent, went to Halifax to assume command of the 21 AA Regt.

88. Until late in 1942 AA defences in the Sydney area were limited to a heavy four-gun site at Westmount, manned by the 6 AA Bty (Type H) -- who had substituted four 3.7" guns for the two 4" Naval AA guns in July 1942 (see para 30 above) -- and the 24 AA Bty (Type 4L), which by the end of the year had sixteen Bofors in action at the Steel Plant, the Airport, and the Seaplane and Naval Bases (see para 53 above). The 23 AA Regt was formed on 16 Aug 42 under the command of Lt-Col R F Capel, ED, with the following composition:

HQ 23 AA Regt
 6 AA Bty (H)
 50 AA Bty (2H)
 51 AA Bty (2H)
 24 AA Bty (4L)
 No 7 AA G O R (auth Feb 43).

89. Heavy AA defences at Sydney expanded rapidly as the 50 AA Bty came in from Aldershot in September 1943, to be followed by the 51 AA Bty from Bedford in January. The five heavy AA troops now available formed a circle of defence sites about the vulnerable areas. To the eastward the two sites of the 50 AA Bty were in operation early in January 1943, on the south side the 6 AA Bty was manning its single site at Westmount, and east of the Harbour the 51 AA Bty had put its two troops into action above and below North Sydney by the beginning of March (174).

90. A change-over between the 6 AA Bty and the 15 AA Bty at Goose Bay occurred in June 1943, the two batteries returning to their home sites a year later (175). Reduction of the 24 AA Bty from Type 4L to Type 3L took place at the end of 1943, when "D" Troop, which had been manning the four Bofors at Point Edward and North Sydney (see para 53 above) took the guns out of action (176). In March, Battery HQ and "A" and "B" troops, which had been manning the guns at the

Steel Works, went to St John's, on exchange relief with the 27 AA Bty (Type 2L) from the Newfoundland capital (177). The remaining troop of the 24 AA Bty, "C" Troop, stayed in Sydney, attached to the 27 AA Bty until July 1944, when it moved to Goose Bay to join the 30 AA Bty (178).

91. The 23 AA Regt was not long in following the 22 AA Regt at Saint John into disbandment. The anti-aircraft operational role at Sydney ceased on 24 Nov 44, when all guns were taken out of action (179). Reduction to nil strength of the three heavy batteries, the 27 AA Bty, and No 7 AA GOR was effected by 31 December (180). For the last nine months the Regiment had been under the command of Lt-Col I B MacCallum, who had come from commanding the 26 AA Regt, replacing Lt-Col Capel, who went to Newfoundland to take over the 25 AA Regt (181).

24 AA REGT RCA — ARVIDA

92. The status of the Officer Commanding 24 AA Regt at Arvida differed from that of the commanders of the other anti-aircraft regiments in Atlantic Command. Whereas at other stations the AA commander, like the O C Coast Regiment, acted as technical advisor to the local fortress or defended area commander, to whom he was responsible for the administration of all AA units, the absence of any large scale defences other than anti-aircraft at Arvida resulted in regimental headquarters assuming the functions and operational control normally exercised by an area headquarters. As a result the limited war establishment of a HQ AA Regt (7 offrs and 42 ORs) (182) had to be unofficially supplemented almost one hundred percent by temporary attachments from units within the regiment, in order to carry on efficient administration of all troops in the Arvida area (183).

93. HQ 24 AA Regt RCA and Arvida Area Defences became officially established on 6 Jun 42 (184). The slate of batteries for the new regiment was as follows:

HQ 24 AA Regt
No 3 AA G O R
17 AA Bty (M)
41 AA Bty (2H)
12 AA Bty (4L)

Lt-Col J R Samson came from the command of Gaspé Defences in July to take over the regiment (185). At the time of his arrival the 17 AA Bty was manning the four 3" QF guns at Isle Maligne and Arvida (see paras 35 and 36 above); the 12 AA Bty having arrived from Debert on 6 June to relieve the 70 LAA Bty (186), had ten of its sixteen Bofors in action at Isle Maligne and Chute-a-Caron (187); while the 18 AA Bty, temporarily substituting for the 41 AA Bty which was still in training, had put into action near the main plant of the Aluminum Company of Canada the first four 3.7" guns received in the area (188). A temporary GOR had been in operation since 15 May 42 (189). The arrival of the 41 AA Bty on 4 Aug 42 and the return of the 18 AA Bty to Halifax completed the composition of the regiment. By mid-October Arvida was the first defended area in Atlantic Command whose existing scale of AA defences had been fully met, as the 17 AA Bty manned four 3 inch guns, the 41 AA Bty eight 3.7's, and the 12 AA Bty sixteen Bofors (190). When the allotment of heavy AA guns for Arvida was increased to sixteen (see paras 78 and 79 above), the new scale was met by absorption into the 17 AA Bty of the 53 AA Bty with its four guns from Gaspé (191).

94. On 1 Jul 43, the tactical command of Arvida Defended Area, which up to that time had been exercised by the GOC-in-C, Atlantic Command, reverted to the DOC MD No 5 (192). As a result the composition of the 24 AA Regt was altered to include all active anti-aircraft units in MD No 5 (193). The change brought the 52 AA Tp at Gaspé, formerly part of the 22 AA Regt, and the 60 AA Bty and the 61 AA Tp, in an operational role in defence of Quebec, under command of HQ 24 AA Regt for administration and the supervision of training. The 24 AA Regt now comprised:

HQ	24	AA	Regt	Arvida	Area
No.	3	AA	GOR	Arvida	Area
	17	AA	Bty (2H)	Arvida	Area
	41	AA	Bty (2H)	Arvida	Area
	12	AA	Bty (3L)	Arvida	Area
	63	AA	Bty (2LS)	Arvida	Area
	52	AA	Tp (L)	Gaspe	
	60	AA	Bty (2H)	Levis	
	61	AA	Tp (L)	Levis	

95. There followed a period of transition and re-organization. The 63 AA Bty, that had been formed for added Bofors protection for Shipshaw, by conversion of the 8 LAA Bty from the disbanded 7 Div (194), carried an establishment of ten guns (195). During September and October it took over sites at Chute-a-Caron and Isle Maligne from the 12 AA Bty, and absorbed a full troop of the latter battery, which was thus reduced to Type 2L (196). The 24 AA Regt was called upon to provide anti-aircraft protection on the occasion of the Quebec Conference attended by Prime Minister Winston Churchill, President Roosevelt and Prime Minister W.L. Mackenzie King and their staffs in August 1943. Four light AA detachments from the 12 AA Bty moved with predictors and guns to Quebec City, and the 60 AA Bty moved its four 3.7" guns from Gifford to Lauzon, placing them in operation in the Champs de Bataille. From Barriefield came a GL radar set with an operating crew of eighty men (197).

96. The decision to reorganize the 26 AA Regt in Newfoundland on a French-speaking basis (see par 16 below) coupled with the withdrawal of AA defences from Quebec and Gaspe as part of the plan for the reduction of operational troops in Canada (198), combined to cut in half the number of batteries that composed the 24 AA Regt. First to go was the 17 AA Bty which left for Gander on 6 Oct 43 with its eight 3.7 in guns, the move reducing Arvida's scale of heavy guns to the eight manned by the 41 AA Bty (199).

In November, the 52 AA Bty, expanded to Type 4L, the 60 AA Bty, reduced to Type H, and the 61 AA Bty, now a Type 2L ceased their operational duties at Gaspe and Levis, to concentrate at Valcartier prior to embarkation for Newfoundland as units of the 26 AA Regt (200).

97. The streamlined 24 AA Regt, comprising now, in addition to regimental HQ and the GOR, three batteries, the 41 AA Bty (2H), the 12 AA Bty (2L) and the 63 AA Bty (2LS), continued to man the AA defences of Arvida until mid-summer 1944. On 24 July orders were received by the regiment to cease its operational role (201). Three weeks later 23 officers and 475 other ranks had reached Shilo, and the men were being despatched for harvest operations on various Manitoba farms (202). Back at Arvida the Ordnance staff was busy putting all guns in grease.

98. While a reduced HQ Administrative Staff remained at A-15 CITC, Shilo, the men of the regiment worked in the fields of Manitoba, as the sugar beet harvest succeeded grain threshing in October (203). Early in December the 24 AA Regt, with a strength of 567 all ranks returned to Eastern Canada. Changes had taken place in the policy of the disposition of NRMA troops, and all medically fit members of the regiment were liable for overseas service. By the end of the year 371 ORs had been transferred to the Infantry Corps and posted to 1 Bn Fusiliers du St Laurent and 1 Bn Regt de Joliette (204). Remaining personnel were struck off strength to the Placement Wing, No.5 District Depot, and on 15 Jan 45, the 24 AA Regt RCA ceased to exist (205).

EARLY AA DEFENCES IN NEWFOUNDLAND

99. The need for supplying Canadian anti-aircraft defences at strategic points in Newfoundland was given consideration early in the War. A report on the Defence of Newfoundland prepared by the Inspector General Militia in August 1940 declared that heavy AA guns should be provided at Newfoundland Airport (Gander), St. John's, Bell Island, and Botwood, and that "likely Canada will have to find them, therefore consideration should be given now to raising and training of personnel required"(206). At the time, it was pointed out that the only anti-aircraft defence for the important Gander Airport was provided by the Black Watch Regiment, which had extemporized mountings for L M Gs, and had AA posts dispersed throughout the area.

100. When the US Army Force arrived in Newfoundland at the end of January 1941, it made available for Canadian use sixteen .5 Colt AA machine guns and five AA searchlights. (207). Steps were immediately taken to organize a battery to man these guns (208) and on 25 Apr 41 the 16 AA (MG) Bty, raised in MD 6 and MD 7, arrived in Newfoundland (209). Under American instructors the battery put into action twelve machine guns at Gander, and four at St. John's. In June the 16 AA S/L Troop arrived to operate the five searchlights at St. John's, an American battery also manning five US lights to complete the city's AA searchlight defences (see para 75 above).

101. The American Force on its arrival placed an AA battery of four 3 inch guns and a .5 AA MG Bty in action at Signal Hill for protection of St. John's and the Harbour (210). These guns were continuously manned by US personnel in addition to later Canadian AA defences at the port. In

July 1941 four more US 3-inch AA guns became available on loan (211), and little time was lost in providing a Canadian battery to man them. On 18 August the 7 AA Bty arrived from Halifax, where it had performed manning duties since the outbreak of war. Four months were spent at St Johns while the battery trained on its new equipment, and on 17 Dec 41 the unit moved to Gander to put the guns in action. In the following March the 7 AA Bty was joined at Gander Airport by the newly formed 5 AA Bty, which took over the positions of the 16 AA MG Bty, and by the end of April had six Bofors in action (213). The arrival in June of the 14 AA Bty (Type H) and the 27 AA Bty (Type 2L) for the St Johns-Torbay area completed the list of Canadian anti-aircraft units in Newfoundland prior to the organization of AA regiments.

25 AA REGT RCA —ST JOHNS-TORBAY

102. Departing from the Chain of Command that applied in Canada, the two AA regiments in Newfoundland were directly responsible to Force "W" instead of their respective area commanders (214). Authorized for St Johns-Torbay Defence Area the 25 AA Regt RCA was placed on active service as a unit effective 1 Jun 42 (215), but it was not until 1 October that organization of regimental headquarters took place. The new Commanding Officer was Lt-Col C V Harris, ED, who had → commanded the 1 AA Bty at the beginning of the War, and, after moves within the Atlantic Command, now came to Newfoundland, from OC Shelburne Defences (216). Lt-Col Harris found two units of the regiment on duty on 1 Oct. The 14 AA Bty (Type H), after service at Halifax and Arvida (see paras 35,36 above) was now at Torbay, where it had been manning four 3.7" guns, without instruments, since its arrival in June. The 27 AA Bty had four Bofors in action at Torbay and four at St Johns, guns that had been previously temporarily manned by

a troop from the 8 LAA Regt of the 4 Armd Div (217). From personnel of the disbanded 16 AA (MG) Battery an office staff was formed (216) and regimental headquarters was set up at Calver's Field, St Johns with the following slate of units:

HQ	25	AA	Regt		
No	5	AA	GOR		
	14	AA	Bty	(H)	St Johns
	54	AA	Bty	(2H)	Torbay
	27	AA	Bty	(2L)	Torbay
	48	AA	Bty	(2L)	St Johns
	55	AA	Sec	(L)	Bell Island

103. Four days before Christmas, the Lady Rodney docked at St Johns with the main parties of the 48 and 54 AA Btys and the 55 AA Sec (218). The 48 AA Bty, which had been formed to allow separate Bofors batteries for Torbay and St Johns (see para 52 above) went to North Camp at Torbay Airport, five miles north-west of the city, and took over the 27 AA Battery's positions there (219). The 54 AA Bty was established at South Camp, Torbay Airport, and proceeded to put into action two four-gun sites between Torbay and St Johns (220). The manning of the eight Bofors that were sited in a long narrow horseshoe around the city and harbour was taken over by the 27 AA Bty, while the 14 AA Bty, relinquishing its positions at North Camp, Torbay, moved its four guns to a new site on the southern outskirts of St Johns (221).

