ON THE PERIMETER: A RECONSTRUCTION OF THE MILITARY GEOGRAPHY OF NEWFOUNDLAND AND LABRADOR DURING THE SECOND WORLD WAR, 1939-1945

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ON THE PERIMETER: A RECONSTRUCTION OF THE MILITARY GEOGRAPHY OF NEWFOUNDLAND AND LABRADOR DURING THE SECOND WORLD WAR, 1939-1945

by

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ABSTRACT

Since 1940 Newfoundland has witnessed a considerable change to its cultural landscape. One of the major contributors to these changes has been the military, especially during the years 1940 to 1945. Although the military has been a significant factor in the development of the landscape, the literature on this aspect of our historical geography is almost non-existent. This thesis is an effort to fill this lacuna and provide an understanding of the military geography of Newfoundland and Labrador during the Second World War and its enduring impact on the landscape.

During the inter war years, there was no permanent military presence in Newfoundland. This was to change in 1940 when the United States, Canada and the United Kingdom made decisions for their own strategic and national interests, with little or no input from Newfoundland. The resultant military buildup extensively modified the Newfoundland landscape. The benefits, mainly in the form of social capital, are still evident throughout Newfoundland today.

This thesis is structured in three parts. In part one the geopolitical reasons why the military forces of three foreign countries came to Newfoundland are documented. In part two the military geography of Newfoundland is reconstructed by documenting

the spatial and temporal patterns of military activity on the landscape. The third and final part documents the significant and enduring impact of the military on the landscape of the province.

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ABBREVIATIONS

AACS	Army Air Corps Signals
AP	Air Photo
BR	Bomber Reconnaissance
B-17	American Boeing four engine long range bomber
B-24	American Consolidated four engine long range bomber
Can.	Canadian
Can. A.	Canadian Army
C-54	American Douglas four engine long range transport
DE & L	Department of Environment and Lands
DOSCO	Dominion Steel and Coal Company
FM	Frequency Modulation
GN	Government of Newfoundland
HMCS	His Majesty's Canadian Ship
HMS	His Majesty's Ship
J & D	Justice and Defense, Commission of Government Department
LORAN	Long Range Aid to Navigation
MM	Millimeter
NATO	North Atlantic Treaty Organization
NEF	Newfoundland Escort Force

NF	Newfoundland
NLPA	Newfoundland and Labrador Provincial Archives
POL	Petroleum, Oil, Lubricants
PU	Public Utilities, Commission of Government Department
P-38	American, Lockheed twin engine fighter escort
RAFFC	Royal Air Force Ferry Command
RCAF	Royal Canadian Air Force
SS	Steam Ship
U-Boat	German Designation for Submarine-Unterseeboote
US	United States
USAAF	United States Army Air Force
USAF	United States Air Force
USN	United States Navy
USS	United States Ship (Naval)
UST	United States Transport (Naval)
VE-Day	Victory in Europe Day
WLEF	Western Local Escort Force
WOMP	West Ocean Meeting Point

INTRODUCTION

This thesis has three goals: to reconstruct the geopolitical reasons why the military forces of three foreign countries came to Newfoundland; to reconstruct the military geography that evolved by documenting the spatial and temporal patterns of military activity on the landscape; and to discuss the post-war impacts of the military developments on the landscape. Once these goals have been achieved, it will be possible to answer the question of whether the military developments during the years 1940-1945 had any significant long-term impacts on the cultural landscape.

The spatial and temporal aspects of military activity have not been as extensively studied as many of the other fields of human geography. Traditionally, military geography has concerned itself with the tactical problems associated with the offensive and defensive movement of military forces in relationship to topography. The standard work by Cole (1950) is a physical, economic and human geography of the British Empire written from a military perspective. Its primary emphasis is on the effects of topography on the spatial movement of military forces. Later works by Peltier and Pearcy (1966), and O'Sullivan and Miller (1983) continue the study of the military implications and considerations imposed on strategic and tactical decisions by topography. A more recent work

(McManners (1987)) provides a micro-scale reconstruction of the effects of topography on the 1982 British ground campaign to recapture the Falkland Islands.

Within the last decade however, there has been a change in the way in which military geography is perceived. Contemporary geographers have expanded the theme of military geography by using research techniques from human geography to study the impacts of military activity on the physical, social, or economic landscape (Lotcin (1984), Pepper and Jenkins (1985), Ashworth (1989)). Most of this literature has been concerned with modern activity and focuses on the local or regional economic impacts of the defense industries (Bateman and Riely 1987), the implications of nuclear war, (Mieczkowski 1985, Openshaw 1982 &1983) or strategy and geopolitics (Cohen (1973), House (1984), Farington (1986 &1989)).

The documentation of past military activity has been left almost exclusively to historians. A review of the literature indicates that there has been little research by geographers into the historical reconstruction of the impacts of the military on the landscape. The study of military activity by historical geographers has been almost nonexistent. The study of agriculture, migration and settlement has consumed most of the research. Alan William's (1987) work Father Baudoin's War which reconstructs the French Raids in Newfoundland during the winter of 1696 -1697, is one of

the few examples in historical geography of the reconstruction of a military campaign. It also appears to be the only one that concerns Newfoundland.

Historians have produced a considerable literature pertaining to the general history of the North West Atlantic during the Second World War. By their very nature these works are of a narrative nature and do not include any substantial coverage of the military establishments in Newfoundland. The official military histories focus on the units and men who were involved. Works by Craven and Cate (1964) for the United States Army Air Force, Morison (1964) for the United States Navy, Douglas (1986) for the Royal Canadian Air Force, Stacey (1948) for the Canadian Army, and Tucker (1952) and Schull (1961) for the Royal Canadian Navy, are all examples of official histories that document the operational history of a particular service. In addition to the official histories there are numerous personal narratives written by military personnel that served in the North West Atlantic during the Second World War. Works by West (1976), Lamb (1979), and McVicar (1981) are just a few of the numerous personal narratives that touch on Newfoundland. Unfortunately none of these official histories or campaign narratives provide a concise geographic portrayal of the domestic defense geography of Newfoundland during World War Two.

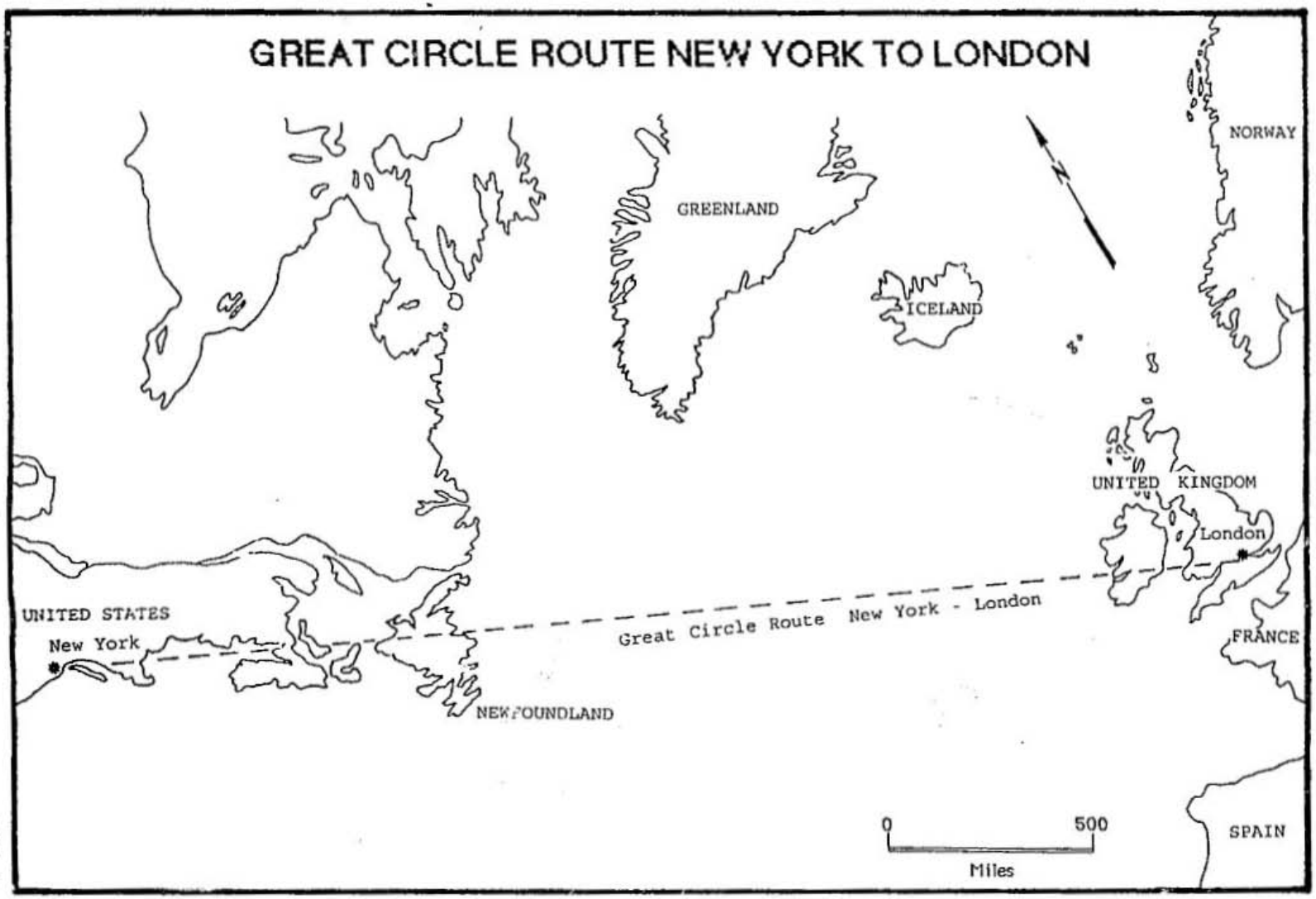
The Second World War and its impacts on Newfoundland and Labrador have not been the subject of much detailed research by historians or geographers. Works specifically about the geography of defense are rare. Two recent works by historians have highlighted the lacuna in the published literature pertaining to this period. In the preface to his book Newfoundland in the North Atlantic World 1929-1949 Neary (1988) writes that the period from 1934 to 1949 has not been the subject of much detailed investigation and has been a neglected part of Newfoundland's history. Narrowing in on the military aspects of this period, MacLeod (1986) notes that his essay is..." a more extensive treatment of the Newfoundland scene and situation than has previously appeared in print...". He also calls for more detailed research into the various aspects of the military presence during World War Two, specifically the spatial distribution of the bases and stations. To date this monograph represents the only attempt to address the impact of the military in Newfoundland during World War Two. MacLeod includes no reference to any research on the spatial and temporal distribution of military installations on the landscape and has discussed with the author the great difficulty he encountered in obtaining consistent, complete and reliable data on the spatial distribution of military installations.

During the interwar years there was no permanent military presence in Newfoundland. However, since 1940 there has been a continuous presence by the armed forces of several nations. The nationality, strength, composition and mandate have varied spatially and temporally depending on advances in technology and the changing geopolitics of the North Atlantic. This recent era of military tenure began with an intense period of development and operations during the Second World War. Geography and politics were the two factors that combined to make Newfoundland and Labrador strategically important to the military planners of the major North Atlantic nations during World War Two.

Cohen (1973) defines Geopolitics as "having to do with the world that matters": that is, what is important in the geography of power relations between the major powers of a period. After the fall of France in the spring of 1940, the major powers of the North Atlantic world were the United Kingdom and Germany in Europe and the United States in North America. Although the United States maintained a position of neutrality in the war between the British Empire and Germany until the end of 1941, her sympathies lay with the United Kingdom and she maintained a vested interest in sustaining the United Kingdom as an independent nation. The United States viewed Germany as her primary military threat and the United Kingdom as the front line of American defense. If the United

Kingdom had fallen, the United States would in all probability have been forced to confront Germany and possibly Japan alone. In the North Atlantic this combination of political factors, combined with Newfoundland's geographic position astride the Great Circle Route between American and the United Kingdom's core areas, placed Newfoundland in a militarily strategic position because geography had placed her within the world that mattered (Map 1). Jamieson (1989:30) states that "...in some respects Newfoundland's greatest contribution to the war effort lay simply in being there." It was the consideration of geographic location that led American, Canadian and to a lesser degree British military planners to focus on Newfoundland and Labrador in their military plans for the North West Atlantic. These considerations resulted in the enormously expensive decisions to establish military bases and stations throughout Newfoundland and Labrador. The subsequent military developments were so extensive and widespread that they had a considerable impact on the economic, social, cultural and physical landscape of the country.