104. The 55 AA Section, with a strength of 2 officers and 41 other ranks, drew two Bofors from Ordnance, and sent one with an advance party to Bell Island on 28 Dec 42 (222). All through January cold weather and blocked roads between St Johns and Portugal Cove, prevented the movement of the second gun, and it was February before the equipment was taken across Conception Bay to the island. The two guns were placed in action on Bell Island in a dual role,--to provide both anti-aircraft

and anti-submarine defence to the ore-loading installations at the Dominion Pier and Scotia Pier (223). The defence of Bell Island had been regarded originally as a responsibility of the Newfoundland Militia, which was already manning two 4.7 inch guns for coast defence. Some misgivings were expressed that the Canadian and Newfoundland service personnel might not mix well on close contact, differences in conditions of enlistment and rates of pay being taken into account (224). The Newfoundland Government found however that its reserve requirements for maintenance of its two artillery regiments overseas were too high to allow the provision of AA personnel for Bell Island. And so the Canadian detachment was sent, and in an uneventful stay on the island proved the fears to have been unwarranted.

105. When it was decided to provide light anti-aircraft protection for Bay Bulls (see para 79 above) expansion was authorized of the 55 AA Tp to the six-gun 55 AA Bty (Type LS). The section with its guns and equipment was withdrawn from Bell Island on 7 Jul 43, and a detachment went to the AA Reinforcement Camp at Bedford to form the training cadre for the converted unit (225). Before reorganization of the battery was complete however, Bay Bulls fell under the axe of "reduction in operational troops"(198). The unit was reduced to nil strength on 18 Oct 43 (226).

PROPOSED JOINT CANADIAN-U S G O R

106. The joint presence of US and Canadian anti-aircraft units in the St Johns -Torbay area led to an American proposal (in April 1943) for a combined GOR, to control all AA artillery in the area (227). The US Commander (Maj Gen John B Brooks, HQ Newfoundland Base Command) suggested that such an Operations Room would be set up in the US Army Information Centre at Fort Pepperel, and that while the US Army was prepared to control the operation of all AA Artillery, the Senior RCAF Commander could use American equipment to exercise control over all

Canadian and US fighter aircraft in the vicinity. A Canadian AA Liaison officer would be stationed at the GOR (228). Up to this time No 5 AA GOR had been operating at Torbay as a unit of the 25 AA Regt. Accommodated at first none too luxuriously in No 4 Bofors hut, for which neither water nor power was available (229), the GOR staff was now "temporarily" housed in No 2 Hangar, waiting to move into a new fully equipped building, which was then nearing completion (230).

107. Concurrence in the American proposal presented several difficulties. These were outlined in a letter to the GOC Force "W" (the late Maj Gen L F Page DSO, CB) from Maj Gen S C M Archibald, DGAA. Gen Archibald pointed out that the Operations Centre at Fort Pepperell could be adapted as a GOR provided necessary additions to accommodation and communications could be made. The AA Defence Commander should be a Canadian, who would need to maintain his full control of AA defences and liaison with the RCAF and Fortress Commander. Adaptation of the US GOR would however involve in addition,

(a) Sacrifice of the GOR accommodation almost complete at Torbay;

(b) If a US officer were appointed AADC,

(i) Adoption by US personnel of the Canadian system of GOR operation,

(ii) Acceptance by the US AADC of RCAF control of air operations, and of the Fortress Commander's control of ground operations.

(iii) Acceptance by the AADC of the Fortress Commander's siting of heavy AA guns (227).

108. But probably carrying just as much weight in the Canadian objections to the American proposal was the fear that

the institution of a joint GOR along lines suggested would bring into effect a system of Unity of Command, a situation that the government of neither Canada nor the United States was anxious to contemplate. It was a matter of relief to the Canadian authorities when, following discussions between the two Army Commanders in St Johns, Maj Gen Brooks advised that, due to a shortage of the necessary personnel he considered himself unable to carry out the proposal for a Joint GOR (231).

REDUCTIONS IN AA DEFENCES — TORBAY

109. Abandonment of the provision of heavy AA protection for Torbay Airport, with a consequent greater concentration of fire power for St Johns began late in 1943, when construction of a new heavy four-gun site was undertaken south of the harbour, and the South Camp site at Torbay was changed from an operational to a training basis. The 14 AA Bty (Type H) at Pennywell Road exchanged places with "B" Tp and Bty HQ of the 154 AA Bty (165) at Kenny's Pond (232). In the following May the 154 AA Bty moved its remaining troop from South Camp to man the new site in the South Side Hills (233).

110. The relief of Newfoundland AA batteries early in 1944 by exchange of station with units from MD No 6 has already been noted (see paras 84 and 90 above). The 49 AA Bty arrived from Halifax at the end of February to replace the 14 AA Bty at Kenny's Pond (234), and in March the 24 AA Bty from Sydney took over the Befors guns of the 27 AA Bty in the city area (235). In August all army AA protection for Torbay Airport ceased as the 148 AA Bty (165) moved to the St Johns Transit Camp en route to Canada for disbandment (236). The end of 1944 thus found the 25 AA Regt, under the command of Lt-Col R F Capel, who had succeeded Lt-Col Harris in April (see para 91 above) (237) reduced to three batteries, the 49 (H), the 154 (2H) and the 24 (2L), and No 5 AA GOR, with all its guns sited to cover St Johns and its immediate vicinity.

111. North west of St Johns, 200 miles away by winding railroad, Gander Airport had been carved out of the wilderness, the largest completed aerodrome in the British Empire (238). 40 miles further to the west (70 by rail) was Botwood, the most important harbour outside of St Johns, exporting large quantities of zinc and lead concentrates to the United Kingdom, and the site of a fully equipped Trans-Atlantic seaplane base. Midway between Gander and Botwood a branch line led to Lewisporte, a smaller port which the installation of oil storage tanks was later to make a potential enemy objective. Both ports presented opportunities for hostile landing operations directed against Gander, and as such had to be provided for in the general scheme of defence of the Airport.

112. The first Canadian defence forces for the Newfoundland arrived in June 1940, when the 1 Bn Black Watch commenced operations at Gander and Botwood (239), its role to protect the airport and the seaplane base against

- "(a) Action by enemy land forces.
- (b) Action by enemy air forces.
- (c) Sabotage " (240).

Early anti-aircraft defence for the Airport was provided by L M G's on extemporized AA mountings (206), until the arrival, in April 1941, of the 16 AA MG Bty to man the .5 Colt machine guns supplied by the Americans (see para 100 above). By the end of the year the 7 AA Bty had put the four 3 inch U.S. guns in action between No 3 and No 4 Runway (241) and the following spring saw the first Bofors in Newfoundland being manned around the aerodrome by the 5 AA Bty, who replaced the 16 AA MG Bty (see para 101).

113. These were the only two AA units in the Gander area when the 26 AA Regt was organized in Aug 42 with the following

composition (242):

HQ	26	AA	Regt		
No	4	AA	GOR		
	7	AA	Bty	(2H)	Gander
	5	AA	Bty	(2L)	Gander
	56	AA	Bty	(H)	Botwood
	28	AA	Tp	(L)	Botwood
	29	AA	Tp	(L)	Lewisporte

Placed in command of the regiment was Lt-Col I B Mac Callum, who came from Arvida where he had commanded the 14 AA Bty. Provision of new equipment brought expansion of the area's defences, as the 7 AA Bty, which had replaced its US guns by four 3.7 inch guns in June 1942 (243) put four more guns into action at North Camp in October (244). In September 1943, the 5 AA Bty was expanded to a Type 4L unit, to meet the increase in Gander's allotment of Bofors protection (see paras 76 and 78 above)(245). By the end of October the battery had fourteen of its sixteen guns in action.

114. In the meantime Botwood and Lewisporte had received their initial AA protection with the arrival, in June 1943, of the 28 AA Bty and the 29 AA Bty. Both batteries came direct from a prolonged organizational stage at the Bedford AA Artillery Reinforcement Camp. To meet the expanded scale of defences the establishments of both units had been increased from their original authorization. The 28 AA Bty, now Type 2L, placed its eight guns in action on arrival at Botwood, and the 29 AA Bty, redesignated Type LS, immediately manned its six Bofors at Lewisporte to complete the ultimate scale of AA defences for the two ports (247). The 56 AA Bty (Type H), originally authorized for Botwood, reached Gander on 22 Aug 43, and for nearly three months remained at North Camp, where it was attached to the 7 AA Bty in a training role (248). 3.7 inch AA defences had been withdrawn from the ultimate plan for Botwood (see para 78 above), and as a result the 56 AA Bty did not get into action. The unit was withdrawn from Gander on 11 Nov 43 (249) and immediately disbanded on its return to Canada (250).

115. Besides being in command of his regiment, the O C 26 AA Regt was also Commander of all Canadian Army Troops in the Gander Area. To meet the threat of enemy attack against a station whose maintenance was vital to the successful flow of a vast number of American and Canadian planes to Britain (251) all service personnel in the area were included in the local defence scheme. In addition to the two anti-aircraft batteries and detachments of the administrative services, the Commander had at his disposal in the summer of 1943 an Aerodrome Defence Company, which had replaced the infantry battalion allotted for ground defence in 1940-1942. Outside of Canadian Army forces, security guards were available from the Royal Air Force Transport Command, the R C A F, and the U S Army Air Force - the two latter forces being also able to supply hospital personnel. With these troops at his disposal the O C framed his defence plan to oppose, in conjunction with R C A F fighter planes, the possibility of hostile attack by high and low level or dive bombing, the landing of parachute troops, or the penetration via the railroad of enemy forces put ashore by submarine (252).

26 AA REGT RCA (FS)

116. In the autumn of 1943, when the reorganization of operational troops in Canada was effecting a reduction of 20,000 men, of whom some 2600 were AA personnel (198), a decision was reached to place the 26 AA Regt on a French speaking basis, and to include in its formation FS batteries that were being taken out of action at Quebec, Arvida and Gaspe. The new disposition was arranged with a view to maintaining as far as possible a proportionate representation of French-speaking AA Artillery units (253). The change involved the disbandment of all the batteries of the existing 26 AA Regt except the 29 AA Bty, which, with No 4 AA GOR, was converted to a French-speaking unit by replacement of its English-speaking personnel.

117. A new regimental headquarters was organized under Lt-Col J E Plamondon, (at that time 2 i/c 24 AA Regt RCA, Arvida)(254) and component batteries still in Canada concentrated at Valcartier early in November (see para 96 above). With little loss of time the move to Newfoundland was completed (255), the first relief at Gander taking place on 4 Dec (256). On that date the 52 AA Bty, from Gaspe, now expanded to a Type 4L unit, took over the sixteen Bofors of the 105 AA Bty (formerly 5 AA Bty)(165) at the Gander Airport. The 105 AA Bty returned to Canada, and disbandment was completed at Bedford on 15 December. Relief of the 7 AA Bty by the French-speaking eight-gun 17 AA Bty from Arvida had already been effected (29 Oct 43), and by the end of November this unit that had served for four years in Atlantic Command, and had pioneered in the heavy AA defences of Newfoundland, had ceased to exist (257).

118. The reorganized 26 AA Regt comprised these units:

HQ	26 AA Regt	RCA	Gander
No	4 AA	GOR	Gander
	17 AA Bty	(2H)	Gander
	60 AA Bty	(H)	Gander
	52 AA Bty	(4L)	Gander
	29 AA Bty	(LS)	Lewisporte
	61 AA Bty	(2L)	Botwood.

In mid-December the 60 AA Bty and the 61 AA Bty arrived at Gander and Botwood respectively, and French speaking reliefs for the 29 AA Bty reached Lewisporte (258). The return to Canada, for disbandment, of the 28 AA Bty from Botwood, and the English-speaking personnel of the 29 AA Bty, completed the conversion of the 26 AA Regt (259). By the end of 1943 the placing of the 60 AA Bty's four 3.7"s in action on the Lewisporte Road Site had implemented Gander's revised scale of guns, amounting to twelve 3.7 inch and sixteen 40 mm Bofors.