Military histories and other sources use a variety of names to describe the same installation. The terms "base", "station", "installation" or "facility" may be used. For the purpose of this study only the terms "base" and "station" have been used. A base is defined as a major facility with greater than 100 personnel and an area more than 100 acres. Tenure of the bases was freehold,


GREAT CIRCLE ROUTE NEW YORK TO LONDON
NORWAY
GREENLAND
ICELAND
UNITED KINGDOM
London
UNITED STATES
New York
Great Circle Route New York - London
FRANCE
NEWFOUNDLAND
SPAIN
0
500
Miles

MAP 1

acquired either by formal treaty or lease. The user had unrestricted access rights to use, and freedom to operate. Examples of bases acquired by treaty were the American installations at Ft. Pepperrell near St. John's. Harmon Air Force Base near Stephenville, and the Argentia Naval Air Station and Fort McAndrew in Placentia Bay. The Canadian Air Bases at Gander, Goose Bay and Botwood were acquired through leases with Newfoundland.

A station is defined as a secondary or tertiary site of less than 100 acres and with under 100 personnel. These were predominantly single function sites that in the majority of instances were temporary in nature, and designed to provide operational support to one or more of the bases. Tenure arrangements were not as formal as in the case of the bases and was generally carried out simply by a formal agreement rather than a treaty or lease. Examples were the American radar stations at Elliston, Allen's Island and Fogo, the Canadian Naval repair facility at Bay Bulls, and the United States Coast Guard LORAN stations at Port aux Basques and Bonavista.

The methodology for this thesis is primarily one of chronological reconstruction. However it has sometimes been necessary to use a thematic approach in order to provide a clearer understanding of issues such as national strategy, individual base development and operations. For this reason the chronology of some

of the chapters overlap. This is particularly true in the chapters which describe the construction of the bases and stations. It is important to stress that this thesis does not attempt to provide a narrative of the operations of military units based in Newfoundland. Operations will only be discussed when they serve to illustrate the technical limitations that necessitated specific installations or impacted on strategy.

The majority of the data was collected through archival research, personal interviews, and field-orientated work which included studying air photos and the remaining relict features. Information from all sources has been combined to reconstruct as accurately as possible the military landscape which evolved during the Second World War.

The military developments during the period from 1939 to 1945 had a substantial impact on the cultural landscape of Newfoundland and resulted in extensive modifications to selected areas of the province. The cultural landscape is the artificial landscape created by cultural groups as they live on the natural landscape. It includes all modifications to the landscape created by man's activities. The noted French geographer Paul Vidal de la Blache stated "that one can read the landscape as we do a book. The cultural landscape... reflects our tastes, values aspirations and fears" (Jordan & Rowntree, 1986: 24-25). The military landscape of Newfoundland and Labrador was a reflection of both the values and

fears of the major English speaking nations of the North Atlantic during the Second World War. The values were to defend the democratic societies while the fears were manifested in the defense infrastructure put in place throughout Newfoundland and Labrador to defend against a possible attack by the Germans. This military activity was the result of American, Canadian and British decisions based on a consideration of their own national security and strategic interests. Newfoundland had no control over these decisions, most if not all of which were a function of Newfoundland's geographic location in the North Atlantic. The cultural landscape of the country was extensively modified as a result of these decisions. In addition Newfoundland was the beneficiary of a substantial investment of social capital which continues to greatly benefit the province to this day.

CHAPTER I

PRELUDE TO WAR: 1935-1939

NEWFOUNDLAND

In the late 1930's Newfoundland was a dominion of the Crown in abeyance. A Commission of Government consisting of a Governor and six commissioners all appointed by the United Kingdom, three of whom were Newfoundlanders, had replaced normal democratic government. This form of government was to remain in effect until Newfoundland became the tenth province of Canada in 1949. Geographically, Newfoundland shared the western North Atlantic with Canada, the United States and the French islands of St. Pierre and Miquelon off the southern coast of Newfoundland. The country was located off the east coast of North America and consisted of the island of Newfoundland which was 43,359 square miles and the mainland territory of Labrador, 100,000 square miles (Minister of Supply and Services, 1979). The island of Newfoundland is separated from Nova Scotia by the 90 mile wide Cabot Strait, and Labrador from Newfoundland by the 11 mile wide Strait of Belle Isle.

Like her neighbours, Newfoundland was adversely affected by the prolonged economic depression that had begun in 1929. The depression was more severe in Newfoundland because of the almost

total dependence upon the export of raw materials and the importation of manufactured goods and food. The backbone of the economy was the fishery and it was particularly hard hit. Exports of fish were severely reduced because the market countries were also affected by the depression. This contributed to economic devastation which had a profound effect on the financial affairs of the country. By 1933 the national debt was approaching 100 million dollars and the country was on the verge of bankruptcy (Neary, 1986:12). In 1934 the fiscal crisis resulted in the replacement of the elected government with a commission of government. Like much of the Western World the country remained in the grasp of the depression and by 1939, 50,000 residents were receiving welfare (MacKenzie,1986:30).

The population of 289,588 was found predominantly along the coast. The main spatial characteristic of settlement was its distribution in more than one thousand small villages nestled in the sheltered coves and harbours along the shores of the country's numerous bays. This pattern was a reflection of the importance of the fishery as the backbone of the economy. The few settlements that existed in the interior were involved with mining or forestry. The Avalon Peninsula, which contained the capital city of St. John's, was the most heavily populated region of the country with 148,190 or 47 percent of the population. With a population of 39,886 in

1935, St. John's was the only large urban center in the country (All figures from the 1935 Census of Newfoundland).

The ocean provided the main means of transportation. Besides common fishing boats there were numerous small freight boats, schooners and steamers that plied the coastal waters. These vessels provided the main linkage between many of the scattered villages and the larger towns that served as regional service centers. Internationally, steamships ran from St. John's to the United Kingdom and between St. John's, Halifax, Boston and New York. Regular scheduled steamship service between Port aux Basques and North Sydney, Nova Scotia, was the main link with Canada and served to connect the North American railway network with the Newfoundland railroad which was the second most important mode of transportation. The railway ran from Port aux Basques on the southwest coast, northeastward through Corner Brook, Grand Falls, Gander, and Clarenville to its eastern terminus in St. John's. Spur lines in central Newfoundland ran to Buchans in the interior and to Botwood and Lewisporte in Notre Dame Bay. East coast spur lines ran to Bonavista on the Bonavista Peninsula and to Argentia and Carbonear on the Avalon Peninsula.

The existing roads formed a tertiary system that was poorly developed, constructed and maintained. There was no country-wide network, only a haphazard system of small roads and roads extensions at the end of railway lines that had developed

independently of each other. The most extensive development was in and around St. John's, from which roads ran north, south, and west. The most highly developed system extended from St. John's around the bottom and up the west side of Conception Bay. Other roads ran north through Logy Bay, Torbay and Pouch Cove to Cape St. Francis on the north of the Avalon Peninsula and south along the southern shore of the Avalon to Trepassey.

Other unlinked road networks existed at many localized points throughout the country, most of which served to connect the populated areas to the railway. The most important of these were those running from Corner Brook to Deer Lake, Buchans to Millertown, Grand Falls to Bishops Falls and Botwood; and those in the general vicinity of Lewisporte, Clarenville and Bonavista.

Port facilities were available at many locations throughout the country but were limited by dock size, space and related services available, as well as the volume of cargo that could be handled. The major ports, all of which were served by the railway, were located at St. John's, Argentia, Harbour Grace, Bonavista, Botwood, Lewisporte, Corner Brook and Port aux Basques.

From a military perspective Newfoundland's civilian, industrial and transportation infrastructure was poorly placed and inadequately developed to support modern North American or European mechanized military operations. The existing civilian

water and sewer, roads, electricity and communications infrastructures would require extensive upgrading before they could support a military infrastructure. Any military presence, beyond the most rudimentary naval, air or land operations, would initially require base and support infrastructure construction and then an extensive maintenance program once the infrastructure was in place.

MILITARY PLANS AND STRATEGY

During the period from the end of the First World War in 1918 to the mid 1930's defense and its associated military activity did not have a high priority in the countries of the North West Atlantic. This was to change with the re-emergence of Germany as a military power in Europe. Defense now became a priority and concern about German rearmament became the main factor that governed the defense plans of the countries of the Northwest Atlantic. Newfoundland, along with the other countries of the Western Atlantic, viewed the re-emergence of German military power with great concern and with good reason. Her location in the North West Atlantic left her exposed to German naval forces and for the first time to the newly developing threat of airpower. The spatial separation provided by the Atlantic no longer provided a guarantee of isolation from European conflicts. (Dzcuban,1959:2).

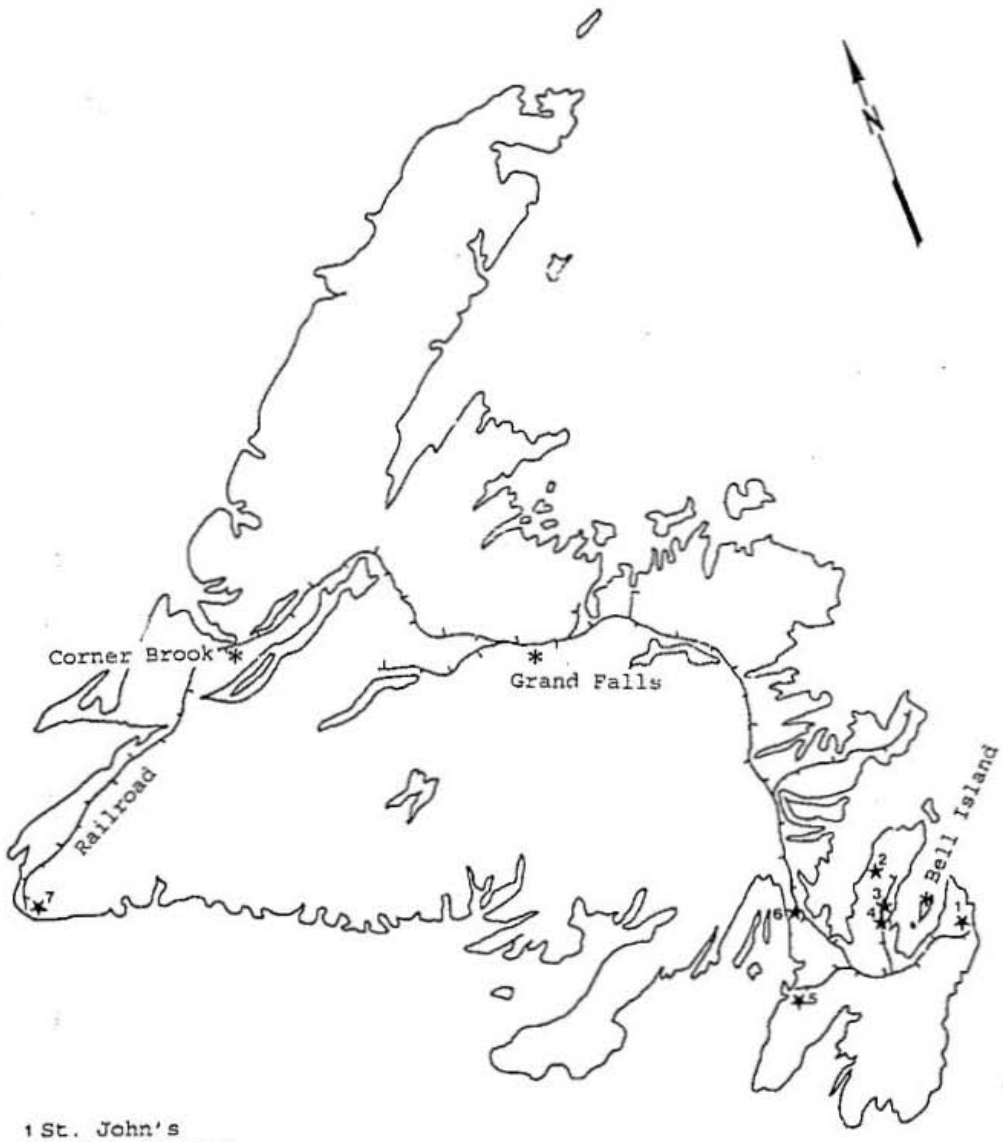
Newfoundland and the United Kingdom

Until the mid 1930's defense had not been of great concern to Newfoundland because she enjoyed the collective security afforded by membership in the British Empire. The country's lack of a military establishment was not unusual given that she enjoyed good relations with all of her neighbours with which she shared common cultural, economic and political ties. There was no military threat in the immediate area and none was anticipated. The Atlantic, controlled by the Royal Navy, effectively isolated and distanced Newfoundland from any potential enemies in Europe. Predominantly because of her geographic location, Newfoundland had not hosted Imperial troops since 1870, when the last British Garrison had been withdrawn (Stacey,1936:148-158). Because of the stable relations between the United States and the British Empire there was no military threat to Newfoundland. Since the withdrawal of Empire troops, Newfoundland's contribution to the Empire's security had been men for the armed forces of the mother country. During the Great War of 1914 -1918 a regiment of infantry had been recruited and served in France as a unit of the British Army (Nicholson, 1969). When the war ended, the Royal Newfoundland Regiment was demobilized and its men returned home along with the individual Newfoundlanders who had served in the various branches of the Empire's forces. Newfoundland did not maintain any active or

reserve military units and no military forces from any other country were stationed on her soil. The only vestiges of military activity were the periodic goodwill visits by units of the Royal Navy when they were in the North Western Atlantic.

The country's police forces, which consisted of 255 Newfoundland Constabulary members and 50 Newfoundland Rangers, were the only organizations that had even rudimentary military training. For the most part this was small arms and parade ground drill, hardly suitable for combat against the forces of an industrialized nation. Compounding the absence of trained personnel was the fact that Newfoundland was devoid of even the most basic military equipment. In 1934 at the insistence of the United Kingdom's Overseas Defense Committee the Commission of Government had commenced a study to determine the defense requirements of the country. Because of a lack of funds resulting from the economic depression and the low priority given to defense related matters in general, two years passed before the report was produced. This report, entitled The Newfoundland Defense Scheme, 1936 focused not on the defense of the population centers but on the infrastructure that would be a target in the event of a European war (Germany) involving the British Empire (NLPA GN1/3 320/35)(Map 2). This is indicative of the Government's opinion of the strategic value of Newfoundland and the overriding concept of fostering the

NEWFOUNDLAND DEFENSE SCHEME 1936



MAP 2

development of the Empire at the cost of ignoring local concerns. Major targets in the event of hostilities were considered to be the transatlantic cable installations at Hearts Content, Bay Roberts, Harbour Grace, St. John's, Arnold's Cove, Placentia, and Port aux Basques; fuel storage sites, St. John's harbour, the Bell Island iron mines, and the pulp and paper mills at Grand Falls and Corner Brook. The study concluded that an enemy in possession of Newfoundland could threaten Canada and the surrounding sealanes. The only major reference to population was a concern for the vulnerability of the inhabited portions of the country because of their openness to observation and attack from the sea. The report concluded that "the island is entirely undefended and vulnerable to attack from vessels armed with modern guns." Despite this conclusion the report remained silent on recommendations to provide a course of action to address these deficiencies in defense.

The report was shelved and for another two years no further action was taken. However, given the deteriorating situation in Europe, the question of defense was raised in 1938 by Newfoundland in discussions with the Office of the United Kingdom's Undersecretary of State for Dominion Affairs (NLPA GN1/3 320/35)[1]. While both parties agreed that Newfoundland was defenseless, there was disagreement on how to address the defense needs of the country. The United Kingdom's Ministry of Defense was

[1]Various telegrams between the Governor of Newfoundland and the Dominions Secretary. September to November 1938.

of the opinion that the expense of stationing a garrison in Newfoundland was not warranted given the more urgent defense needs of the British Isles and other countries of the Empire that were much closer to the source of hostile threats. Considering the absence of a local threat, the United Kingdom felt that the Royal Navy's continued command of the Atlantic Ocean would adequately serve the defense needs of Newfoundland (Bridie, 1974:18;27-28).

Historically the Royal Navy had always been Newfoundland's first line of defense and guarantee of sovereignty. For the first three decades of the twentieth century the only military threat to Newfoundland had originated in Europe, and for the foreseeable future this was not expected to change. The Royal Navy's unchallenged control of the vast Atlantic Ocean and the proximity to powerful neighbours in the United States and to a lesser extent Canada served to insulate Newfoundland from Europe and made the probability of war in the Western Atlantic appear highly unlikely.

The Royal Navy's principal Atlantic strategy centered on the protection of the United Kingdom. To accomplish this the navy's strategy was to interdict and defeat any European naval threat in European coastal waters before they could break out into the open waters of the mid-Atlantic (Roskill,1956). This strategy was based on the principle that it is easier to locate and engage an enemy in the narrow coastal waters of Europe than in the open Atlantic where

there was greater freedom to maneuver. By concentrating the main strength of the fleet in home waters instead of dispersing it thinly throughout the Atlantic, both the United Kingdom and Atlantic shipping lanes could be protected from German capital ships.

Another factor which contributed to the United Kingdom's decision not to maintain defense forces in Newfoundland was the existence of the American Monroe Doctrine. This 19th century doctrine held that the United States would not tolerate interference by another European Power in the affairs of any of the European possessions in the Western Hemisphere (Perkins,1942; Wilcox, 1942). Geography and the Monroe Doctrine thus afforded Newfoundland and Canada the protection of the United States. This protection, which was provided without consideration or consultation, effectively guaranteed that the United States would not allow foreign occupation of Newfoundland since this would constitute a serious threat to the United States and be an unacceptable alteration of the balance of power in the Western Atlantic. The knowledge that the United States would defend the Northwest Atlantic permitted the Royal Navy to concentrate in the Eastern Atlantic and other more threatened theatres of operation.

As the situation in Europe continued to deteriorate in the spring of 1939, Newfoundland and the United Kingdom moved toward concrete action for Newfoundland's defense. In May a request was

made to the Dominions Secretary to arm and train a light infantry force of 189 men for local defense (NLPA GN1/3 320/35)[2]. On June 26 the Dominions Secretary agreed to the establishment and arming of three companies of light infantry and on August 30th advised that the necessary small arms along with three regular army personnel to act as instructors, would be departing for Newfoundland on September 5, 1939. The Dominions Secretary further advised that the main points of defense should be the Bell Island iron mines and the City of St. John's, and that any detachments to guard the airport at Gander and the cable stations should be kept at a minimum (NLPA GN1/3 320/35)[3]. The United Kingdom continued to believe that Newfoundland would not be subject to a large scale attack and that only a token force would be necessary for the defense of Newfoundland.

Canada

Canada's Atlantic defense concerns and needs were similar to those of Newfoundland. She had no enemies on her borders and was isolated from any European enemy by formidable barriers of distance, ocean spaces and the power of friendly nations (Stacey, 1970:3). While this isolation had been an important factor

[2]Telegram from Governor of Newfoundland to Dominions Secretary, May 22, 1939.

[3]Telegram from Dominions Secretary to Governor of Newfoundland, June 26, 1939

underlying Canadian defense plans in the inter-war years, technology was slowly reducing the traditional benefits bestowed by distance. New developments in naval and particularly air technology had significantly reduced the spatial benefits provided by the Atlantic Ocean and made Canada and Newfoundland less isolated from Europe than ever before.

By the late 1930's there was growing apprehension in Canada, spurred on by the Munich crisis, about the rising military power of Germany (Stacey,1970:38). Canadian military planners responded by reassessing their defense plans and initiated further study of the defense of the Atlantic coast (Stacey,1970:29). The task of preparing plans for the Atlantic coast was complicated by the presence of Newfoundland, an island over which Canada obviously had no jurisdiction. However, because the island commanded both entrances to the Gulf of St. Lawrence and was in close proximity to the Maritime Provinces, the defense of Newfoundland was the key to the defense of Atlantic Canada from an overseas invader (Bridle, 1974:19;19-20). Simply put, Canada's maritime security could not be guaranteed unless Newfoundland remained secure. This inescapable fact bound the defense of both countries together (Bridle, 1974:3;12-13, Stacey, 1970:92-93). Therefore, Canada had serious reservations about the presence of an undefended island off her Atlantic coast. Her paramount concern was that an enemy might secure a lodgement in Newfoundland to attack Canada and her

coastal shipping using air, naval and submarine raiders. A secondary concern was the possibility of the disruption of shipments from the Bell Island iron mines to the Sydney steel plant. The latter produced a third of Canada's steel and was totally dependent upon Bell Island for her supply of iron ore (Bridle, 1974:14;24-25). Finally, Newfoundland was the home of important trans-Atlantic cable relay stations which were critical to communications between North America and the United Kingdom.

To prepare for the defenses of both countries, Canada's military planners initiated plans to integrate and co-ordinate Canada's Atlantic defense with the United Kingdom's defense of Newfoundland (Bridle, 1974;3;12-13). This proved to be no simple matter for at the Imperial Conference of 1937, Canada was to learn at that in the event of war the United Kingdom had only limited plans for the defense of Newfoundland and the Western Atlantic (Stacey,1970:92-93). The United Kingdom's principal concern would be the strategic defense of the North Atlantic using naval power. In an exchange of memos between the spring of 1938 and December of the same year, Canada was further advised that no British military units were designated for posting to Newfoundland in the event of hostilities, and no defense plans existed other than those required for the defense of St. John's harbour. When conditions permitted it a squadron of six minesweepers would be sent to the country.

Anti-submarine units would augment the minesweepers, but only when they became available (Bridle, 1974:18;27-28). Essentially Newfoundland was left defenseless.

There were never any formal negotiations between the United Kingdom and Canada concerning the defense of Newfoundland, although both sides realized that Newfoundland was geographically important for Canada's Atlantic defense plans and for the maintenance of the United Kingdom's trans-Atlantic communications. Other than periodic exchanges of information the United Kingdom had little direct contact with Canada on this matter and in fact encouraged Canada and Newfoundland to consult with each other on matters of mutual defense (NLPA GN 1/3 320/35). To this end in 1938 and 1939 representatives of both countries met several times and exchanged various memos on mutual defense matters (Bridle, 1974:12;22-23). At one meeting in April 1938 Captain C.M.R. Schwerdt, secretary to the Governor, met with Canadian officials to discuss matters of common defense (Bridle, 1974:12;22-23). At this meeting Canada was advised that the responsibility for the defense of Newfoundland rested solely with the Royal Navy (Bridle, 1974:14;24-25). Although both Canada and Newfoundland realized that Newfoundland was in a vulnerable position, and although neither considered the resources provided by the United Kingdom's Royal Navy sufficient to defend the North West

Atlantic, neither country initiated any concrete action to address the situation; Newfoundland because she did not have the resources and Canada because of her policy of noncommitment (MacKenzie, 1986:26-27). As a result of these attitudes, the North West Atlantic defense plans of all three countries, when war broke out in September of 1939, existed only on paper. Other than the Royal Navy's presence in the Atlantic, there was no military equipment in place to defend Newfoundland. The reality of the situation was that Canada and the United Kingdom were willing to defend Newfoundland only to the extent that it was beneficial to their own security (MacKenzie,1986:35).