119. Throughout 1944 the number of AA guns in action at Gander Airport was maintained without change. In October, however, the wholesale reduction in anti-aircraft defences that was being effected throughout Atlantic Command brought the withdrawal of the batteries from the outlying stations of Botwood and Lewisporte. The 29 AA Bty and the 61 AA Bty turned their guns in to Ordnance, and, having supplied drafts to

bring other Force "W" units up to strength returned to Canada in November for disbandment (260).

AA DEFENCES AT GOOSE BAY, LABRADOR

120. In the summer of 1941 the Government of Canada approved the Seventeenth Recommendation of the Permanent Joint Board on Defence, which read:

"In order to facilitate the ferrying of long and medium range aircraft across the Atlantic, to enhance the effectiveness of plans for hemisphere defence, to prevent congestion at the Newfoundland Airport (Gander) and to provide greater security for crews and equipment, the Board recommends: That the Canadian Government should undertake the construction of an air base in the vicinity of Northwest River, Labrador..... as quickly as possible" (261)

121. A suitable site had already been selected on a raised plateau between Goose Bay and Hamilton River, approximately seventeen miles from the Northwest River settlement on Lake Melville, Labrador (262). In August the first surveyors and engineers were flown in, supply boats arrived late in September, clearing and construction work went rapidly forward, by the end of November the gravel pit and a saw mill were in operation, and on 9 December the first land-plane came down on the newly rolled runway (263). By the time that navigation opened in May 1942 Goose Bay Airport had become a busy community in the wilderness, with roads, power lines, powerhouse, administration buildings, messes and barracks, a hospital, a dock and oil storage facilities (264). Within a year it had grown to be the largest airport in the world and one of the busiest in the Western Hemisphere, servicing more planes for overseas than went through any other ferry aerodrome on the North Atlantic seaboard (265). →

122. During the winter of 1941-42, when development of the airbase was still at a limited stage, defence against possible attack was the responsibility of the R C A F (261). In April 1942,

the army garrison for Goose Bay -- Force "G" -- was authorized, and the first flight of 500 officers and men sailed from Halifax on 16 June, disembarking at Goose Bay eight days later (266). Force "G", temporarily commanded by Lt-Col F L West ED, included an infantry battalion (N B Rangers), the 108 Heavy Bty RCA for coast defence and examination service at Rigolet Narrows, two anti-aircraft batteries (the 15 AA Bty, Type H, and the 30 AA Bty, Type 2L) and detachments of the services (267). Other flights followed, to complete the movement of the garrison by the end of July, when Lt-Col JN Medhurst, ED, assumed command of the N B Rangers, and of the Goose Bay Defences (268).

123. Living in tents and waging a painful battle against the midsummer hordes of mosquitoes, black flies and sandflies, the two AA batteries put their guns into action without delay. Both units had been organized for service in Labrador. The 15 AA Bty was one of the first to be trained at the Heavy AA Wing of A-23 at Wright's Brook (95), while the 30 AA Bty had formed at the AA Unit Staging Camp at Debert with a cadre trained in the second six-weeks' course at the CD and AA TC (92). Initially the heavy battery placed two of its 3.7s at Otter River (Area "I") at the head of Terrington Basin, and two at Area "H" on the east side of the Airport, while the 30 AA Bty grouped its eight Bofors around the main runway and hangars to give protection against low-flying and dive-bombing attack (269).

124. The months that followed saw the two batteries in common with the rest of the Goose Bay garrison, carrying on a triple role of training, defensive operations and camp construction. The transition from tents to barrack rooms was not accomplished until all hands had taken their turn at building temporary shelters, while large fatigue parties helped to meet the labour problems of the civilian contractors. The sawmill operated at full capacity, and many a tree that was growing in the morning had been nailed into a building by night. Until the men moved into their regular army huts in mid-winter they lived

in improvised quarters, - tented dugouts, made by erecting a bell-tent with elongated pole over a circular pit four feet deep, square cabins, half buried in the ground, built of slab-sidings from the sawmill; and log shacks, simply but sturdily constructed by men who had spent many years before the war in logging camps in the Canadian bush (270). When the men of the construction companies went on strike because of income tax deductions, the army took over the unloading of the freighters in Terrington Basin, and when much-needed supplies were lost at sea as a result of enemy submarine activity, the troops demonstrated their adaptability in equipping their quarters with improvised furnishings, shelves, tables, chairs, lamps, "devices for cooking, and above everything, for heating water" (270).

125. In December cold weather brought trouble with the guns, which were experiencing their first sub-zero temperatures since their manufacture. Heavy grease congealing in the bearings virtually put the 3.7's out of action owing to the extreme stiffness of the elevating and transversing gears. Substitution of a lighter lubricant produced satisfactory results with temperatures down to 20 degrees below zero. On the rare occasions when the mercury dropped below that mark, gears could only be operated with difficulty, and at considerably less than normal speeds (272). The predictor for the site was kept in action by enclosing it inside a small wooden shelter with collapsible sides, in which a locally-devised hot-air heating system neutralized the effect of the sub-zero temperatures outside (273).

126. Spring came late, and it was June before the ice moved out of the Bay (274). With navigation re-opened arrangements were completed for the relief of the two batteries after

their year in Labrador. The Lady Rodney arrived on Dominion Day with the 1 AA Bty (2H) from Halifax (see para 83 above), the 6 AA Bty (H) from Sydney (para 90), and one troop of the 25 AA Bty (3L) from Saint John (para 87). Next morning she sailed for Quebec with the 15 AA Bty, bound for Sydney, and a troop of the 30 AA Bty, headed for Saint John (275). The arrival of the relieving units at Goose Bay marked the implementation of the area's increased scale of defences to twelve heavy and twelve light AA guns (see para 79 above). The 1 AA Bty, substituted for the 20 AA Bty originally scheduled for Labrador (see para 83 above), put into action four 3.7's at the 15 AA Bty's northern site at Otter River, and four more in a new position, Area E, east of the airport. To complete the triangle, the 6 AA Bty manned a new four-gun site south-west of camp, Area G. Before protection around the runways was increased to a greater density as the 25 AA Bty, completing the relief of the 30 AA Bty, put its twelve 40mm guns into action (276).

127. With no regimental organization for anti-aircraft units at Goose Bay, batteries came directly under Headquarters Goose Bay Defences for administration, training and operational control. When a war establishment was approved for the area, with effect 1 Sep 43, an AA Defence Commander, (Maj H G E Ellis) was appointed, with an AADC (lieutenant) to act as technical adviser to the Area Commander (277). The new establishment provided for an Area Commander in addition to the O C infantry battalion. In July 1943 Lt Col W G T Reach, MC, ED, was appointed to the post from Aerodrome Defence Director, Atlantic Command, succeeding Lt Col Medhurst, who returned to Canada with his regiment, the N B Rangers, preparatory to proceeding overseas. Coordination of operational information between the R C A F and the gunsites was facilitated by the establishment of No 10 AA GOR, which was formed in Halifax on 16 Jul 43, and arrived at Goose Bay a month later (278). Radar equipment received by the

1 AA Bty in September 43, and installed on their sites at Area "I" and Area "E" made it possible through GOR, control for batteries to engage unseen targets. For the first time, and from that time onward, anti-aircraft units at Goose Bay could be considered fully operational (279).

128. After a year of service at Goose Bay, AA batteries were relieved in a full change-over of units that took place during the first two weeks of July 1944. The 1 AA Bty returned to Halifax, its place being taken by the 20 AA Bty, the eight-gun heavy battery originally slated for Goose Bay. The 15 AA Bty came from Sydney to resume its role in Labrador, taking over from the 6 AA Bty the gunsite in Area "G". From Saint John the 30 AA Bty, now expanded to three troops, returned to relieve the 125 AA Bty (formerly the 25 AA Bty) (165) in the manning the twelve Bofors allotted to the area's defences (280). Prepared for a year's stay at the northern station, the heavy batteries found their tour of duty cut short in September, when the changing picture of the War in the European theatre made possible further reductions in Canadian defences. It was decided to maintain only Bofors protection for Goose Bay. All 3.7 inch guns were taken out of action, and in company with the personnel of No 10 AA GOR, the 15 AA Bty and the 20 AA Bty sailed for Bedford on 2 Oct 44 to be disbanded (281). The end of 1944 found the 30 AA Bty with its twelve 40 mm guns supplying the only AA defences for Goose Bay.

INDEPENDENT AA BATTERIES —SHELBURNE AND YARMOUTH

129. Separated by distance from the ^{dubious} benefits of regimental control, anti-aircraft units allocated to Yarmouth and Shelburne operated during their existence under the administration of the nearest military formation (see para 65 above). Formed at Aldershot in June 1942 on completion of cadre-training at A-23, the 45 AA Troop (Type L) moved to Yarmouth in July, siting its four Bofors to give protection to the RCAF airfield (282). The

only unit in an operational role in the locality, the 45 AA Tp came under command of the OC No 60 CA (B) T C (111). For a year and a half the troop remained at Yarmouth, until the general reduction in defences that took place in the autumn of 1943 (198), brought its operational duties to an end. Guns were taken out of action on 11 Oct 43, and by the end of the month the unit had been reduced to nil strength, - its personnel transferred to the overseas reinforcement stream, or posted to other batteries in Atlantic Command (283).

130. Even briefer was the operational existence of the 26 AA Troop (Type L) formed to furnish AA defences for the new naval installations at Shelburne. After organization at the AA Artillery Reinforcement Camp at Bedford, the unit arrived at Shelburne late in November 1942, and had its guns in action at its VP by the first week in December (284). Operational and administrative control of the troop were exercised by the OC Shelburne Defences. During the spring and summer of 1943 the troop carried out a combined operational and training role, one gun at the water's edge being available for anti-motor-torpedo-boat defence as well as for AA firing (285). In October the troop came under the axe of large scale reduction (198), and followed the 45 AA Tp into disbandment (286).

10 LAA REGT RCA

131. Available to the GOC-in-C, Atlantic Command as a potential mobile anti-aircraft reserve was the 10 LAA Regt, mobilized on the order of battle of the 7 Div (287). After concentration at Petawawa in July 1942, the regiment, which comprised the 6,7,8 and 9 LAA Btys drawn from widely divergent parts of Canada (288), moved to Sussex at the end of September, and in November joined the 7 Div at Debert (289). Formed on an establishment of 42 officers and 1128 other ranks, a number later cut to 34 and 604, the regiment was allotted 36 Bofors,

which were made available in the spring of 1943. In June 43 the regiment moved in convoy to Tracadie, to train with other artillery units of the 7 Division (290). A reorganization to a three-battery regiment took place, in which the 8 LAA Bty was dropped from the composition of the unit. The total number of guns in the regiment remained the same, each battery receiving twelve Bofors in the new distribution.

132. Twice detachments from the 10 LAA Regt were called on to fill an operational role. In June 1943 6 officers and 164 other ranks of the 9 LAA Bty were sent to Saint John to help man that area's Bofors defences during the period of the Goose Bay reliefs (291)(see para 87 above). They rejoined the regiment at Tracadie in September (292). A welcome break in the routine of training and fatigues came for the personnel of the 6 LAA Bty in August, when it was ordered on special duty to Quebec City to assist in providing AA protection for the Quebec Conference (293). Apart from these two excursions into the operational field, units of the 10 LAA Regt spent their days in training and waiting. At the end of the summer, when the changed scale of defences in Canada brought about the disbandment of the 7 Div, the regiment returned to Debert from Tracadie for reduction and reorganization. From its personnel an eighteen-gun battery on a cadre basis was formed, the 1 Trg LAA Bty, to be part of the 1 Trg Bde at Debert. Drafts to overseas units and AA batteries in Atlantic Command absorbed the remaining officers and other ranks, and by the end of October the 10 LAA Regt had ceased to exist, (294).

PROVISION OF AA FIRE CONTROL EQUIPMENT

133. The extent to which the four 3.7" guns of a heavy AA battery could be said to be in a fully operational role was limited by the nature of the fire control instruments in use at the gunsites. For every four guns a Predictor (Sperry No.5) was provided, - an ingenious instrument into which was fed the data regarding the movement of the approaching target, and from which magflip cables transmitted to the guns the target's future range, bearing and angle of sight. To obtain the necessary information for the Predictor, Height and Range Finders could be employed when targets were visible. But the more modern method of detection of planes, seen or unseen, and one that gave earlier warning and more accurate fire-control data, was the use of radar or GL sets (see para 17 above). The GL Mk IIIc set consisted of a ZPI (Zone Position Indicator) sweeping over a full 360 degrees and giving first warning of approaching planes at 60,000 yards range, and an APF (Accurate Position Finder) which then pin-pointed the target by means of a concentrated beam reaching out 17,000 yards. If the target were to be engaged magflip cables carried the data into the Predictor for transmission to the guns.