United States of America

After the Treaty of Versailles officially ended the First World War, the United States moved toward a policy of isolation and non-involvement in European affairs (Langer and Gleason,1952:13). American military strategy for the North Western Atlantic continued to be based on the the Monroe Doctrine which was one of the oldest principles of American foreign policy. Its origins lay in a message to Congress on December 2, 1823, by then President James Monroe. His speech outlined the basic principle that the United States would not tolerate the acquisition of territory in the Western Hemisphere by European Powers (Perkins,1942:253-254). The doctrine was initially developed to prevent Spain's meddling in the affairs of the

newly independent Latin American republics which were her former colonies, but it later became firmly established as a fundamental component of American foreign policy. It was applicable to all European powers with or without New World possessions. In the ensuing years it was invoked at various times in response to European involvement and perceived involvement in the affairs of the Western Hemisphere. By the late 1930's the United States was again promoting the doctrine as a reminder to the European Powers that they were expected to maintain their distance from the Western Hemisphere (Wilcox, 1942).

Until the mid-1930's the United States had not placed great emphasis on the defense needs of either the Atlantic Coast or the North West Atlantic. The country had no Atlantic enemies and the major threat to American interests was perceived to come from Japan in the Western Pacific. The only potential Atlantic threat was Germany but given the double layer of protection provided first by the large French army and secondly by the combined strength of the British, American and French fleets in the Atlantic it was not felt that this threat was serious. Given this situation the United States placed her trust in the strength of the European fleets and moved the main strength of her fleet to the Hawaiian Islands to counter the growing threat of Japan in the Pacific (Langer and Gleason, 1952:104).

By the late 1930's the rearmament of Germany and her re-emergence as an European power became the cause of considerable concern. The increased international tensions and more particularly the Munich settlement between the United Kingdom and Germany in 1938 raised fears in the United States that she would be drawn inevitably into another European war, or that the involvement of the Axis powers in the affairs of the Western Hemisphere would lead to military confrontation.

These already ominous developments were compounded by the rapid improvements in the range and payload of military aircraft which added a new threat to the Western Hemisphere (Conn, et al.,1964:4). The advances in aircraft design had already been demonstrated by the large flying boats that began making regular scheduled flights between the United States and the United Kingdom in 1937 (Air Ministry, 1946). They had reduced the time of the Atlantic crossing even with refuelling stops in Ireland and Newfoundland, from approximately four days (by sea) to less than 24 hours. A more ominous development was the non-stop flight from Berlin to New York on August 10, 1938, of a Focke-Wolf Condor (Beaty,1976:134-135)[4]. Although these were civilian flights the potential military implications were not lost on the military or political leaders.

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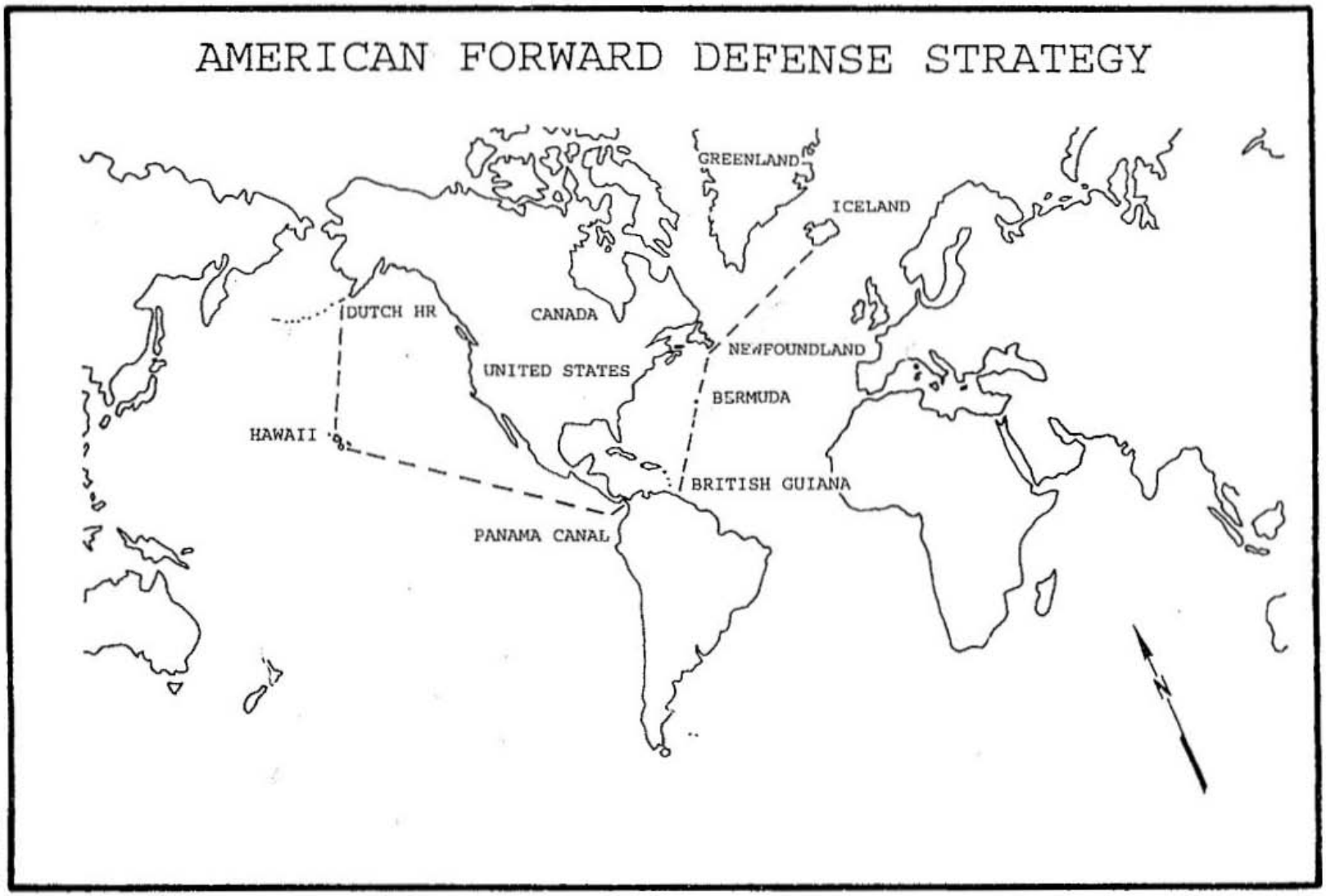
[4]This four engine land plane never became a threat as a heavy bomber because underpowered engines limited its payload. However it was to play an important reconnaissance and strike role in the convoy battles in the Eastern Atlantic.

In response to these rapidly emerging developments, American war planning began to take into account the resurgence of Germany. Existing defense plans were discarded in May 1939 and five new models were prepared to address new potential world conflict scenarios, with Germany as the major threat (Matloff and Snell,1953:4). By early 1940 the resulting plans, code-named Rainbow, had become the basis of American contingency planning. They had as their primary objective the defense of the United States and the Western Hemisphere, which had now become inseparably linked for defense purposes (Matloff and Snell,1953:12-13). They differed on the extent of the protection to be accorded the Western Hemisphere and/or the Pacific territories or potential allies in the event of war and the overseas deployment of American troops. Defense of the entire Western Hemisphere and not only the continental United States was seen as the best protection for the United States and her economic and political interests. The Western Hemisphere was defined as the continents of North and South America west to the Hawaiian Islands, Wake Island and American Samoa in the Pacific and the Atlantic Ocean to the 30th meridian (Conn et al, 1964:9).

Earlier American studies had concluded that there was no serious military threat to the United States in the Atlantic and one would only develop if France and Great Britain fell or were not involved in the war for one reason or another (Conn et al, 1964:27). But when German rearmament progressed to the point of becoming a

potential threat to the United States and her interests throughout the Western Hemisphere, the United States adopted a more aggressive defense policy based on the concept of forward defense, that would extend from the frontiers of the continental United States to provide protection to the entire Western Hemisphere (Watson,1950:88). Military planners concluded that the continental United States could not be threatened seriously by either air or surface attack unless a hostile power first obtained a lodgement within the Western Hemisphere. To prevent this the United States adopted a policy of hemispheric defense (Conn et al,1964:3) (Map 3). Instead of meeting an adversary on the borders of the United States or in the coastal waters, the United States now planned to intercept and join battle with the enemy at sea before it came within striking distance of the United States or established itself in the Western Hemisphere.

In espousing this policy President Franklin D. Roosevelt declared that "the United States must be prepared to resist attack on the Western Hemisphere from the North Pole to the South Pole, including all of North America" (Dzcuban,1959:3). The concept of hemispheric defense, although not the original intent of the Monroe Doctrine, represented a logical extension given the determination of the United States to protect both her territory and her economic interests (Conn et al,1964:3; Wilson, 1942:442).


AMERICAN FORWARD DEFENSE STRATEGY
GREENLAND
ICELAND
DUTCH HR
CANADA
NEWFOUNDLAND
UNITED STATES
BERMUDA
HAWAII
BRITISH GUIANA
PANAMA CANAL
N

MAP 3

The strategy of forward defense was primarily influenced by the vulnerability of the heavily populated Atlantic Seaboard. In a message to Congress on January 28, 1938 President Roosevelt defined this strategy when he stated "We must keep any potential enemy many hundreds of miles away from our continental limits" (Dzcuban,1959:4). In the Pacific this strategy was already in place since the early 1920's. The naval and air bases at Dutch Harbour in Alaska, Oahu in the Hawaiian Islands and the Panama Canal Zone provided a triangle of outposts to protect the Pacific coast (Map 3). The concept was to be applied to the Atlantic where until now it had not been necessary, given the overwhelming presence of the British and French fleets in relation to the small German navy. As this strategy became fully developed it was destined to have considerable implications for Newfoundland, which was now placed in the forefront of American plans for the Northwest Atlantic, not by choice, but by circumstances created by geography and the politics of other nations. Technical limitations of naval and air power required the acquisition of bases outside the United States to achieve this new forward strategy. These bases would permit American military power to extend its effective range into the mid-Atlantic. Newfoundland was ideally suited for such bases.

On August 18, 1938, the President emphasized American determination to defend all of North America and not just the United States. In an address at Queens University in Kingston, Ontario, he stated that "the people of the United States would not stand idly by

if the Dominion of Canada's soil is threatened by any other empire" (Wilson, 1942:442). While this reference specifically identified Canada, the previous statements of the President combined with the basic tenets of the Monroe Doctrine, along with American Foreign Policy and Defense Plans made it clear that in the event of an attack by a foreign power, Newfoundland could count on the same level and type of American support.

CHAPTER II

THE OUTBREAK OF WAR: EARLY PLANS AND OPERATIONS, SEPTEMBER 1939-AUGUST 1940.

STRATEGIC CONSIDERATIONS

On September 3, 1939, after diplomatic efforts had failed to halt the two-day-old German invasion of Poland, the United Kingdom and France honored their treaty obligations to Poland and declared war on Germany. For the countries of the North West Atlantic, the outbreak of war in Europe had an immediate impact. Defense, which had until now been a secondary concern, became the primary focus of all of the countries.

For Newfoundland participation in the war was automatic with the United Kingdom's declaration. Canada soon followed suit and entered the war on September 10, 1939. The United States remained neutral but was concerned that the war might spill into the Western Hemisphere and lead to American involvement. This was a real possibility given the active participation of Newfoundland and Canada and the existence of European possessions in the Western Hemisphere.

Historians have named the period from September 1939 to May 1, 1940 the "Phoney War." This phase of the war was characterized both in Western Europe and the North Atlantic more by posturing than by any significant activity between the combatants. The enemy did not make any substantial attempt to challenge the Royal Navy in the Atlantic and although it was generally recognized that Germany was a greater threat now than in the First World War, local defense plans proceeded with little urgency. France and the United Kingdom remained strong so the direct threat to northeastern North America was considered to be remote. In Canada and Newfoundland there was little urgency in the discussions about military readiness for home defense. Much of the military activity that did take place was directed towards preparing to support Britain in a European war.

In the first nine months of the war there was only a marginal increase in military activity in Newfoundland. Nevertheless, Newfoundland was the subject of extensive deliberations and planning by the defense departments of the United States and Canada. Both countries were in the process of rethinking their Atlantic defenses and Newfoundland figured prominently in their plans for the Northwest Atlantic. Canadian, the United Kingdom and particularly American military planners regarded the security of Newfoundland as central to the command and control of

the Atlantic. Newfoundland on the other hand was more concerned with its own defense. Military planners knew full well the military strength and capabilities of Germany and more importantly, the implications of recent advances in naval and air technologies. At the time Germany was in no position to threaten a full scale invasion of North America. However, it is obvious that with the resources available at her disposal she could do considerable damage to trans-Atlantic and coastal shipping and the coastal littoral of North America especially with naval and air power based in Newfoundland.

Conversely, the Dominion would serve as a valuable location from which to station forces tasked to protect the north east approach to North America and to protect the air and sealanes between North America and the United Kingdom. While the United States and Canada both recognized the military potential of Newfoundland, only the United States possessed the military power to integrate Newfoundland into the defense of North America. Even with the outbreak of war there had been no official collaboration between Canada and the United States on joint defense strategy. Both countries were still proceeding with plans independent of one another and, in the American case, without the knowledge or consent of Newfoundland. Considering the potential threat posed by

Germany, it is doubtful that Newfoundland would have rejected protection from friendly neighbours, even if it meant occupation by friendly forces.

Canadian Atlantic Defense Plans

From the beginning of the war Canada acknowledged the strategic importance of Newfoundland to her Atlantic defense. On September 3, 1939 following the United Kingdom's declaration of war on Germany, Prime Minister King in a speech to parliament stated that the defense of Newfoundland and Labrador was essential to the defense of Canada (Bridle, 1974:41;43). While King was only reiterating the strategic realities of Canada's Atlantic coast, the fact remained that Canada had neither formulated plans nor developed the personnel and equipment to defend Newfoundland. With no heavy naval units and only light air and ground forces, Canada was dependent on the United Kingdom and the United States for the defense of the ocean approaches to North America. While the United States considered the broader issue of the defense of the North Atlantic, Canada concentrated its attention on the defense of her Atlantic coastline within the strict confines imposed by her limited military resources. Local defenses were strengthened around the strategic ports of Halifax, Sydney and Saint John, and

coastal reconnaissance was increased by both naval and air units as far east as the west and southwestern coast of Newfoundland (Stacey, 1948).

Newfoundland Defense Preparations

During the so called Phoney War Newfoundland prepared for war in much the same manner as in 1914. Recruits were accepted for the Empire's armed forces and the local economy prepared to support the overseas war. There was no immediate threat of attack and from all appearances the conflict was expected to remain confined to Europe. Although the usual wartime anxiety existed, it was expected that the Allies would prevail as they had in the past. Newfoundland's main concerns centered around her own defense, influenced by Newfoundland's long standing reliance on the protection afforded by the Royal Navy combined with her inability to provide for her own defense.

Since the end of the last war in 1918, advances in naval and air technology had reduced the spatial and temporal defense advantages provided by the Atlantic. Recognizing the importance of Gander Airport and the Botwood flying boat base in the emerging world of trans-Atlantic aviation, Newfoundland was concerned about her inability to defend these air assets. If an enemy controlled

these assets they could be used to control the country and surrounding sealanes as well as provide a base to attack North America. To address these concerns, on September 15 the Newfoundland government suggested to the United Kingdom that Canada be permitted to take over Gander and Botwood for the duration of the war (NLPA GN1/3 39/1-17)[5]. On November 6th the Dominions Office Secretary finally replied that while there were no objections to Canada having full use of the facilities for the duration of the war, control should not pass to Canada because it could provide Canada an unfair advantage in post-war trans-Atlantic civilian air travel (NLPA S-5-5-2)[6]. Clearly the United Kingdom, confident about the outcome of the war, was more concerned with losing control over trans-Atlantic air travel than increasing Newfoundland's defense. For Newfoundland the attempt to transfer the air bases to Canada was motivated by two considerations. In addition to a desire to contribute to the allied war effort in one of the few ways possible, one can assume a secondary and not unimportant benefit of Canada assuming control of the air bases was that the ground and air units, that would be stationed at the bases, would provide the country with a greater degree of protection than Newfoundland could afford on her own. It appears that lacking the

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[5]Letter from Governor of Newfoundland to Dominions Secretary, September 15, 1939

[6]Telegram from the Dominions Secretary to the Governor of Newfoundland, November 6, 1939.

resources to provide for her own defense Newfoundland was attempting to provide for her defense by forging a link with Canada.

This was not the only way that Newfoundland attempted to provide for her own defense. In an attempt to solicit emergency supplies of arms and ammunition, L.E. Emerson, the Secretary of Justice, travelled to Canada and on September 17th met with senior military and government officials (NLPA S-4-1-1)[7]. The outcome of these meetings was that Canada pledged to loan sufficient quantities of small arms and ammunition to equip the Newfoundland militia then being formed for local defense.

On the home front the first concrete move toward defense was the placement of an anti-submarine net across the entrance to St. John's harbour on September 19th (NLPA S-4-1-1)[8]. Within two months of the outbreak of war, the Newfoundland Government had in place legislation pertaining to customs, trading with the enemy, and foreign exchange. The Newfoundland Militia Act of October 31, 1939 provided for the establishment of a volunteer auxiliary militia for home defense (Acts of the Honorable Commission of Government, 1939;245-347). This was followed on November 18, 1939 with the Forestry Unit Act to provide a corps of forestry workers for service in the United Kingdom. Because of the

[7]Memorandum by Secretary for Justice to the Commission of Government, September 30, 1939

[8]Telegram from Governor of Newfoundland to Commander in Chief American and West Indies Squadron RN, October, 19,1939

high casualties suffered by the Royal Newfoundland Regiment in the First World War, it was decided that an artillery regiment would be the primary combat unit raised for overseas service (Nicholson,1969). This decision was based on the logic that an artillery unit would not normally be subject to the same risks as an infantry unit. In addition to the two units for overseas service, volunteers were also accepted for the Royal Navy and the Royal Air Force. For home service patriotic associations were formed to support the fighting forces overseas. Their main efforts were directed towards collecting money and material for the troops along with items for the war economy such as scrap metal and clothing for shipment to the United Kingdom.

Although there was considerable legislative, social and economic activity related to the outbreak of war, from September 1939 until May of 1940, there was only a marginal increase in military activity in Newfoundland. The first Canadian military units to arrive came in October 1939 when RCAF observation aircraft landed at Gander Airport (Gander Airport Departure Logs). At the request of the Royal Navy, and with the agreement of the Newfoundland Government, the RCAF used Gander as a base from which to conduct a reconnaissance of the Newfoundland coastline. (Bridle, 1974:39;43) Not long after vessels of the Royal Navy and

the Royal Canadian Navy, now on a war footing in the North Atlantic, began using St. John's for refuelling and provisions.

In February and March 1940, L. E. Emerson, the Commissioner for Justice, once again travelled to Canada, this time not to solicit arms but to ascertain Canada's plans for Newfoundland's defense. He was especially concerned about the vulnerability of the Bell Island iron mines but also wanted to determine whether Canada intended to construct an airport near St. John's as a station for long range patrol bombers (NLPA S-4-1-1)[9]. The outcome was a disappointment for Emerson and dampened Newfoundland's hopes for large-scale military assistance from Canada. Canada was only prepared to provide a general reconnaissance of those parts of Newfoundland's southwest and west coast that directly affected Canada's sealanes (NLPA S-4-1-1)[10]. and to provide ordnance for the defense of Bell Island. The latter of course was critical for the Nova Scotia steel industry. Two 4.7 inch coastal defense guns and mounts and two searchlights along with three army personnel to train the Newfoundland militia would be provided as soon as possible (Bridle, 1974:66;66-67). Given Canada's own limited military resources and

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[9]Memorandum from the Commissioner of Justice to the Commission of Government, March 23 1940.

[10]Memorandum from the Commissioner for Justice & Defense to Commission of Government, March 16, 1940.

weakened strategic situation, no other assistance could be spared at the present time.

Upon learning that Canada had no immediate plans to defend Newfoundland, the Governor of Newfoundland on April 8, 1940 wrote the Dominions Secretary expressing his concerns about the lack of defenses in Newfoundland. The British Government at this time was preoccupied with other matters. Churchill had replaced Chamberlain and the Phoney War was nearing an end (Churchill, 1949). The Imperial Government's by now standard reply was that the Royal Navy was Newfoundland's first line of defense. "At the present time the naval authorities consider the risk of an attack upon Newfoundland, either by naval based raider or by submarine to be remote and in view of the other urgent requirements it would not be practical for them to provide special naval or air forces for patrol purposes... For the same reasons it is felt that provision of guns for the defense of St. John's or placing of mines could not be justified." The letter concluded that if Canada were to offer to defend Newfoundland then the offer should be accepted (NLPA GN1/3 320/35).

Newfoundland now found herself in the difficult situation of not only being unable to defend herself but also having no appreciable offer of assistance from either the United Kingdom or Canada for the foreseeable future. Against the background of the

collapse of Western Europe and the growing military strength of Germany, she now found herself defenseless and exposed to the possibility of a combined German naval and air attack.

American Defense Plans

The outbreak of war in Europe in September 1939 compelled the United States to reassess her security which spurred a review of potential threats to the continental United States. According to war model exercises carried out by the War Plans Division, the outbreak of war in Europe would not be a serious threat to the continental United States unless both the United Kingdom and France were defeated (Conn et al.,1964:27). While this was felt to be an unlikely event, it was within the realm of possibility and therefore had to be taken into consideration. The United Kingdom and France were considered as the first line of defense between North America and Germany. It was therefore in America's best interest that these nations remain strong because their continued existence and control of the Atlantic eliminated the possibility of a direct German attack, in force, on North America.

The United States' first response to the outbreak of war was the establishment on September 5th of the Neutrality Patrol, which was a picket line of destroyers that patrolled 300 miles seaward of the American Continent (Langer and Gleason, 1952:208).

The main purpose of the patrol was to emphasize to the belligerents, especially Germany, that the United States was determined to defend the Western Hemisphere. On October 2 the Neutrality Patrol was strengthened by the Act of Panama which reiterated the determination of the republics of North and South America to keep the war from the Western Hemisphere. The hemisphere was demarcated by a line along the 60 degree west meridian. Because the other republics did not possess the military resources, the United States Navy's Neutrality Patrol became the main instrument to enforce the neutrality zone. By the end of October the United States Navy had established a continuous patrol from Newfoundland to Trinidad (Morison, 1964:16).

The Collapse of Western Europe, June 1940

The sense of security that prevailed during the Phoney War was abruptly ended by the German blitzkrieg which overran and conquered Western Europe during May and early June of 1940. The strategic considerations for the North Atlantic were now dictated by the quickly unfolding events in Europe. By June 17,1940 the United Kingdom stood alone in Western Europe against Germany. The British Expeditionary Force, which contained the bulk of the army and almost all of its tanks and artillery had been forced to retreat

from France without its heavy equipment. In a period of eight months, the military balance in Europe had been completely redefined in favor of the Axis Powers led by Germany. France, Belgium, Holland, Luxembourg, Denmark and Norway had all been conquered. Only the English Channel, patrolled by the Royal Navy and the Royal Air Force, stood between Britain and the victorious Germans.

In the Atlantic the Royal Navy remained in control while the French fleet was no longer a cohesive fighting force and had withdrawn to bases in North and West Africa and the Caribbean (Churchill, 1949; Roskill, 1956). The future of both fleets was unsettled and the possibility remained that they could be neutralized through a peace treaty or pass to German control through conquest. Canada and the United States were equally concerned as to how much longer the United Kingdom could continue to fight. Control of the Atlantic was paramount to the defense of both the United Kingdom and North America. Against this background of defeat and retreat in Europe the United States, Canada and Newfoundland focused on their own defense plans for the Northwest Atlantic.