134. The methods then by which heavy batteries could engage targets were dependent upon the fire control instruments as follows(295):-

(a) When neither Height and Range Finders nor GL sets were available, batteries could only engage by firing concentrations.

(b) With H & RF or GL sets in use seen targets could be engaged.

(c) The employment of GL sets made the engagement of unseen targets possible, i.e. the battery was fully operational (279). By the end of 1943 the gunsites of the twenty-five heavy AA troops in the Command were each equipped with a Sperry Predictor, Height Finder and Telescope Indicator. The number of radar sets in action had grown in the last six months from

two (at Arvida and Halifax(296)) to fifteen (297). By July 1944 a full complement of GL sets had been supplied, so that all gunsites were now tied in with early-warning equipment, and all could be considered fully operational (298).

135. Fire control equipment for Bofors guns, which were always employed for the purpose of engaging visible, low-flying targets, consisted of the Kerrison No 3 Predictor, normally allotted on the basis of one per gun (see para 16 above). In alternative or supplemental use to the Predictor was the British-designed Stiffkey Stick (Sights Correctional Mark V) which had the advantage of speed in operation against unexpectedly-appearing targets, though it lacked the Predictor's accuracy of fire control (299). The Stiffkey Stick's mobility in contrast to the weight of the Kerrison Predictor made it especially suited to the requirements of the mobile light anti-aircraft batteries. The end of 1943 found enough Kerrison Predictors and Stiffkey Sets available in Atlantic Command for every 40mm gun in action to be equipped with one type of instrument or the other (300). By the middle of 1944, fire control at every Bofors operational site was being effected by the use of both a Predictor and a Stiffkey Stick (301).

OPERATIONAL TRAINING AND PRACTICE SHOTS

136. One of the most serious training problems confronting commanders of AA units in an operational role was the difficulty of obtaining facilities for practice shoots for their guns. While each regiment was empowered to call upon a neighbouring RCAF station to supply a towing-plane and drogue, experience showed that weather conditions and other adverse factors frequently proved insuperable obstacles. Shoots were more frequently postponed than held as scheduled, as last-minute notification would come from the Air Force that poor visibility or a damaged plane prevented target-towing service (302). Without a drogue to shoot at batteries would find other means of testing their accuracy. Hydrogen-filled balloons served as targets

for the Bofors, while a troop of 3.7's might use as an aiming-mark the smoke of one of its own shell-bursts hanging momentarily in the sky 5000 feet up (303).

137. Because the majority of AA guns defending VP's were placed within or near populated areas, it was rarely possible for firing-practices to be held at the operational site. Sometimes, as in the case of McNab's Island in Halifax Harbour, an outlying position could be used as a practice site for all the heavy AA batteries within the regimental area with the guns being fired out towards the Atlantic Ocean to the south west (159). In other areas, where no operational site was suitable for such a purpose, it was necessary to take guns temporarily out of action, and move them to an isolated section of the coast or the interior where they could be fired without endangering life or property from spent shell fragments. Thus heavy AA batteries from the St. Johns - Torbay area went twenty miles north to Pouch Cove, beside Cape St Francis for their shoots (304), and Bofors troops from the same area went into the South Side Hills to fire (305), or from Shelburne took their guns out to Government Point (285). In the Gander and Goose Bay areas, situated as they were in the heart of the wilderness, practices could generally be held from the operational site, the direction of the firing being restricted to certain carefully defined sectors selected with due regard to the safety of the whole camp.

AA CONTROL AT HQ ATLANTIC COMMAND

138. As technical advisor on all artillery matters, including CA, AA and SL's, the GOC-in-C had the Colonel Fixed Defences and AA attached to his Headquarters Staff (306). This appointment was continuously filled by Col C V Bishop, MC, until the disbandment of Atlantic Command. The Colonel Fixed Defences ("and AA" was added in Apr 44) was responsible for

- (1) Reconnaissances for sites and recommendations re construction of accommodation and emplacements and installation of all artillery equipments.
- (11) Liaison with Signals with respect to inter-communication affecting artillery in all Defended Areas.

- (iii) Liaison with Engineers regarding construction projects affecting artillery
- (iv) Artillery inspections of personnel and equipment as might be required by the S0C-in-C.
- (v) Co-ordination and supervision of artillery training in co-operation with GSO 1 (Trg).

139. Technical adviser to the Col FD & AA was the Chief IG of whose staff more than fifty per cent were AA personnel (307). With the IG Staff rested responsibility for the advice regarding AA armament installation and re-equipment, the arrangement of tests and calibrations on armament and technical equipment, and the supervision of and assistance in training of AA batteries as directed by the Col FD & AA (308). Above the Atlantic Command level was the DGAA Staff at NDHQ (headed by Maj Gen S C M Archibald, RA, 5 Jul 43 - 30 Jun 44, and Brig D R Agnew, 1 Jul 44 -) which by shaping the policy regarding AA protection on both coasts, and by assisting in the selection of sites, by battery inspections and by technical advice to the two Commands, played an important part in the development of Canadian AA defences.

RESTRICTIONS AND REDUCTIONS

140. The late summer of 1943 saw the peak of expansion being reached in AA defence on the East Coast. The defeat of Axis forces in North Africa and Sicily together with the increasing success of Russian troops against the main German armies had removed the possibility of any major threat against the East Coast of North America. In the West the occupation of Attu and Kiska in May and August had put an end to the danger of a Japanese drive up the Aleutian Chain, and enemy naval revers elsewhere in the Pacific had materially lessened the danger of aerial attack on British Columbia from carrier-based planes. In the light of the general improvement in the strategical picture, and to meet the increased demand for overseas reinforcements, it was necessary to effect substantial reductions in the strength of operational troops in Canada (198). From 1 Oct 43 manning strengths of all static AA units in Canada were reduced on a

scale of 20 per cent for heavy, and five per cent for light batteries. This meant a decrease of 28 gunners per heavy troop, and three gunners per light troop, and resulted in a saving of nearly 1000 men in the batteries affected in Atlantic Command (309). Revision of the establishments of the AA GORs aided the manpower situation by providing for the inclusion of CWAC personnel as operators (310).

141. Accompanying these restrictions came withdrawals from operational sites that have already been noted. The four Bofors guns at each of Shelburne, Gaspé, Yarmouth, Isle Maligne and Quebec were withdrawn, and the troops manning them disbanded or assigned to replace units in action in Newfoundland (see para 116 above)(311). In the reorganization that followed, the English-speaking batteries of the 26 AA Regt in the Gander Area passed out of existence.

142. A year later the continued improvement in the general situation as "D" day came and pressure on Germany increased from all sides, joined again with the insistent demand for Overseas reinforcements to bring further reductions in the state of Atlantic Command's AA defences. The Arvida sites closed down in July 1944; heavy AA guns at Saint John were removed in August; up in Newfoundland the battery defending Torbay Airport was disbanded in August, and the AA units were withdrawn from Lewisporte and Botwood a month later; Goose Bay lost its heavy AA batteries in September; and at Sydney all units of the 23 AA Regt went out of action in November. The end of the year found Halifax, St Johns and Gander the only places in the Command at which 3.7 inch guns were still in operation, while in addition to Bofors protection at these three stations, light anti-aircraft guns continued to be manned at Saint Johns and Goose Bay.

THE ANTI-AIRCRAFT DEFENCES
OF THE ATLANTIC COAST

1. Definition of Terms

In order to avoid confusion in the use of terms relating to Air Defence the following definitions are accepted as standard:

- (a) Air Defence refers to a combination of all active means of defence against air attack, including both aircraft and anti-aircraft units.
- (b) Aircraft Defence refers to defence by means of aircraft only.
- (c) Anti-Aircraft Defence refers to defence by means of anti-aircraft units only.

- Army Order 91 of 1936.

- 2. "Fixed Coast Artillery Defences", paras 8 - 11.
- 3. The Report of the Joint Staff Sub-Committee on Anti-Aircraft Defences d.16 Aug 38 listed the AA defences considered necessary on the ATLANTIC COAST. Heavy AA guns in quantities commensurate with their recommendations did not reach the coast until the late summer of 1942. HQS.7018- Vol. 1.
- 4. HQS 20-1-12-11 (Oprs) d.17 Jun 41. HQS 7018 Vol. 1.
- 5. Extracts from Chiefs of Staff Committee Memorandum, Anti-Aircraft Defence Requirements d. 28 Mar 39. Para 4, on file HQS 7018, Vol. 4.
- 6. Appendix 1, Defence Scheme No 3, d.6 Jul 38. Quoted in VS 638-1-1-1 d.27 Jun 41 on HQS 20-1-12-11, Vol. 1.
- 7. The additional requirements for the Mobile Force and for a training unit made the total amounts to be obtained 116 Heavy AA guns, 30 Light AA guns and 120 searchlights - Chiefs of Staff Committee Memo d. 28 Mar 39. HQS 7018, Vol. 1 f.145.
- 7(a) HQS 7019, Vol. 2, f.76.
- 8. HQS 7018, FD 9 Vol. 4 d. 1 Apr 40.
- 9. Gen Staff Memo 24 Sep 39. HQS 7018, Vol. 2.
- 10. HQS 66 Vol. 5 JCS . d. 9 Feb 38, and War Diary, HQ MD 6 Vol.1.
- 11. Tele No 637 d. 11 Nov 39, High Commissioner to External Affairs - HQS 7018, Vol. 2.
- 12. Chiefs of Staff Committee Memo to Minister. d. 21 Nov 39, HQS 7018, FD 3, Vol.2.
- 13. Te. No.443, High Commissioner to External Affairs d. 30 Sep 39. HQS 7018, Vol 2.
Tel. No 54, Dominion, LONDON to External, d. 16 Jan 40. HQS 7018, Vol 2.
MGO 226, Canmilitary to Defensor, d. 1 Apr 40. HQS 7018, Vol 2.

14. Chiefs of Staff Committee Memo to the Minister Anti-Aircraft Defence Requirements d. 28 Mar 39. Para 20, on HQS 7018, Vol. 1.
15. Memo, Training of Tradesmen in the Canadian Army d. 15 Oct 41 HQ 21-0 (DTT) Vol 2.
16. An MGO memo to DMA d. 18 Mar 40 disclosed that drawings and specifications for the manufacture of Bofors guns had been cabled for - HQS 7018, Vol. 4.
17. Memo re meeting held in Room 201, House of Commons, on 25 Jun 40, on Prospective Requisitions to be Placed by Canadian Defence Departments with Department of Munitions and Supply. - HQS 7018, Vol. 4.
18. Government subsidies amounting to \$10,000,000. were authorized to cover initial cost of buildings, machinery and equipment, title to all of which was vested in the Crown. Guns and mountings were to be manufactured for fair and reasonable profits. - PC 3997 d. 17 Aug 40.
19. MGO Memo to DMA d. 8 Jul 40, HQS 7018, FD 175 Vol. 4.
20. HQ 466-M2-11 (DOS.TS) over HQ 466-M2-15 (DOS.TS) d. 11 Mar 41 on HQS 7018, Vol. 3.
21. Hon CD HOWE to Hon JL RALSTON, d. 18 Nov 41 on HQS 7506, Vol. 1.
22. VATEL 2956, Min of Supply, LONDON to External Affairs, OTTAWA d. 12 Dec 41, on HQS 7506, Vol. 3.
23. DMA's report to MGO of visit to LONDON - S. 8023 Vol 1 d. 29 Aug 39.
24. In his report to the MGO from LONDON the DMA wrote:
"It seems clear that lights and sound locaps will, in any event be retained for cooperation with aircraft, but if the GL set is finally found to be foolproof, lights, height finders, and sound locators appear to be out insofar as AA shooting is concerned. - Op cit.
25. HQS 8023 Vol 1, d. 22 Aug 40.
26. One officer, Maj HE TABER, RC Sigs, and two NCOs attended a special course at the Military College of Science in Feb 40 - HQS 8023 Vol 1, d. 8 Dec 39.
27. CSC memo d. 17 Aug 40 on HQS 8023, Vol. 1.
28. Minister of Inter-Service Committee d. 21 Aug 40 on HQS 8023, Vol. 1.
29. 40 GL Mk III Sets were ordered 7 Jan 41, and the order was increased to 51 a year later, to allow for one set for each of the 45 gun sections (180 guns) on the ultimate scale, plus six sets for training purposes - HQS 8023 FD 30 Vol 4, d. 22 Jan 1942.
30. The ultimate scale allotment of AASLs to the Atlantic Coast in August 1940 was HALIFAX 12, SYDNEY 12, SAINT JOHN 12, GANSO 6, GANDER 6, BOTWOOD 6, BELL ISLAND 6 - HQS 7018 FD 9 Vol 4, d. 12 Feb 41. HQS 7018 FD 9 Vol. 4, 12/2/41.
31. GS 2221 "Troopers advise lights not successful with AA guns, but trends towards Air Fighting Zone illuminated for indication purposes to our fighters. This would site lights 6,000 yards instead of 3,500 yards apart." HQS 7018 Vol. 4, d. 25 Oct 41.