As the only nation with the strength to influence the balance of naval power in the Atlantic, the United States began to prepare for the worse possible scenario. France had surrendered and the final disposition of the French fleet was far from certain. If the French fleet passed to German control, contingency plans were

drafted to move the bulk of the United States fleet from the Pacific to the Atlantic (Watson,1950:110-111). This would be necessary because on April 15, 1939 the United States, depending on the United Kingdom's and France's control of the Atlantic had moved the bulk of the fleet to the Pacific as a counter to the growing naval strength of Japan (Langer and Gleason, 1952:104). As long as the United States maintained the bulk of its fleet in the Pacific Japan could not secure a lodgement in the Western Hemisphere. Conversely as long as the Royal Navy was in being and based in the United Kingdom then the Atlantic was secure (Conn,et al., 1964:9). Because of her dependence on friendly capital ships to control the Atlantic the United States had only maintained the minimum strength in the Atlantic to carry out the Neutrality Patrol (Conn and Fairchild, 1960:30). Aside from the final disposition of the French fleet the United States was equally concerned with the very survival of the United Kingdom. War Department estimates concluded that the United Kingdom could hold out against Germany for at least six months. It was also estimated that in the event the United Kingdom capitulated and surrendered the main portion of her fleet, it would take an additional six months for Germany to integrate the vessels into her own fleet (Conn et al., 1964:65). Therefore the United States had at least a year to prepare for any attack in force. Germany, Italy and possibly Japan, bolstered by components of the British and French fleets would then be

stronger than the combined strength of the American Atlantic and Pacific Fleets (Conn and Fairchild, 1960:35). Under these circumstances, the United States Navy would be heavily outnumbered and the Western Hemisphere would no longer be immune from attack. It was conceivable that by mid 1941 the hemisphere would be subject to invasion, with the most probable route of attack coming from the north east via Newfoundland (Conn et al., 1964:9). While this was obviously the worst case scenario it was a contingency for which the Defense Departments of both the United States and Canada had to plan. Events of the past nine months had proven that the old concepts of warfare were no longer valid and that worst-case scenarios unthinkable only a year previously were now a distinct possibility.

To address this possibility a new joint Army-Navy plan was adopted in May which aimed at preventing Germany from acquiring a foothold in the Western Hemisphere (Watson, 1950). Given such an ominous reality, American strategy was developed around the concept of forward defense which has been discussed in Chapter I. Following a successful model established by Rome during the days of Imperial power, it entailed defending the hemisphere as far forward as possible. To implement this strategy additional bases outside of the continental United States in British, French, Danish and Dutch possessions from Greenland to the coast of South America would be

required. In the event of an emergency the protective seizure of these Atlantic outposts was given active consideration. The trigger for such unilateral action would be the loss of the British fleet (Conn and Fairchild, 1960:66). These bases would serve the dual function of providing a line of outposts along the Atlantic frontier, similar to that which already existed in the Pacific, and deny Germany European overseas possessions for use as an Axis lodgement (Conn and Fairchild,1960:43). In addition to acquiring bases on the offshore islands, protecting the Panama Canal and its approaches was critical to American defense strategy because the canal permitted the rapid movement of the navy's capital ships between the Atlantic and Pacific Oceans.

Before the blitzkrieg in Europe had altered the balance of power, a study by the War Department in March 1940 identified Newfoundland, Bermuda, the Virgin Islands, Trinidad, the Cocos Islands and the Galapagos Islands as the only European possessions in the Western Hemisphere with any real military value (Conn and Fairchild, 1960:43). This was to change in May with the collapse of the western front. The United States was now galvanised into action with the realization that she could not depend on other nations to guarantee her security. By May 24, 1940 plans had been hastily prepared for the protective occupation of European possessions in the Western Hemisphere should this became necessary (Watson, 1950:477). Three days later, spurred on by the

rapidly deteriorating situation in Europe, the Army asked the State Department to make the necessary diplomatic arrangements with the British Government so that if necessary, American forces could quickly deploy to all British possessions in the hemisphere (Conn and Fairchild, 1960:47). On the diplomatic front, the State Department informed Germany and Italy on June 17th that the United States would not recognize the transfer of Western Hemisphere possessions such as the French and Dutch possessions in the North Atlantic, Caribbean and South America, from one European power to another (Wilcox, 1942:439). The foundation was now established both diplomatically and militarily for American expansion outward into the Atlantic to defend the Hemisphere.

The consultations that commenced between the United Kingdom, the United States and Canada during the spring of 1940 would provide the United States with access to offshore islands without the need for unilateral action. This was important for two reasons: first and foremost by working with the local governments the United States would not be perceived in the world at large as an aggressor. Secondly by securing the bases under lease there was no need to take over the total control of these countries which would be difficult both diplomatically and administratively.

DEFENSE ACCORDS

The tempo of diplomatic and military activity in the North West Atlantic quickened with the collapse of Western Europe in May and June of 1940. The stunning German victory shocked the Governments of Canada and the United States to move quickly to strengthen their defenses in the North West Atlantic, in the process the importance of Newfoundland was now greatly magnified (Stacey, 1970:154). The fall of Western Europe forced the United Kingdom into a defensive posture based in the the British Isles, with Germany recognized as the dominant power in Europe. For the United States and Canada the two primary military concerns were protecting North America and preventing the United Kingdom from being defeated. The reaction of the United States and Canada to the events in Europe now placed Newfoundland, because of her geography, "in the world that mattered" for the major powers of the North Atlantic and quickly became a focus of attention for military planners in the United States, Canada and the United Kingdom (Map 1).

Between early June and mid-September three major defense agreements were concluded: one between Newfoundland and Canada on June 16th, the second between Canada and the United States on August 18th, and the third between the United States and the United Kingdom on September 2nd. These agreements would have profound

implications for Newfoundland and Labrador both in the short and long term. They formed the basis for the military developments that occurred during the remainder of the Second World War and in some instances continue until the present.

The Canada-Newfoundland Emergency Defense Agreement

With the fall of Western Europe and the subsequent isolation of the United Kingdom, Newfoundland and Canada were faced with the realization that the United Kingdom, fighting for her very survival and facing possible conquest by Germany, could no longer defend Canada and Newfoundland and the approach to the Western Atlantic. Faced with this reality the two countries drew closer to address matters of mutual defense.

Canada realized the importance of Newfoundland's geographical position in relationship to her own Atlantic defense and the strategic value of the Gander and Botwood air bases in particular. To protect these valuable assets Canada offered on June 14, 1940 to move ground troops and aircraft to Gander to secure these facilities (Bridle, 1974:106;116). With Newfoundland's agreement two days later the RCAF dispatched a flight of five Digby patrol bombers to Gander for general reconnaissance and naval operations. These aircraft were the most modern aircraft in the RCAF and had only been recently acquired from the United States.

The first maritime reconnaissance mission was carried out on the day the aircraft arrived in Gander (Kostenuk and Griffin, 1977:31). On June 17th the 900 men of the Black Watch Regiment sailed from Quebec City, arriving in Botwood on June 22 (Neary, 1986:131).

To follow up the June agreement which dealt only with the two central Newfoundland air facilities, further talks were held in St. John's during August to address the question of Newfoundland's defense. The outcome of these discussions was that, by mutual agreement, Canada assumed the responsibility for the defense of Newfoundland including the command of the newly formed Newfoundland militia. There was no formal defense treaty between the countries, but throughout the course of the remainder of the war issues were addressed as they occurred. Newfoundland for her part was to provide the land and rights of way for defense installations along with transportation and temporary accommodations for defense forces whenever possible. To give effect to the new defense agreement, the Visiting Forces (British Commonwealth) Act was passed on October 15 (Acts of the Honourable Commission of Government, 1940;106).

Shortly after the August bilateral talks in St. John's, Canada again requested control of the Gander and Botwood airbases for the duration of the war. Newfoundland and the United Kingdom agreed and negotiations were initiated to work out the details. To address

the changing mutual defense matters that resulted from Canada's expanded role in Newfoundland a series of conferences was held during August and November-December 1940 and again in April 1941. As the pace of military development quickened in 1941, Canada moved to expedite defense matters by appointing a High Commissioner in St. John's empowered to negotiate future issues on Canada's behalf. This eliminated the need for formalized bilateral meetings and allowed issues to be addressed promptly as they arose.

The defense agreement with Canada was the pivotal point that turned Newfoundland away from the United Kingdom for her defense needs to a common defense bond with North America. In doing so she went from being a ward of the Royal Navy to becoming a contributor to North American defense (Bridle, 1974:XXV).

The United States-Canada Permanent Joint Board of Defense

At the same time that Canada and Newfoundland were moving toward a mutual agreement under which Canada would assume the responsibility for the defense of Newfoundland, two other sets of negotiations were in their primary stage. Unbeknownst to Newfoundland, the United Kingdom and the United States and the United States and Canada were in the preliminary stages of discussions on bilateral defense matters that would eventually lead

to official agreements that would have extensive implications for outside military involvement in Newfoundland. The first of these agreements to be concluded was between Canada and the United States.

Prior to the outbreak of war in September of 1939, Canada and the United States had formulated defense plans for the North West Atlantic in isolation from one another. Since the outbreak of war senior military officers of both countries had held informal discussions on matters of mutual concern although there was no formal procedure for consultation. Spurred on by the deterioration of the military situation in Europe, senior Canadian and American military planners met on July 11 to discuss defense plans for the Northwest Atlantic (Bridle, 1974:86;85). The United States was primarily interested in the facilities available in Newfoundland along with Canada's defense plans for the country. Of particular concern were the facilities that would be available within a year. American interest in this specific time frame relates to their strategic studies which postulated a worst possible scenario of the United Kingdom being defeated and the United States being forced to confront Germany and Italy bolstered by components of the British and French Fleets. If such a battle should occur it would be no earlier than the summer of 1941 and the United States wanted to ensure that air facilities were available to support the air units in such an eventuality.

Following the meetings of their senior Military Staffs, Roosevelt and King met on August 17th at Ogdensburg, New York. At the meeting Roosevelt proposed the formation of a joint United States-Canada board to plan for the defense of the northern half of the Western Hemisphere with emphasis on defending against an attack from the North East (Langer and Gleason,1952:704). Agreement was promptly reached and the board, to be known as the Permanent Joint Board of Defense, was quickly appointed. The fact that the first meeting took place on August 26 in Ottawa, less than 10 days after the board's appointment, gives an indication of the urgency with which the defense of the Western Hemisphere was viewed by both countries.

The formation of the Board had immediate consequences for Newfoundland. Fully half of the recommendations it made during the first year of operation pertained to the defense of Newfoundland. The first recommendation of the board was a general statement of aims, while the second recommendation, the first of an operational nature, concerned the defense of Newfoundland (Dzcuban, 1959:347-348). The Board recognized the strategic position of Newfoundland for North American defence and the need to provide adequate protection to ensure the United States and Canada were not endangered. The United States, because of concerns about the north eastern approaches to North America and the possibility of a German

attack from this direction, wanted to ensure that Newfoundland was adequately defended (Dzcuban, 1959:347). Because Canada had already assumed responsibility for Newfoundland's defense she was assigned the task of strengthening her land and air forces in the country and preparing the existing air facilities at Gander and Botwood for a large influx of United States aircraft if the need should arise in the future. In addition Canada was to install as soon as practical and not later than the spring of 1941, the appropriate defenses for St. John's, Botwood and other points as required (Stacey, 1948:154).

Until the Japanese attack on Pearl Harbor drew the United States into the war as an active combatant, the primary focus of American - Canada military cooperation was centered on Newfoundland (Dzcuban, 1959:162).

The United States-United Kingdom Leased Bases Agreement and Protocol

The third and arguably most important agreement was that concluded between the United Kingdom and the United States. Its basis was the United Kingdom's need for destroyers and munitions and the American desire for advance bases in the United Kingdom's possessions along the Atlantic coast of North America to enhance the defense of the Western Hemisphere. Since the outbreak of war

the United States and the United Kingdom had held talks on matters of common interest, particularly the United Kingdom's need for munitions, supplies, food, and raw materials. The United Kingdom was particularly short of destroyers for convoy protection and to defend against possible invasion. Heavy losses and damage to this class of vessel in the Channel and in the Norwegian campaign had severely depleted the available fleet of destroyers. To compound the problem, the new building program and repair yard output would not significantly increase this number for at least a year (Roskill, 1956). In the interim at least 50 destroyers were critically needed, particularly for convoy escort operations and to defend against invasion. The only possible supply of these vessels was the United States naval reserve fleet. Churchill first raised the matter of acquiring surplus American destroyers in mid May, shortly after becoming Prime Minister (Churchill, 1949). Roosevelt was in favour of transferring the destroyers but was limited by American neutrality legislation and the United States Congress which did not want to become drawn into a European war (Conn and Fairchild, 1960:61).

The United States Army and Navy had been pressing since 1939 for bases in the Atlantic outside the continental United States, to enhance hemispherical defense. On August 13th, Roosevelt linked the two ideas by proposing to exchange 50 surplus destroyers from

the naval reserve fleet, along with other munitions that were surplus to American needs, for bases in the United Kingdom's possessions in the Western Hemisphere (Langer and Gleason, 1952). The marriage of the two ideas posed a solution to the difficult problem presented by the differing public opinions in the United States and the United Kingdom. In the United States, the agreement had to appear to strengthen the country's defenses while not pulling the United States into the war. In the United Kingdom the main concern was that it not appear that its representatives had been out-traded by the Americans (Langer and Gleason, 1952:318). With both countries satisfied that the agreement would pass public scrutiny on both sides of the Atlantic, agreement in principle on the exchange of destroyers and other munitions for bases in British possessions in the Western Hemisphere was reached on September 2, 1940 (Langer and Gleason, 1952:769).

The immediate American consideration was to bolster the naval strength of the United Kingdom against the threat of immediate invasion rather than the immediate military need for the bases involved (Conn and Fairchild, 1960:51). While the United States military was rapidly expanding it had not yet reached the size in both manpower and material where it could effectively garrison these possessions. For the United Kingdom, the destroyers and munitions would be of immediate impact, and just as important

the agreement would link the United States and the United Kingdom together in the face of German aggression.

In exchange for the 50 destroyers and other munitions, the United Kingdom agreed to lease to the United States bases and related facilities at sites in the West Indies and in British Guiana in South America. The bases in Newfoundland and Bermuda were given "freely and without consideration as a gift of the British people" to assist the United States in defending the Western Hemisphere. The leases were for a term of 99 years and the United States was granted "all rights, power and authority within the bases leased and within the limits of territorial waters and airspace adjacent or in the vicinity of such bases to provide access to and defense of such bases and appropriate provision for their control" (Neary, 1986:135). The actual sites for the bases would be selected by the mutual agreement of both countries. Another provision of the final agreement was that the United States had emergency powers to take whatever action it deemed necessary anywhere in Newfoundland in the event of war. While this was a very broad and powerful authority in the event of an actual attack on the country, the inhabitants would have been grateful for the defense supplied by the United States.

The final negotiations for the Leased Bases Agreement got underway in London on January 28, 1941, almost four months after the agreement in principle had been reached. In the interim an

American survey party had visited Newfoundland in mid-September and selected a site for an army base at St. John's, a naval and air base at Argentia and an air base at Stephenville. The London talks, which Newfoundland and Canada attended as observers, were extremely one-sided, with the American delegation, who were dealing from a position of strength, prevailing on all points on their agenda (Neary, 1986:145-147). When the agreement was signed on March 27,1941 it contained 31 articles and an attached Anglo-American-Canadian protocol. The protocol recognized Canada's role in the defense of Newfoundland and provided that Canada's interests would be respected. It further provided that Newfoundland and Canada would be consulted in all future discussions between the United Kingdom and the United States on matters pertaining to Newfoundland that were covered by the Leased Bases Agreement.

For Newfoundland, the three Agreements resulted in an immediate upswing in military activity which directly strengthened Newfoundland's defenses and resulted in extensive military development, as the the country served first as a bastion of North American defense, then as a base from which to control the North Atlantic shipping lanes and as a stepping stone on the air route from North America to the United Kingdom.

THE DEFENSE OF THE AIR BASES

Botwood and Gander

"Thanks to her geography and the air travel aspirations of other countries, Newfoundland had acquired some first class air facilities" by 1939 (Neary, 1986:113). The bases at Gander and Botwood had their origins in a 1935 agreement between the United Kingdom, Canada and Ireland to develop a trans-Atlantic air service. Because of her geographic position on the great circle route between the United Kingdom and North America Newfoundland was designated the western terminus for the long westward overwater flight and as the point of departure for eastward flights (Map 1). The United Kingdom's Air Ministry decided to construct two airports in Newfoundland to meet their commitments. Under the agreement Botwood was to be a base for flying boats and Gander was to be a traditional land airport with runways for the large aircraft that were being designed and expected to be operational within the next two years (Private Communication: Wm. Chafe).

Botwood was selected for the flying boat base because it is generally fog-free and the surrounding topography was relatively low allowing for a long approach and departure. The sheltered

harbour was unaffected by ocean swells and was free from ice from June to November (Neary, 1986:110).

A large flat plateau on the north side of Gander Lake, 35 miles south east of Botwood was selected as the site of the land airport. The airport was originally known as Hatties Camp after the woodcutters' shanties along the rail line. It soon became known as the Newfoundland Airport, and remained so until 1941 when the name was changed to Gander, by the RCAF, after the nearby lake. The name change was necessary to avoid confusion with the other airports being constructed in Newfoundland (Private Communication: Wm. Chafe). [For the sake of continuity the name Gander will be used through out the text, even during the period 1936-1940 when the official name was Newfoundland Airport.] Construction commenced on both air bases in the spring of 1936 (Private Communication: Lester Shea).

When construction started emphasis was placed on the development of the flying boat base at Botwood because the large American and British multi-engine flying boats then being constructed were expected to be ready for service shortly. By the spring of 1937 Botwood was ready for the arrival of the first aircraft, and the first experimental flights landed in June (Botwood Departure Logs, 1936). Because these aircraft took off and landed in the bay, the on shore support infrastructure was less expensive and

time consuming to construct than the land airport at Gander where aircraft hangars and long runways were necessary.

Administrative offices, maintenance shops. fuel storage, passenger lounge, cafeteria and accommodations were constructed at Botwood. To support the long over-water flights, meteorological facilities and directional beacons along with medium and high frequency radio transmitters and receiver antennae for navigation and communications had to be installed. The first commercial flight landed on July 5, 1937 when a Pan-American Clipper from the United States departed Botwood for Ireland. The next day an Imperial Airways flying boat, the Caledonia, arrived after a flight from Ireland (Air Ministry, 1946). Regular commercial flights continued for the next three years during the ice free flying season from May until late October. With the outbreak of war in Europe in 1939 the flying boat service continued but the aircraft were now under military and government charter.

Development of Gander paralleled the development of Botwood with initial construction commencing in the spring of 1936. The airport was literally carved out of an unbroken boreal forest of black spruce interspersed with small fens and wetlands (Private Communication: Lester Shea). In addition to the runways and hangars, the entire support infrastructure had to be constructed. Construction progress was slower than at Botwood for two reasons:

Firstly, Botwood as a flying boat base required less expensive physical site developments and secondly, trans-Atlantic range flying boats were in the testing stage while commercially viable trans-Atlantic land based aircraft was still in the design stage. In the absence of aircraft to use the facility, construction could progress at a more leisurely pace than was the case at Botwood. Work was undertaken during the construction seasons of 1936, 1937 and 1938, with upwards of 900 men employed at peak periods (Private Communications: Lester Shea, Jack James). Construction would halt in December and commence again the following April. By the end of 1938, Gander's runways were paved and the maintenance hangar, administration building, and power plant, constructed, and navigational aids and communications equipment installed (Private Communication: Jack James).

The Albatross, a long range passenger transport being developed in the United Kingdom for trans Atlantic service, was designed specifically to use Gander. In fact the hangar at Gander had actually been designed to accommodate it. Unfortunately, the development of this aircraft was behind schedule because of technical difficulties and in 1938 was cancelled with no replacement on the horizon (Beaty, 1976:134-135). Thus, as late as 1940 the airport was not used for its original intended purpose. The closest it came was in 1939 when Handley Page Harrow air tankers provided inflight refuelling for Imperial Airways flying boats

departing Botwood (Taylor, 1975:68-69).

With the outbreak of war it was clear that Botwood and Gander could become either liabilities or assets in the defense of North East North America. Were they to fall into the hands of Germany they would serve as a base for aircraft which would make allied control of Newfoundland untenable. These aircraft could interdict coastal and trans Atlantic sea and air traffic, disrupt or cut cable communications as well as attack Canada and the United States. Under allied control these bases could be used for aerial reconnaissance flights some 450 miles further into the Atlantic than was possible from the nearest Canadian air bases at Dartmouth and Sydney.

The emergency defense agreement between Canada and Newfoundland in early June resulted in the immediate dispatch of army and air units to Gander and army units to the flying boat base at Botwood. These units were stationed in Newfoundland primarily to enhance the defense of Atlantic Canada by securing the air facilities.

> By the early summer of 1940 the RCAF was well aware of the potential of Gander as a base for their aircraft. In a report dated May 29th the Commander of Eastern Air Command, following a visit to Gander, described the facilities as; one of the largest airports in the world. It has 4 hard surfaced [paved] runways 3 of which are 4500 feet long by 600 feet wide and the remaining runway is 4800 feet long by 1200

> feet wide. In addition there is one large hangar 120 feet by 150 feet, very complete W/T [wireless transmitter], D/F [direction finding], and meteorological equipment, 7 very comfortable residences for married officials, and a staff house having 50 single bedrooms, central dining room, washrooms,and control tower for the civilian operational staff. Approximately 400 gallons of 87 octane and 6000 gallons of 100 octane gasoline are kept on hand" (Bridle, 1974:74;77-79).

The 5 Digby aircraft of RCAF 10 Bomber Reconnaissance (BR) Squadron which landed at Gander on June 17th heralded the formal arrival of a foreign military unit for permanent service in Newfoundland. The move to Gander was a simple matter of flying from Dartmouth to Gander, but this routine flight was of great political significance in the development of a military relationship between Canada and Newfoundland. The RCAF aircraft cemented the new level of military co-operation between the two countries.

Maintenance personnel and parts for minor repairs arrived with this initial flight. Using the existing facilities, the officers and men were accommodated in the airports staff house and administration building. These arrangements were sufficient for the small number of men required to operate the detachment of five aircraft.

The RCAF's mission in Newfoundland was three fold. The first priority was to patrol as far east into the Atlantic as the range of their aircraft permitted to provide an early warning in the event

of a German Naval move into the Western Atlantic. The second was to defend Newfoundland in the event of an attack. Thirdly, the aircraft were to serve as the local air defense of Botwood and Gander (NLPA GN 1/3 320/35).

The aircraft stationed at Gander was the Douglas Digby, a twin engined patrol bomber purchased from the United States. The Digby was the air force's second modern maritime patrol aircraft (the first having been the Hudson) and the first that could be considered long range. The first aircraft were taken on strength in December 1939 and in April 1940, 10 BR Squadron at Dartmouth was the first unit to become operational. The Digby provided the RCAF with a marked improvement in range and endurance over its other modern maritime patrol aircraft, the Lockheed Hudson. The Digby had a speed of 230 knots, an operational radius of 350 miles and an endurance of 12 hours. The Hudson had a similar range but could remain airborne for only seven hours (Douglas, 1986). However both aircraft were marked improvements over the Stranraer patrol aircraft with which the RCAF started the war. This obsolete British designed biplane had a speed of only 130 knots, a range of 250 miles and an endurance of five and a half hours.