32. HQS 7018 Vol 4 d. 28 Aug 41.
33. The five fighter zones in CANADA were ST JOHN's - TOR BAY GANDER LAKE, HALIFAX, ESQUIMALT and ARVIDA. Approved by CGS 29 Oct 41, on HQS 7018 Vol 4.
34. Of the 37 modern lights 25 were 60" manufactured by Canadian General Electric; 11 were Sperry 60", made in USA; and one was a British 150 cm model supplied as a pattern by the War Office. The obsolescent lights were 120 cm equipments. HQS 7018 Vol 4 d. 12 Feb 41.
35. HQS 7018 FD 3 Vol 2 d.11 Mar 39, and GS 0786 d.9 Nov 41.
36. War Diary Md No 6, Vol 1. d 15 Sep 39.
37. War Diary Halifax Fortress Vol 1 d. 4 Sep 39.
38. War Diary 4 LAA Bty., d. 16 Dec 40.
39. HFS 3-1-1 d. 27 Dec 40.
40. HFS 1-7 d.14 Jun 41.
41. Minutes of Joint Service Committee Meeting No 27, ACS 10-1 d. 4 Apr 41.
42. Report on Mobilization in MD No.6. Appendix 162 to War Diary, HQ MD No.6 - September 1939.
43. GSO 43. CGS to DOC MD No.6 d. 9 Oct 39. Appx. 48, to War Diary HQ MD No.6 October 1939.
44. War Diary - 6 AA Bty., RCA d. 5 Oct 39, 4 Dec 39.
45. War Diary - 6 AA Bty., RCA d. 15 May 39.
46. Tele.36. DOC MD No.7 to CGS d. 5 Sep 39.
47. DMO & I to DOC MD No.7 HQC 7506 FD 6 d.24 Sep 39.
48. War Diary - 8 AA Bty., RCA d. 15 Apr 40.
49. War Diary 8 AA Bty.,RCA, d.11 Jun 40, 12 Sep 40, 20 Sep 40.
50. War Diary 8 AA Bty.,RCA, d. 15 May 41.
51. Letter OC Saint John Defences to HQ Atlantic Command, r.r./6-2 d.8 Sep 41.
52. HQS 20-1-12 Org. MR. 1(b) d. 1 Oct 41.
53. QS/040 letter DOC MD No.5 to NDHQ d. 24 Jun 40.
54. War Diary 14 AA Bty., RCA d. 14 Jun 41.
55. War Diary, 14 AA Bty., RCA d.14 Sep 41.
56. War Diary, 14 AA Bty., RCA d.11 Dec 41.
57. War Diary, 14 AA Bty., RCA d.26 Jan 42.
58. War Diary , 14 AA Bty., RCA d.24 Mar 42, 8 Apr 42.
59. H.Q.S.8538-7 Vol. 2, d. 13 Jan 42.

60. E.G. In ACS 11-0-4 d.27 Nov 41 the Joint Service Committee drew attention to the relatively much greater need for increased defences as compared with Saint John, N.B., and Gander Airport.
61. Narrator's interview with Brig. L.C. Goodeve, A/GOC-in-C., Atlantic Command, 12 Dec 44.
62. ACS 4-10 d.5 Oct 40.
63. HQS 8694 FD 678 (Oprs) d.13 Nov 40.
64. HQS 20-1-12 Org MR 1(b) d.1 Oct 41.
65. HQS 20-1-12 FD 4 Org MR 1(b) d. 15 Oct 41.
66. W.E. Cdn V/1940/327 M/1
67. WE Cdn V/1940/327/1
68. HQS 20-1-12 FD 12 (SD1) d. 18 Dec 41. The 5 AA Bty., for Gander was to be composed of active personnel. The 12AA Bty., for Arvida, would be French-speaking.
69. HQS 20-1-12 FD 12 (SD1) d. 18 Dec 41.
70. HQS 7018 FD 35 MR 1 d.21 Feb 42.
71. HQS 7018 Vol. 4 d.29 Oct 41.
72. 27 May 42.
73. HQS 7018 FD 52 MR 1 d. 27 May 42.
74. The anticipations were well founded. In December 1942 a DMO & P Memo to DSD (W) states that "3.7 inch guns are at present being received faster than personnel are available to man them." - HQS 7506-6 Vol. 1, d. 7 Dec 42.
75. CGS Memo to Minister d.12 Feb 42 on HQS 7018 FD 35 (DSD).
76. The dates of authorization of the new units was as follows:
- (i) 41 AA Bty, 45 AA Tp, 46 AA Tp, -16 Apr 42 HQS 7018, FD 46 MR 1.
 - (ii) 48 AA Bty, - 10 May 42, HQS 7018 FD 49 MR 1.
 - (iii) 49 AA Bty, 50 AA Bty, 51 AA Bty, 52 AA Tp, 53 AA Bty., 54 AA Bty., -27 May 42, HQS 7018 FD 52, MR 1.
 - (iv) 55 AA Sec, 56 AA Bty, 57 AA Bty, - 3 Jun 42, HQS 7018, FD 97 MR 1 (MOB 502).
77. Note (b). Appendix to HQS 7018 FD 46 MR 1 d.16 Apr 42.
78. Meeting No.75, Joint Service Committee, d. 5 Jun 42., File ACS 10-10.
79. WE for 4 Coast Bty, RCA (Mispec), Cdn V/1940/322 D/1, d.1 Aug 42. Page 4, note (a) stated that personnel for the AA Sections were not to be provided until authorized by NDHQ. See also WE for 6 Coast Bty, RCA (Lingan), Cdn V/1940/322 F/1 d.1 Aug 42; WE for 51 Coast Bty RCA (Devils), Cdn V/1940/324 A/1 d.1 Aug 42; WE for 54 Coast Bty., RCA (Chebucto), Cdn V/1940/324 B/2 d.1 Nov 42; etc
80. HQS 7018 FD 52 (Oprs) d. 19 Mar 42.

81. The original five, authorized to full strength on 1 Oct 41, were the 1,6,7,8 and 14 AA Btys.
82. The AA Staging Camp (Ser887) at Debert was authorized by the AG on HQS 7018 FD 35 MR 1 d. 21 Feb 42, and its establishment of 4 offrs and 61 ORs was made effective 1 Apr 42, HQS 7018 Vol. 6 MR1 Mob 455 d.20 May 42. On 15 Jun 42 the Staging Camp moved to Aldershot, ACS 5-10-0-11 d. 27 May 42.
83. ACS 5-10-0-11 d.27 Feb 42, and HQS 7018 FD 35, MR1 d.21 Feb 42.
84. CD&AA Progress Report d.28 Jan 42, HQS8538-10 Vol.1.
85. Ibid, d. 4 Feb 42.
86. Vol. 2 d.25 Feb 42.
87. Statement to Narrator by Maj F.J.Irwin, O.C., 146 AA Bty. (formerly OC Heavy AA Wing, A-23).
88. The 12 AA Bty., with 7 offrs and 312 ORs left Debert 4 Jun 42, arriving at Arvida two days later. War Diary, 12 AA Bty., RCA., d.6 Jun 42.
89. War Diary, 4 AA Bty., RCA., d.30 Sep 42.
90. The 16 AA (MG) Bty manned twelve U.S. .5AA machine guns at Gander from Apr 41 to Mar 42.
-ACS 10-4-0-0 d. 4 Mar 41.
91. War Diary, 5(later 105)AA Bty., RCA, d.29 Apr 42.
92. The following cadres completed training on 30 Apr 42:
40 mm guns: 24,25,26,27,28,29,30 Btys, AA.
3.7" guns: 7,14,15,16,18,19,20 Btys, AA.
- CD & AA Progress Report d.14 Apr.42 HQS 8538-10Vol.1.2.
93. Appendix "A" issued with HQS 7018 FD 52 MR 1. d. 24 Apr 42 shows the following distribution from training Centres to AA units in Atlantic Command.

	FROM	TO							TOTAL
	4	12	16	18	24	25	27	30	
	AABty	AABty	AABty	AABty	AABty	AABty	AABty	AABty	
A.1 (Petawawa)15)	90	137	43	66	20	41	4		416
A.2. (Petawawa)23)			15	55		95	158		346
A.23. (Halifax) 51			79	41	47				218
<u>TOTALS</u>	<u>89</u>	<u>90</u>	<u>137</u>	<u>137</u>	<u>162</u>	<u>67</u>	<u>136</u>	<u>162</u>	<u>980</u>

94. AA Units Concentrating at Debert during May and moving in June to their respective stations were as follows:
40 mm guns: 24 AA Bty to Sydney, 25 AA Bty to Saint John NB, 27 AA Bty to St.John's, Nfld., 30 AA Bty to Goose Bay.
3.7" guns: 14 AA Bty to St.John's, 18 AA Bty to Arvida (pending arrival of 41 AA Bty), 16 AA Bty to Gander (where its personnel were absorbed by the 17 AA Bty).
-CD & AA Progress Report 16 Jun 42 HQS 8538-10 Vol. 3.

95. Training cadres whose units did not immediately concentrate were the 15 AA Bty (H) authorized for Goose Bay, 19 AA Bty (H) for Halifax, 20 AA Bty(H) for Shelburne, 26 AA Bty (L) for Shelburne, 28 AA Tp (L) for Botwood and 29 AA Tp (L) for Lewisporte. While the 15 AA Bty concentrated at Wright's Brook, (vacated by the Heavy AA Wing of A-23), and moved to Goose Bay before the end of July, the formation of the other batteries was long delayed. On 1 Oct 42 the 19 AA Bty, whose cadre had been attached for further training to the 1 AA Bty at Burnside, was brought up to strength, and placed guns in action at Prince's Lodge and Navy Island Cove Sites on either side of Bedford Basin (War Diary, 19 AA Bty d. 14 Nov 42). Formation of the 20 AA Bty did not take place until the spring of 1943, when, after successive cancellations of intended operational roles at Shelburne and Goose Bay, it relieved the 1 AA Bty at Halifax in June (ACS 11-0-4, d.13 Apr 43). The 26 AA Tp completed formation at the Artillery AA Reinforcement Camp at Bedford (originally the AA unit Staging Camp) in November 1942 (ACS 5-10-0-11-10 d.12 Nov 42), moving into operation at Shelburne on 27 Nov. The cadres for the 28 and 29 AA Troops moved to Bedford on 16 Dec 42 (War Diary, Arty AA Reinforcement Camp d.16 Dec 42), but it was not until the following June that the batteries reached Botwood and Lewisporte respectively.
96. Cadres for the 41,45 and 46 AA Btys trained at A23 during May and early June; for the 48,49,50,51,52,53 and 54 AA Btys during June and July; for the 55,56 and 57 AA Btys, from mid-July to the end of August, From CD & AA Progress Reports, HQS 8538-10 Vol. 3.
97. Memo DMO & P to DSD (W), recommending that AA Training Schools be provided with more equipment. HQS 7506-6 Vol. 1, d. 7 Dec 42.
98. CD & AA Progress Reports, HQS 8538-10. Vol. 2 d. 18 Jul 42.
99. HQS 8538-7 d. 30 Sep 42.
100. For Atlantic Command 39 AA Btys; for Pacific Command 21 .
101. DM&R Memo to DAG (A). HQS 7018 FD 76 MR 1. d.7 May 42.
102. Completion of the 6 Div and mobilization of three Bde Gps of the 7 Div were authorized on 18 Mar 42.
-CGS Memo to the Minister d.24 Mar 42 HQS 20-1-25.
Completion of the 7 Div and mobilization of three Bde Gps of the 8 Div were authorized on 21 May - HQS 20-4-25 MR1.
103. Information regarding the Heavy AA Wing of A23 was supplied to the Narrator by Maj. F.J. Irwin, former OC of the Wing.
104. CD & AA Progress Report, d. 31 Oct 42, HQS 8538-10 Vol. 3, shows 3.7" at Torbay and 40 mm Bofors at Shelburne, Botwood, St.John's and Bell Island, awaiting personnel to man them.

105. Ibid. d. 15 Jan 43.
106. Appx II to ACS 11-0-4 d. 15 Sep 43, on
HQS 7506-3 Vol. 3.
107. CGS Memo to Minister d/22 May 42. HQS
7018 FD 61, Vol. 10. The recommendations
of the GOC-in-C, Atlantic Command followed
earlier proposals submitted to him from
lower formations in the Command. In Nov
41 Col. C.S. Craig, Commander Halifax For-
tress urged the amalgamation of all AA
guns and AA Searchlights in the area into
an AA Regt, in order to centralize all AA
defence units under one head, and produced
sound operational and administrative organi-
zation (HFS 1-5 d.16 Nov 41). Maj. Gen.
L.F. Page, GOC Cdn Tps Newfld, urged the
establishment of an AA Regt HQ, or the
appointment of an AA Staff Officer at
Force HQ. He pointed out independent
AA Batteries lacked the provision of sub-
units or detachments normally in Regimental
or Brigade establishments (e.g. Signals,
Ordnance and Survey personnel) -
WFS 3-4-19-1, d. 12 Mar 42.

108. Mob 513, HQS 7018, FD 61, MR 1 d.6 Jun 42.

109. Effective dates for the formation of AA
Regts were as follows:

HQ 21 AA Regt	1 Aug 42
HQ 22 AA Regt	8 Sep 42
HQ 23 AA Regt	16 Aug 42
HQ 24 AA Regt	
HQ 25 AA Regt.	13 Aug 42
HQ 26 AA Regt	18 Aug 42

110. Original grouping of AA units in Atlantic
Command by Regiments is shown in Appx "A"
to HQS 7018 FD 61 MR 1 d.6 Jun 42 as follows:

Area and Location	Unit	Type	Personnel	
			Offrs	OR s
<u>Halifax Area</u> Halifax	HQ 21AA Regt		7	36
	1 AA Bty	2H	12	326
	18 AA Bty	2H	12	326
	19 AA Bty	2H	12	326
	49 AA Bty	H	6	171
	4 AA Bty	4L	14	320
	2 AA MG Tp		2	31
	1 AA S/L Bty	12Lights	7	220
			<u>72</u>	<u>1756</u>

<u>Saint John Area</u>		HQ 22AA Regt		7	36
Saint John		8 AA Bty	2H	12	326
		25 AA Bty	2L	7	167
	Moncton	46 AA Tp	L	3	77
	Gaspe	53 AA Bty	H	6	171
	"	52 AA Tp	L	3	77
				<hr/>	<hr/>
				38	854

<u>Sydney Area</u>		HQ 23 AA Regt		6	36
Sydney		6 AA Bty	H	6	171
		50 AA Bty	2H	12	326
		51 AA Bty	2H	12	326
		24 AA Bty	4L	14	320
				<hr/>	<hr/>
				50	1179

<u>Arvida Area</u>		HQ 24 AA Regt		6	36
Arvida		17 AA Bty	M	6	159
		41 AA Bty	2H	12	326
		12 AA Bty	4L	14	320
		3 AA S/L Bty	12Lights	7	220
				<hr/>	<hr/>
				45	1061

<u>St. John-Torbay Area</u>		HQ 25 AA Regt		7	36
St. John-Torbay		14 AA Bty	H	6	171
		54 AA Bty	2H	12	326
		27 AA Bty	2L	7	167
		48 AA Bty	2L	7	167
	Bell Isl.	55 AA Sec.	L	2	44
		16 AA Mg Bty	-	-	-
				<hr/>	<hr/>
				41	911

<u>Gander Lake Area</u>		HQ 26 AA Regt		7	36
Gander Lake		7 AA Bty	2H	12	326
		5 AA Bty	2L	7	167
		2AA S/L Bty	12Lights	7	220
	Botwood	56 AA Bty	H	6	171
	"	28 AA Tp	L	3	77
	Lewisporte	57 AA Bty	H	6	171
	"	29 AA Tp	L	3	77
				<hr/>	<hr/>
				51	1245

111. The AA Bty at Yarmouth came under the command of O.C. No. 60 CA(B)TC - Para 3(b) ACS 5-10-0-11-35 d. 17 Oct 42; at Shelburne and at Goose Bay the O.C. Shelburne Defences and the O.C. Goose Bay Defences were responsible for the AA Units in their respective areas.

112. ACS 5-10-1-1 d. 13 Apr 43.

113. ACS 5-10-0-11-35 d. 17 Oct 42.

114. Grouping of A.A. Regts.

Maj. Gen. Elkins (GOC-1n-C) and Brig. L.C. Goodeve, (BGS) were strong advocates of placing all the A.A. Regts into an A.A. Bde. commanded by a Brigadier. This view is outlined in H.Q. letter A.C.S.5-10-0-11-35 d/19 Nov 42 addressed to N.D.H.Q.

Such an arrangement would parallel closely the set up in Eastern Air Command. R.C.A.F. proposals for air defence (Appendix "B" to ACS 5-10-0-11-35 d/21 Oct 42) showed that R.C.A.F. control was centralized in two main groups, i.e. a group H.Q. at Eastern Air Command, Halifax, and one at St. John's, Nfld (No.1 Group R.C.A.F.). It was considered that A.A. grouping from a geographical and co-operative point of view should conform.

Colonel J.S. Muirhead of the British Army Staff, Washington, had recommended on discussion the appointment of a Brigadier to command the A.A. Regts.

An Appendix submitted to N.D.H.Q. showed an A.A. Bde. H.Q. at Halifax under which were grouped the A.A. Regts at Halifax, Saint John (including Moncton and Gaspé), Arvida, Shelburne (including Goose Bay) and Sydney, with a separate A.A. group H.Q. under the Bde. 2 1/c stationed at St. John's in control of the Regts at St. John's and Gander.

The Anti-Aircraft of the New England Sector, U.S.A., followed the Bde system. The chain of control was Eastern Defence Command to A.A.A. Command to 46 Bde A.A. This Bde controls all A.A. units for tactics and training. For other purposes they came under New England C.A. Sector.

46 Bde operated a central G.O.R. tied in to the Air Corps Filter Centres. The G.O.R. was located in the same building as the Fighter Command Operations Room. It controlled all A.A. Artillery and covered the whole of the New England Sector.

With Atlantic Command having parallel boundaries to Eastern Air Command similar co-ordination between A.A. Arty. and R.C.A.F. appeared logical.

These recommendations to NDHQ were not concurred in.

115. HQS 7018 FD 145 (MR 1) d. 6 Aug 42, and GO 332/42 w.e. 1 Jul 42.

116. Record of AA Units, Halifax Fortress. d. 18 Dec 44 Prepared for Narrator.

117. HQS 7018 FD 145 (MRL) d. 6 Aug 42.

118. Ibid. para. 4 Interim War Establishment used was Cdn V/1940/326B/1. Strength returns for June 1943 showed GOR's in Atlantic Command well below strength as follows: No.1, 5 offrs & 250 ORs; No.3 0 & 0; No.4, 1 & 9; No.5 2 & 14; No. 7, 3 & 0; No. 8, 5&6.

119. Authorized by G.O. 103/43, w.e. 15 Jan 43.

120. Authorized by G.O.199/43 w.e. 1 Apr 43. See also War Diary, 10 AA GOR d. 16 Jul 43.

121. CD & AA Arty Progress Report, HQS 8538-10 Vol. 2, d. 18 Aug 42.
122. "Telephone Circuits to A.A.O.R. Appx "C" 1 - Policy and Regulations for Fixed Signals Services in Canada.
123. Duties of a GDO, Memo DGAA to D. Pers. HQS 20-4-12-B (DGAA) d. 11 Dec 43.
124. HQS 20-1-12 Org MR1 b. d. 1 Oct 41.
125. HQS 20-13-12-1 FD 49 (DOS.TS) d. 13 Oct 41 directed that the 12 AA searchlights and generators for Newfoundland Airport (Gander) be made available for training purposes at Halifax, until emplacements were ready at Gander.
126. HQS 20-1-12 FD 7 MR 1 d. 8 Nov 41.
127. GO 301 d. 15 Jun 43, w.e. 1 May 43.
128. HS. 80-2-3, 21 Aug 40.
The 5 obsolete lights were built by Dobson and Barlow in 1918. Of the modern 60 in. lights, one was a Sperry (U.S.) model, the other was a War Office pattern equipment, built by Rushton and Hornsley.
129. "We had the satisfaction of knowing we played a major role in helping one lost crew to find home, thus probably saving two lives and a quarter of a million dollars worth of aircraft." War Diary 5 Special Mobile AA S/L Tp RCA, d. 30 Jun 43.
130. No.12 AA Searchlight at South-East Passage was so sited in conjunction with Devil's C.A. Bty.
131. From notes supplied to Narrator by Col. C.S. Craig, O.C. Halifax Fortress. 29 Nov 44.
132. Cdn V/1940/328 T/1 d. 10 Jun 42.
133. ACS 10-5-0-11-32 d. 2 Jul 42, and GO 289/42, effective 10 Jun 42.
134. 5 Spec Mob AA S/L Tp. Daily Order No.1 d/8 Jul 42.
135. Daily Order No. 14 d/17 Aug 42.
136. Daily Order No.25 d/9 Sep 42.
137. CD & AA Progress Report d/17 Oct 42, HQS 8538-10 Vol.2
138. Moves of the 5 Spec Mob AA S/L Tp were as follows:
To Debert, 7 Oct 42; Pennfield Ridge, 7 Nov 42; Greenwood, 4 Dec 42; Debert, 1 Feb 43; Greenwood, 7 May 43; Pennfield, 9 Jun 43; Greenwood, 20 Aug 43; Unit War Diary, same date.

139. 5 Spec Mob AA S/L Tp RCA - War Diary d.31 Aug 43.
140. Ibid.
141. Ibid. d/22 Jul 44.
142. MD 6 Admin. Order No.19 d/27 May 41., shows the 16 AA S/L Tp leaving Halifax 3 Jun 41 for Saint John's. Appx B to War Diary 16 AA (MG) Bty RCA d/ Oct 42.
143. War Diary 16 AA (MG) Bty d/21 Oct 42.
144. Ibid. d/21 Apr 42.
145. Ibid. d/20 Mar 42 and 23 Jun 42.
146. WFS 5-1-4 d/30 Oct 42. Appx D to War Diary 16 AA (MG) Bty RCA d/ Oct 42.
147. Joint Services Committee, 89th Meeting, 5 Oct 42.
148. ACS 11-0-4, d. 7 Oct 42.
149. CSC 100 d 4 Feb 43. The review requested by the Chiefs of Staff Committee was to take into consideration:-
(a) "Existing manpower situation and necessity for economy in that respect.
(b) The effect on the AA plan of the recent decision of Chiefs of Staff regarding withdrawal allotment of four 3.7" guns from isolated areas not constituting attractive targets for high level bombing.
(c) Possibility of dispensing with allotment of 40-mm guns to certain aerodromes of secondary importance and of reducing allotment of 8 guns to 6 in the case of some of the other aerodromes and VPs.
(d) The existence of a mobile L.A.A. Regt., 48 guns in each Command and the possibility of employing in specific operational roles certain sub-units thereof not required to be held permanently as part of the respective general reserves."
150. ACS 11-0-4 Vol. 5 D/3 Mar 43.
151. HQS 7018, FD 224 D. 23 Mar 43.
152. HQS 7018 FD 201 (Oprs) d.23 Jan 43. See also Extract from Military Reports on the United Nations, No.2, d.15 Jan 43. Military Intelligence Service, War Dept. U.S.A., on HQS 7018 Vol. 13, d. 23 Jan 43.
153. Personnel of the disbanded 57 AA Bty in process of organizing at Bedford AA Reinforcement Camp went to bring the 29 AA Bty (Type L) for Lewisporte, up to strength.

154. For General Staff approval of these changes see HQS 7018 FD 201 (Oprs) d. 5 Feb 43.
155. ACS 11-0-4 d.15 Sep 43. Appx I.
156. ACS 11-0-4 d. 13 Apr 43.
157. At Morris Lake and Russell Lake.
158. The 20 AA Bty moved to Goose Bay on 3 Jul 44.
159. It will be recalled that the four 3.7" equipments received from the War Office early in 1940 were on static mounts (see para 28). In 1943 when the full allotment of mobile guns became available, it was the intention of the Fortress Commander to place these static equipments at McNab's Island (where mobility would be of no advantage.) Before construction work had been completed on the sites orders were received to place four mobile guns on McNab's Island. This apparent incongruity is explained by the fact that the McNab battery became the practice site for all heavy AA units in the Halifax area, and the resultant expenditure of barrels necessitated the use of the Canadian-made guns. -(From Record of Anti-Aircraft Units, Halifax Fortress, d.18 Dec 44, as supplied to Narrator by Col. C.S. Craig, Fortress Commander).
160. The 19 AA Bty put four guns into action at Prince's Lodge site on the west side of Bedford Basin on 14 Nov 42, and four at Navy Island Cove, on the East side, in July and August 1943.
161. HQS 7018 FD 52 MR 1 d.1 Apr 42. The battery moved to Arvida from Debert on 10 Jun 42, returning to Halifax on 5 Aug 42.
162. The 18 AA Bty put four guns in action at Purcell's Cove in Sep 42, and four at Rockhead on 3 Feb 43.
163. ACS 5-10-0-11-20 d. 23 Apr 43.
164. From March to October 1942 the 4 AA Bty RCA styled itself the 4th Cdn A/A Bty (L) RCA, to distinguish itself from the PF unit of the same number that had gone overseas with the 2 LAA Regt after serving in Halifax from the outbreak of War until the end of 1940. The unit's PT I Order No 2 d.23 Mar 42 instructs that all mail shall be addressed care of the 4th Cdn A/A Bty (L) RCA, and all battery orders are so subscribed until Pt I Order No 26 d 2 Oct 42, which is signed by the OC, 4 AA Bty (4L), - a change which coincided with the formation of the 21 AA Regt RCA. NDHQ authority for the designation has not been discovered.
165. GO 412/1943 redesignates the following units effective 1 Sep 43
- 5 AA Bty RCA to 105 AA Bty RCA
25 AA Bty RCA to 125 AA Bty RCA
46 AA Bty RCA to 146 AA Bty RCA
48 AA Bty RCA to 148 AA Bty RCA
54 AA Bty RCA to 154 AA Bty RCA

166. The round trip by rail from Saint John to Gaspe occupied a week, and could not be undertaken very frequently. The Commander Gaspe Defences writes to HQ Atlantic Command in April 1943, "It was hoped that the O C, 22 AA Regt RCA would visit Gaspe before this report was submitted so that he could have more accurately assessed the standard of training reached by these units. Hence this report was delayed until the last minute to get the benefit, if possible, of more expert advice." G.D.S.4-10-0-3 d.29 Apr 43.
167. The Reduction in Operational Troops in Canada, effected in October and November 1943 removed the Bofors troops at Yarmouth, Shelburne and Gaspe. Appendix "C", CGS Memo to the Minister, HQS 20-1 FD 110 d.30 Aug 43. See also para 140 below.
168. At Loch Lomond site and Beaconsfield, NE and SW respectively of the Harbour.
169. The 25 AA Bty arrived at Goose Bay from Saint John on 1 Jul 43. The 30 AA Bty arrived at Saint John from Goose Bay on 9 Jul 43. -War Diary HQ 22 AA Regt RCA (on dates given).
170. From interview with Capt D.A.Schofield, HQ Atlantic Command 24 Nov 44 formerly Adj. 22 AA Regt RCA.
171. The 30 AA Bty left Saint John for Goose Bay on 23 Jun 44. The 125 AA Bty arrived at Saint John from Goose Bay in two flights on 17 Jun and 16 Jul 44. -War Diary HQ 22 AA Regt RCA (on dates given).
172. Disbandment of 22 AA Regt w.e. 5 Sep 44 --War Diary HQ 22 AA Regt, RCA, d.31 Aug 44.
173. J/C 5-1-2-3 over J/S 1-5-6 d. 14 Aug 44 effected the reduction of the 125 AA Bty to a troop (Type L) W.E. 31 Aug 44.
174. The 50 AA Bty sites were at Cosset Lake and South Bar; the 51 AA Bty sites were at Jacksonville and the Wireless Station behind North Bar.
175. The 6 AA Bty arrived at Goose Bay 2 Jul 43, and returned to Sydney on 17 Jul 44. War Diary, 6 AA Bty RCA, both dates.
176. Reduction of the 24 AA Bty to 12 gun strength was effected on 1 Nov 43. Narrator's interview with Capt. A B Ferguson, Adj. 23 AA Regt 15 Dec 44.
- 177.(1) The 27 AA Bty left St John's for Sydney on 17 Mar 44.- War Diary 27 AA Bty RCA d.17 Mar 44.
(11) The 24 AA Bty left Sydney for St John's on 13 Mar 44.- War Diary 24 AA Bty RCA d.13 Mar 44.
178. 2 offrs and 60 ors of "C" Tp 24 AA Bty, left Sydney for Goose Bay on 7 Jul 44 - War Diary 27 AA Bty RCA, d. 20 Jun, 7 Jul and 11 Jul 44.
179. From records of Lt Bryan, AA Armament Officer, HQ Atlantic Command, supplied to Narrator, 28 Nov 44.
180. HQS 20-4-12 FD 25 (Org A1 c) d.5 Dec 44.

181. Appointment of Commanding Officers of the 23 AA Regt RCA were:
Lt-Col R F Capel 16 Aug 42 to 18 Mar 44
Lt-Col I B MacCallum 25 Mar 44 to 31 Dec 44.
182. As in effect at the end of 1943. Cdn V/1940/326/1 with Amdts 1 to 9.
183. Arvida Defences "Situation Report for week ending 15 Jan 44", Commander's remarks, A.R.S 5-5-2 d. 3 Feb 44.
Correspondence between the Commander, Defended Area Arvida and DOC MD 5 early in 1944 urged the need for a new War Establishment for "An Area and a Headquarters Anti-Aircraft Regiment RCA, Defended Area-Arvida", which would replace the existing HQ AA Regt establishment (7 & 42) and substitute a strength of 8 offrs and 89 ORs.
184. War Diary QG 24 Regt DCA, ARC, d. 6 Juin 42.
185. Prior to Lt-Col Samson's arrival, 4 Jul 42, Maj (later Lt-Col) I B Mac Callum had been acting commander of the Arvida Area.-War Diary QG 24 Regt DCA ARC d.5Juil42.
186. The 70 LAA Bty of the 8 LAA Regt RCA, part of the 4 Arm'd Div stationed at Sussex, sent two troops to Arvida on 6 Apr 42 to relieve the Bofors role of the 14 AA Bty on its move to Newfoundland (see para 36). The two troops of the 70 LAA Bty returned to Sussex on 6 Jun 42, and proceeded overseas with the 8 LAA Regt at the end of July -- War Diary 8 LAA Regt RCA, d. 6 Apr 42 and 6 Jun 42.
187. The 12 AA Bty had 8 Bofors in action by 15 Jun 42, 10 by 15 Aug 42, 12 by 31 Aug 42, and 16 (ultimate scale) by 18 Sep 42.- Progress Reports HQS 8538-10.
188. The 18 AA Bty arrived at Arvida 9 Jun 42, and was relieved by the 41 AA Bty on 3 Aug 42. - War Diary HQ 24 AA Regt RCA.
189. War Diary QG 24 Regt DCA ARC d.15 Mai 42.
190. CD & AA Progress Report, HQS 8538-10 d.4 Nov 42.
191. 53 AA Bty reached Arvida on 15 Jun 43 with four 3.7" guns, which were taken over by the 17 AA Bty. On 28 Jun four more 3.7" guns arrived from Ordnance, to complete the scale. On 2 Jul 43 the four 3" 20cwt. guns that had been manned by the 17 AA Bty were shipped to Ordnance MD No 5, to be forwarded later to Sault Ste. Marie. War Diary HQ 24 AA Regt RCA (Entries on dates given).
192. ACS 1-2 d.21 Jun 43. This amended AC Oper. Inst. No 60 d.29 Mar 43, under which the tactical command of Arvida Defences were exercised directly by the GOC-in-C. The amendment was embodied in AC Oper Inst No 6 D d.30 Sep 43.
193. QS/063 (Pers.C) AA & QMG MD No 5 to Comdr. Arvida Defences d.8 Jul 43, and HQS 20-1-12-1 FD 78, HQS 20-1-12-8 FD 23, d.6 Jul 43.
194. HQS 20-4-12 (SD 1) d.27 Apr 43.
195. A battery of Type 2LS represented two four-gun troops plus a section of two guns, and carried an establishment of 9 offrs and 189 other ranks.

196. Conversion and redesignation of 12 AA Bty effective 15 Oct 43. HQS 20-4-12-1 Vol. 1 AG to GOC-in-C, Force "W", d. 15 Oct 43.
197. HQS 8538-10 d.7 Sep 43, and War Diary 60 AA Bty d.8-18 Aug 43.
198. GGS Memo to Minister, "Reduction in Operational Troops in Canada", Appx "C". HQS 20-1 FD 110 d.30 Aug 43.
199. The 17 AA Bty left Arvida on 6 Oct 43 (War Diary 63 AA Bty d.6 Oct 43), and embarked at Halifax on 25 October. -HQS 8538-10 d.31 Oct 43.
200. Note on organization of 26 AA Regt (FS), from file AA 6-2-0 (Org) on ACS 5-10-0-11-35 Vol.2 d. Nov 43.
201. War Diary, 24 AA Regt RCA, d.23 Jul 44.
202. Ibid d.15 and 16 Aug 44.
203. Ibid d.11 Oct 44.
204. Ibid d.31 Dec 44.
205. Ibid d.15 Jan 45, and HQS 20-4-12 (Org AII C), Org 426, d. 27 Dec 44.
206. Synoptic Precis of Reports on Defence of Newfoundland Inspector General Militia d.2 Aug 40. On Narrator's file NA 2-5-2-1.
207. HQS 20-2-12-1 (Ops) d.17 Feb 41, and WF 236 Force "W" to Atlantic Com'd d.3 Feb 41. Appx 4 to War Diary HQ Force "W" Feb 41.
208. ACS 10-4-0-0 d.4 Mar 41.
209. War Diary, HQ Force "W" d.25 Apr 41.
210. WFS 11-3-1 d.6 Feb 41. Appx 6 to War Diary, HQ Force "W" Feb 41.
211. WFS 45 Force "W" to Atlantic Comd d.5 Jul 41. Appx 10 to War Diary, HQ Force "W" for July 41.
212. War Diary 7 AA Bty RCA d. 17 Dec 41.
213. ACS 11-0-4 (A1) d.19 Jun 42, and Progress Report, HQS 8538 - 10 Vol. 2 d.20 Mar 42.
214. Laid down by the GOC Force "W" at a meeting with Ocs Regts, 5 Oct 42. War Diary 25 AA Regt RCA, Appx A Nov 42.
215. GO 256/1942.
216. War Diary HQ 25 AA Regt RCA, Nov 42. Appx A.
217. HQS 20-4-12-1-B (DSD) d. 31 Mar 42. "E" Tp, 102 LAA Bty, 8 LAA Regt RCA moved from Sussex to Force "W" 4 Apr 42, at the same time that two troops of the 70 LAA Bty went to Arvida. The troop returned to Sussex on 8 Jul 42. War Diary, HQ 8 LAA Regt RCA, d.4 Apr 42.

218. War Diary 25 AA Regt RCA d.21 Dec 42.
219. By the end of July 43 the 48 AA Bty had eight Bofors in action around the Torbay Airport, with Bty HQ at North Camp.
220. By the end of February 1943 the 54 AA Bty had four 3.7" guns at South Camp and four at Kenny's Pond, two miles north-west of St. Johns. HQS 8538-10 d.28 Feb 43, and Operational-Location Statement St Johns, Nfld, d.21 Jun 43.
221. The 14 AA Bty moved from North Camp Torbay to Pennywell Road, St. Johns, on 11 May 43 - War Diary HQ 25 AA Regt, RCA, d.11 May 43.
222. War Diary 55 AA Sec RCA d.28 Dec 42.
223. From OC's Standing Orders. Appendix to War Diary, 55 AA Sec RCA, d. Jan 43.
224. HQS 7018-FD 52 Oprs d.5 May 42 and 29 Jul 42 Also GS 0396 d.1 Aug 42.
225. War Diary HQ 25 AA Regt RCA, d.6 Jul 43.
226. ACS 5-10-0-11-29 d.28 Sep 43, and War Diary 55 AA Bty RCA, d.31 Oct 43.
227. See Extracts, Proposal for Joint US -Cdn GOR, from personal diary of Maj Gen L.F. Page, Narrator's file, NA 2-5-2-2.
228. SCMA/5/54 d.30 Apr 43. Maj Gen Archibald, DGAA, to Comd. Force "W".
229. Intelligence Summary No.5 AA GOR d.15 Dec 42, appx A to War Diary HQ 25 AA Regt RCA, Dec 42.
230. Actually more than a year was to elapse before the move was finally made on 4 Apr 44. - War Diary HQ 25 AA Regt, RCA, d.4 Apr 44.
231. Gen Page to GOC in C Atlantic Command. WFS 2-3-0, FD 1, d.4 May 43.
232. Moves were made on 16 Dec 43. Weekly situation Report, AAS 25-1-7 d.18 Dec 43, - Appx B to War Diary HQ 25 AA Regt, RCA d. Dec 43.
233. War Diary HQ 25 AA Regt RCA d.11 May 44. The site was variously called South Side Hills, Black Head Hills, and Blackhead Road Site.
234. Ibid. d. 29 Feb 44.
235. Ibid. d.13 Mar 44.
236. Ibid. d. 23 Aug 44. The 148 AA Bty took the eight guns out of action on 14 Aug 44 (See 179) Date of disbandment was 31 Aug 44. War Diary 148 AA Bty RCA, same date.
237. Lt-Col R F Capel assumed command of the 25 AA Regt RCA, on 19 Apr 44.

238. Appreciation, Air Defence Atlantic Coast by Inspector General R C A F d.9 Jun 40. HQS 7410, Vol. 1.
239. Unnumbered cypher telegram from Governor of Newfoundland to External Affairs d.25 Jun 40 HQS 7410 Vol.1.
240. Instructions to OC QORC (who succeeded 1 Bn Black Watch) HQS 7410, Vol.2 d.29 Jul 40.
241. Gun position shown on Battery Defence Scheme, Appx to Weekly Intelligence Report YRS 3-4-0 d.30 Apr 42, Appx D to War Diary 7 AA Bty RCA Apr 42.
242. The originally planned composition of the 26 AA Regt included the 2 AA SL Bty, the 56 AA Bty (H) for Botwood, and the 57 AA Bty (H) for Lewisporte. Formation of the Searchlight battery was deferred indefinitely (see para 70), while the heavy batteries for Botwood and Lewisporte were disbanded while still in the cadre stage when it was decided to discontinue HAA defence for isolated VPs (see para 81).
243. Tele.Q3641 d.18 Aug 42, Atlantic Command to Defensor, refers to the return to the US Army of four 3. in AA guns on 1 Aug, eight.5AA machine guns on 19 May and four on 24 Jun, and states that five AA searchlights would be turned over about 1 Sep 42.-ACS 11-7 (Q.L.)
244. Progress Report C & AA Defences HQS 8538-10 Vol.2 d. 17 Oct 42.
245. Effective 1 Sep 43, HQS 20-4-12-B (Org A1G) d.8 Oct 43.
246. The 28 AA Bty arrived at Botwood with four Bofors on 14 Jun 43 - From Unit War Diary of same date.
The 29 AA Bty reached Lewisporte on 16 Jun 43 - From Unit War Diary of same date.
247. Progress Report C & AA Defences, HQS 8538-10 Vol.3 d. 7 Jul 43.
248. War Diary HQ 26 AA Regt RCA d.22 Aug 43. The "Defence Scheme, Gander Area", Appx D to War Diary HQ 26 AA Regt RCA d.26 Oct 43, reports the 56 AA Bty in a non-operational role at North Camp.
249. Ibid, d.11 Nov 43.
250. HC 21-3-1-2 (A2) d. 2 Dec 43.
251. "Air activity has been great during the week due to good weather conditions. Between 1905 hrs 23 Apr 43 and 0300 hrs 24 Apr 43 sixty-five B17's took off from this field for the United Kingdom. These planes have been arriving here in small groups every day." - Weekly Intelligence Report, GAS 3-4-0 d.25 Apr 43, Appx "D" to War Diary, HQ 26 AA Regt RCA d. Apr 43.
252. Gander Area Defence Plan, d.26 Oct 43 - Appx "D" to War Diary, HQ 26 AA Regt RCA, d Oct 43.
253. HQS 20-4-12-1 Vol. 6 SD 1172, d.13 Oct 43.
254. Lt-Col Plamondon assumed command of 26 AA Regt w.e. 3 Nov 43, and OC Canadian Army Troops, Gander, w.e. 4 Dec 43 - AC 6-1-2-1-1 (A) d.11 Nov 43.

255. The OC 26 AA Regt, Lt-Col Plamondon, complained of the shortage of time allowed for re-organization of the regiment. The 61 AA Tp and the 52 AA Tp while still in an operational role had to move to Valcartier on four days' notice. Units delayed in reposting officers to the new Regiment. A request for post-ponement by a week of the date set for movement from Valcartier to Bedford was refused, and as a result many of the personnel failed to be granted embarkation leave.--See letter from Lt-Col Plamondon, AA 6-2-0 on ACS 5-10-0-11-35 Vol 2, and notes on Narrator's file NA 2-4-0-26 R.
256. The 52 AA Bty relieved 105 AA Bty. War Diary HQ 26 AA Regt, RCA d.4 Dec 43.
257. Disbandment of the 7 AA Bty was completed at Bedford on 30 Nov 43. HQS 20-4-12-1 (Org AIG) d.19 Nov 43.
258. War Diaries, HQ 26 AA Regt RCA, 28 AA Bty RCA, and 29 AA Bty, RCA, d.17 Dec 43.
259. GO 80/1944 effective 25 Jan 44. Disbandment of the 28 AA Bty was completed at Bedford on 14 Jan 44 (Unit War Diary of that date), and final disposal of all ES personnel of the 29 AA Bty was effected by 20 Jan 44 (Unit War Diary of that date).
260. The two batteries left Botwood and Lewisporte on 29 Oct 44. (War Diary, HQ Defended Port of Botwood, d.29 Oct 44.) They sailed from St Johns on 4 Nov 44 - War Diary AA & QMG Force "W" for that date.
261. Joint Planning Sub Committee of Chiefs of Staff Committee, Memo "Northwest River Aerodrome Defence", HQS 8860-1 undated.
262. A Canadian, Eric Fry DLS, discovered the aerodrome site in July 1941. - Report, "Information Regarding Northwest River Area, Labrador", by Eric Fry DLS, d.10 Jul 41.
263. "Report on the Establishment of the RCAF Detachment at Goose Bay, Labrador, from September 1941, to March 1942". RCAF War Diary, Vol. 1, 4-21.
264. HQS 8860-1 FD 7. Memo by DMO & I "Goose Bay & Rigolet", d.18 Apr 42.
265. Directorate of Public Relations, Release No 1634 d.15 May 43, by P/O W A Shields, RCAF Public Relations Officer.
266. War Diary Goose Bay Defences d.16 & 24 Jun 42.
267. For composition of the Goose Inlet Garrison see HQS 8860-1 FD 11, d.18 Apr 42.
268. War Diary, Goose Bay Defences, d.24 Jul 42.
269. Operational Location Statement, Goose Bay Defences, ACS 10-0-1 d.15 Apr 43.

270. War Diary HQ Goose Bay Defences, d.16 Aug 42, and 24 Sep 42.
271. "We received definite information that at least one ship the "Donald Stuart" which was carrying all our refrigeration plant was gone." - War Diary HQ Goose Bay Defences, d.6 Sep 42.
272. War Diary, 15 AA Bty RCA d.31 Dec 42.
273. Ibid, d. 5 Dec 42.
274. Ibid d.1 Jun 42.
275. Ibid. d1 Jul 42.
276. Operational Location Statement, Goose Bay Defences, ACS 10-0-1 D.17 Aug 43.
277. W.E. for HQ Goose Bay Defences Cdn IV/178/1, notified in GO 448/43 eff 1 Sep 43.
278. War Diary No 10 AA GOR RCA d.17 Aug 43.
279. A circular letter, ACS 11-0-4 (Arty) d.13 Apr 43, directed to all AA Regiments in Atlantic Command, considered that batteries should not be considered in action in an operational role unless they were provided with early warning equipment, and trained in the use of such equipment to enable them to engage unseen targets.
280. Relieving AA batteries arrived in two flights, on 1 Jul and 11 Jul 44, and outgoing batteries left on the same dates.- War Diary, HQ Def Area Goose Bay d.1 and 11 Jul 44
281. Ibid d.1 and 2 Oct 44.
The 15 AA Bty, the 20 AA Bty and No 10 AA GOR were reduced to nil strength on 15 Nov 44. - HQS 20-4-12-1-B (Org A1C2) d.3 Nov 44.
282. War Diary, 45 AA Tp RCA, d.9 Jun, 13 Jul, and 31 Aug 42.
283. Ibid. d. 1 Nov 43.
284. War Diary, 26 AA Tp RCA d.17 and 27 Nov and 3 Dec 42.
285. Ibid d.6 May 43.
286. Guns were taken out of action on 10 Oct 43. Disbandment was completed on 25 Oct 43 - War Diary 26 AA Tp RCA final volumes.
287. HQS 20-4-6 d.18 May 42.
288. The 6 LAA Bty was formed on a nucleus of 17 NCO's from the 1 Bn Rocky Mountain Rangers, the 7 Bty was recruited from Toronto, the 8 Bty drew its personnel from the Pictou Highlanders and the Prince Edward Island Highlanders, while the 9 Bty came from London. - War Diary 10 LAA Regt RCA, d.18 May 42.
289. Ibid d. 30 Sep and 3 Nov 42.

290. War Diary 10 LAA Regt RCA d. 8 Jun 43.
291. Progress Report, C & AA Defences, HQS 8538-10 Vol 3 d.5 Aug 43, and War Diary 10 LAA Regt RCA d.11 Jun and 13 Sep 43.
292. War Diary 10 LAA Regt RCA d.13 Sep 43.
293. Ibid. d.11 Aug and 4 Sep 43. See also para 95 of narrative.
294. Ibid. d.27 Oct 43.
295. DGAA to DMO & P HQS 8538-10 FD 11 Vol 3 d.13 Oct 43.
296. A GL IIIC set, one of the first five manufactured in Canada, was put in operation by the 41 AA Bty at Arvida on 8 Mar 43. Another of these early sets was being used at the Wireless Wing of the CD & AA Arty Training Centre in May 43.- Progress Report, HQS 8538-10 Vol 3 d.17 Mar and 5 May 43.
297. Progress Report HQS 8538-10 Vol 3 d.7 Dec 43.
298. In July 1944 there were 19 GL sets for 25 gunsites. In all cases sites without radar equipment were those that formed part of a defence system of three or more troops operating under an AA GOR.- Monthly Report, Operational State - AA Defences, HQS 8538-7 V.4 d.20 Jul 44.
299. The Stiffkey Stick's ratio of efficiency in comparison with the Kerrison Predictor has been unofficially suggested by experts as being two to five.- HQS 7018 FD 120 (DSD 5) Vol 10 fol.111 d.17 Jun 42.
300. For 124 Befors in operation in Dec 43 there were 103 Kerrison No 3 Predictors and 95 Stiffkey Sticks. In addition the 18 gun LAA Trg Bty at No 1 Trg Bde was equipped with 18 Stiffkey Sticks. - Progress Report HQS 8538-10 Vol 3 d.7 Dec 43.
301. The only exception was the 125 AA Bty (Type 3L) at Goose Bay, which had six predictors for twelve guns. - HQ 8538-7 Vol 4 Oprs. d.20 Jul 44.
302. War Diaries of anti-aircraft batteries in Atlantic Command frequently sound the note of disappointment when practice shoots are cancelled because a towing-plane was not available. The following example from the diary of the 15 AA Bty may be considered reasonably typical.
- "30 Aug 43, Westmount (Sydney) N S. Preparations are going forward for a "shoot" tomorrow. This will be the first time our men have fired at a dregue. (The battery had then been in action at Goose Bay for more than a year.)
- 31 Aug 43. Rain in the morning. The weather cleared at noon and it was a fine afternoon, but there was no report on the plane.
- 1 Sep 43. We are to fire on 2 Sep 43 at Glace Bay.
- 2 Sep 43. All preparations for firing were completed by 0730 hours. The Bolingbroke is still out of commission. As it stands now, we are to fire tomorrow.....Word came through late at night that the Bolingbroke was recalled to Halifax. That finishes our shooting for a while, very disheartening."