The principal determinant of an aircraft's value was its operational capability. One of the key factors determining the effectiveness of a maritime patrol bomber was its range or operational radius. In the case of aircraft on convoy protection

missions in the North Atlantic, Gander provided a base that effectively doubled an aircraft's range in space and time over what could be accomplished by aircraft flying from bases in Canada. Operational radius could change from day to day because it was influenced by many factors. Douglas (1986: 378-379) states;

> The term operational radius- also referred to as patrol range or effective range- requires some explanation because of its fundamental importance to maritime air operations. It was the distance from base at which an aircraft could linger for a useful amount of time to escort shipping or search for enemy vessels with enough fuel remaining for the return trip. Allowing a safety margin for headwinds and the possibility that deteriorating weather at base would force diversion of the returning aircraft to another station, the effective range was roughly a third-frequently much less- of the total distance the aircraft could fly without refuelling. ...The weight of armament and equipment and number of crew members significantly altered aircraft performance, while the difficult weather conditions on the Canadian coasts often greatly reduced operational ranges.

Weather conditions around Newfoundland and Labrador and over the North Atlantic were worse than elsewhere in Atlantic Canada. Considering that in 1940 aircraft flying from Gander had as their nearest alternate Dartmouth, 450 miles further west, aircrew had to be cautious about venturing too far from base in bad weather.

Throughout the summer the RCAF consolidated its position at Gander. The Digbys of 10 BR Squadron remained the only aircraft stationed at the airport and continued reconnaissance patrols over the North Atlantic in search of German surface vessels and submarines that might threaten North America or the trans Atlantic convoys. Patrols as far east as 450 miles and in duration of up to twelve hours long were common (RCAF 10 BR Squadron Diary, 1940).

As operations continued it soon became apparent that if the air force was to continue to operate at the present level or expand operations additional facilities would be required to bring the airport up to the operational level of a military air base. To address this issue Canada on August 5, 1940, requested permission to construct additional facilities to upgrade the airport's infrastructure. The cost of this project was estimated at $1.3 million (Canadian) (Bridle, 1974:177;167-172). The following day Newfoundland promptly agreed to the Canadian request with a commitment to provide the land and right of ways free of charge (Neary, 1986:131). The Canadian Government immediately contracted with the Atlas Construction Company of Montreal to commence construction of the base.

On the same day that the RCAF arrived at Gander, the Canadian Army's Royal Highland Regiment of Canada (Black Watch) infantry regiment departed Quebec City for Botwood on the SS Antonia. The Regiment, consisting of 852 men, disembarked at

Botwood on June 22 and was subdivided into garrisons for Gander and Botwood (Neary, 1986:131). Their mission was to provide for the security and defense of both facilities. Being an infantry regiment they lacked heavy anti-aircraft or heavy coastal defense weapons of any kind. With only light infantry weapons, they were limited to perimeter defense against infantry raids or small scale low level air attacks which were the threats that Canada felt to be the most probable.

At Gander, with the air force already on site and occupying all of the available buildings, the army's first task was to establish defensive positions and set up tents for accommodations. To alleviate the shortage of barracks, military engineers and civilian contractors renovated vacant construction barracks into which the regiment moved in July (Private Communication: Jack James).

The RCAF did not immediately assign any aircraft or personnel to Botwood. The only military personnel assigned to Botwood were the Army garrison whose mission was to protect the base to ensure its continued operation. This necessitated stationing troops around the perimeter of the bases to optimize the available manpower and provide the greatest concentration of fire power with the weapons available. The Army was temporarily housed in tents and existing buildings while more permanent accommodations were under construction. Throughout the summer and fall of 1940, the

major military activity at Botwood was the establishment of army defensive positions and barracks to accommodate the defense troops. Operations at the base remained under the civilian authority although the flying boats that used the Base were on military or government contract flights transporting V.I.Ps and priority cargos between North America and the United Kingdom (Air Ministry, 1946).

Aircraft Detection Corps

To enhance the efficiency of air operations and the general defense of the country the RCAF, with the permission and support of the Newfoundland Government, in the summer of 1940, initiated the formation of the Aircraft Detection Corps (NLPA GN 38 S1-1). The Aircraft Detection Corps was a volunteer civilian organization under the auspices of the RCAF, spread throughout Newfoundland (Map 4). Their role was to act as the eyes and ears of the air force. Initially the concept was to provide an early warning system to warn of a possible enemy attack but the organization also served to track aircraft flying in the region. In 1940, there was no radar, few navigational aids and limited naval and air units to patrol the coast. The Aircraft Detection Corps was set up to report all aircraft activity to a central tracking and plotting office in Gander.

Source: RCAF No 1 Group Daily Diary, 1941-1945

MAP 4

The organization consisted of civilian members living in the outlying coastal areas away from the major military bases. In the absence of constant naval and air patrols or radar, the civilian watchers monitored the air and sea and reported all activity to local communications centers, usually the local telegraph office, Ranger or in the more remote communities the short wave operator who in turn relayed the information to the nearest miiitary base or reporting center. All reports were then plotted which allowed the military to track aircraft and log suspicious naval activity. In addition to the obvious role of an early warning of an attack or enemy activity the observers reports were invaluable especially in the first three years of the war before radar and the proliferation of electronic navigational aids, in monitoring allied air traffic in particular lost or missing aircraft.

By late 1942 there were approximately 1500 volunteers in the organization (NLPA J&D Box 34, file 9). The organization functioned until it was disbanded in November 1944 (Douglas, 1986:398). By then the observer's role had been superceded by the elimination of the threat of air attack and the chain of radar stations and the combined effects of enhanced naval and air patrols along with the large military presence throughout the country at many small stations. After the organization was disbanded it was found that the Aircraft Detection Corps provided many services

which the military could not replace by radar and enhanced patrols, such as tracking low flying aircraft and reporting suspicious activity. These were two of the functions that the military could not duplicate. The organization was therefore reinstated and served to the end of the war to supplement the radar and patrols along with the general intelligence gathering by the military.

CHAPTER III

CONSTRUCTION OF THE BASES:

SEPTEMBER 1940 - DECEMBER 1942.

STRATEGIC CONSIDERATIONS

The major strategic consideration in the Western North Atlantic from September 1940 to December 1941 when the Americans entered the war was the continuing German threat to the United Kingdom and the Western North Atlantic. For the United States and Canada this necessitated a strategy of preparing for the defense of North America while reinforcing and supplying the United Kingdom, in reality the first line of defense of North America (Conn and Fairchild, 1964: 67). An attack on North America was considered to be a very real possibility that would be even greater should Germany capture Newfoundland's air bases. Both Canada and the United States viewed the main threat to North America by Germany to be bombardment by surface vessels, small scale raiding parties, or aircraft attacks launched from the aircraft carrier then under construction for the German Navy. At this early stage of the war the operational status of this vessel was unknown to the Allies and there was no way of knowing it would never become operational.

Until May 1941 the predominant threat to shipping was from surface vessels in mid-Atlantic and submarines in the coastal approaches to the United Kingdom. Germany attempted to isolate the United Kingdom by destroying as much of her merchant shipping as possible. However, naval and especially unrestricted submarine warfare had not yet reached the Western Atlantic. The reasons for this were primarily political however there were secondary military and technological considerations that limited Germany's ability to operate in the Western Atlantic without new bases in France and long range submarines. The over riding reason was Hitler's political decision to avoid confrontation with the United States (Stacey, 1948:160).

Under the convoy escort system in use until the spring of 1941, a naval base in Newfoundland was not considered necessary either by the United Kingdom or Canada. Since German capital ships and raiders operating in the central Atlantic were the principal threat, convoy escorts for the voyage from Halifax to the United Kingdom consisted of battleships, cruisers or armed merchant cruisers. The escort base remained in Halifax because no other support facility was necessary since these large capital ships possessed sufficient range to accompany the convoys for the total passage. Only during the first 200 miles of the passage from Halifax and as the convoy approached the United Kingdom would it be met by

anti-submarine warfare ships (corvettes, destroyers and after 1943 frigates) and aircraft to provide additional defense against submarines.

The threat posed by the large German naval units was significant. In February 1941 German battleships sank five ships only 500 miles east of Newfoundland. In March they sank or captured 16 more, some as close as 350 miles east of Newfoundland (Stacey,1948:161; Roskill, 1956:373-378). RCAF patrol bombers from Gander, operating at the extreme limit of their range, unsuccessfully participated in the search for these raiders (RCAF Gander Daily Diary, 1941). Survivors from some of these convoy battles were landed at St. John's, thus bringing home to Newfoundland the proximity of the war. In late May, RCAF aircraft from Gander and United States Navy aircraft from Argentia were once again unsuccessful in their search for German naval units, the battleship Bismarck and cruiser Prince Eugen (Douglas, 1986:384-385).

The possibility of a German attack on Newfoundland was still considered to be a real threat, although it was reduced significantly in June 1941 after the German invasion of Russia. The redeployment to Eastern Europe of substantial numbers of German troops all but eliminated the probability of an invasion of the United Kingdom or substantial raids across the Atlantic. However, while the threat of immediate invasion was removed, the German Navy

still remained strong and posed a significant threat to the United Kingdom's merchant marine, particularly to the North Atlantic convoys, which constituted the United Kingdom's lifeline.

By the early summer of 1941 most of the German battleships and cruisers had either been sunk or were blockaded in European ports. However, larger numbers of submarines were quickly becoming operational with a corresponding increase in the number and tonnage of vessels sunk. Unfortunately, the increase in U-boat activity more than compensated for the reduced threat posed by surface vessels. The war in the Atlantic was not going well for the Allies. Three ships were being sunk for every new merchant vessel launched and eight submarines were being added to the German navy for each one sunk (Schull,1952:67).

Throughout 1941 the German submarine force continued to grow in strength and experience. As more U-boats became operational, patrols were moved farther west into the Atlantic. By early June 1941 German submarines had reached the waters around Newfoundland and the Strait of Belle Isle (Hadley, 1986:23-24). This escalating level of enemy activity in the Western Atlantic forced Canada and the United States to continue strengthening their Atlantic defenses with particular emphasis on their forces based in Newfoundland.

The westward extension of submarine warfare into the mid and Western Atlantic also necessitated a change in naval strategy. It now was clearly necessary to provide anti-submarine escorts for as much of the convoy route as possible. To the chagrin of the "big ship" men, capital ships were no longer a viable escort option. In fact they were now almost as vulnerable as the merchant vessels they had been escorting. The enforced reorganization of the escort forces required the immediate development of additional bases closer to the mid-Atlantic sealanes than those currently being used in the United Kingdom and Canada. Only with new bases closer to the mid-Atlantic and the escorts operating in relays between the bases would it be possible for the short range anti-submarine vessels to operate across the Atlantic (Scholl, 1961:68). For this reason, and mainly because of their location, Iceland and Newfoundland were chosen as the forward bases for the reorganized anti-submarine warfare escort forces.

The escorts to be stationed in Newfoundland were designated as the Newfoundland Escort Force (NEF) . Their principal role was to meet the convoys at the West Ocean Meeting Point (WOMP) approximately 350 miles east of St. John's (Map 5). Here they would assume responsibility for United Kingdom bound convoys from the Western Local Escort Force (WLEF). This latter force was tasked with escorting the convoys from its base in Halifax to the

NEWFOUNDLAND AND THE BATTLE OF THE ATLANTIC
UNITED KINGDOM
ICELAND
MOMP
GREENLAND
Air Cover Gap
General Limit of Convoys
400 mile limit of air support
WOMP
St. John's
Gander
CANADA
UNITED STATES
Halifax
New York
General Limit of Convoys
0
500
Miles

MAP 5

West Ocean Meeting Point. The Newfoundland Escort Force was to escort the convoy from the WOMP across the Atlantic to the Mid Ocean Meeting Point (MOMP) approximately 700 miles south of Iceland and 350 miles west of Northern Ireland. Here the Newfoundland Escort Force would transfer the convoy to the Eastern Local Escort Force, and then steam north to Iceland for refueling and resupply. The NEF would then meet the next westbound convoy at the Mid Ocean Meeting Point, escort it to the Western Ocean Meeting Point and return to its base in St. John's for refuelling and resupply to be ready to start the cycle all over again (Schull, 1952:136b&c).

The self-imposed German restrictions on warfare in the Western Atlantic ended abruptly on December 8, 1941 with the declaration of war on Germany by the United States. The U-boats were now free to conduct unrestricted warfare throughout the Atlantic and in the coastal waters of North America. For the first time the war moved to the very shores and bays of Newfoundland.

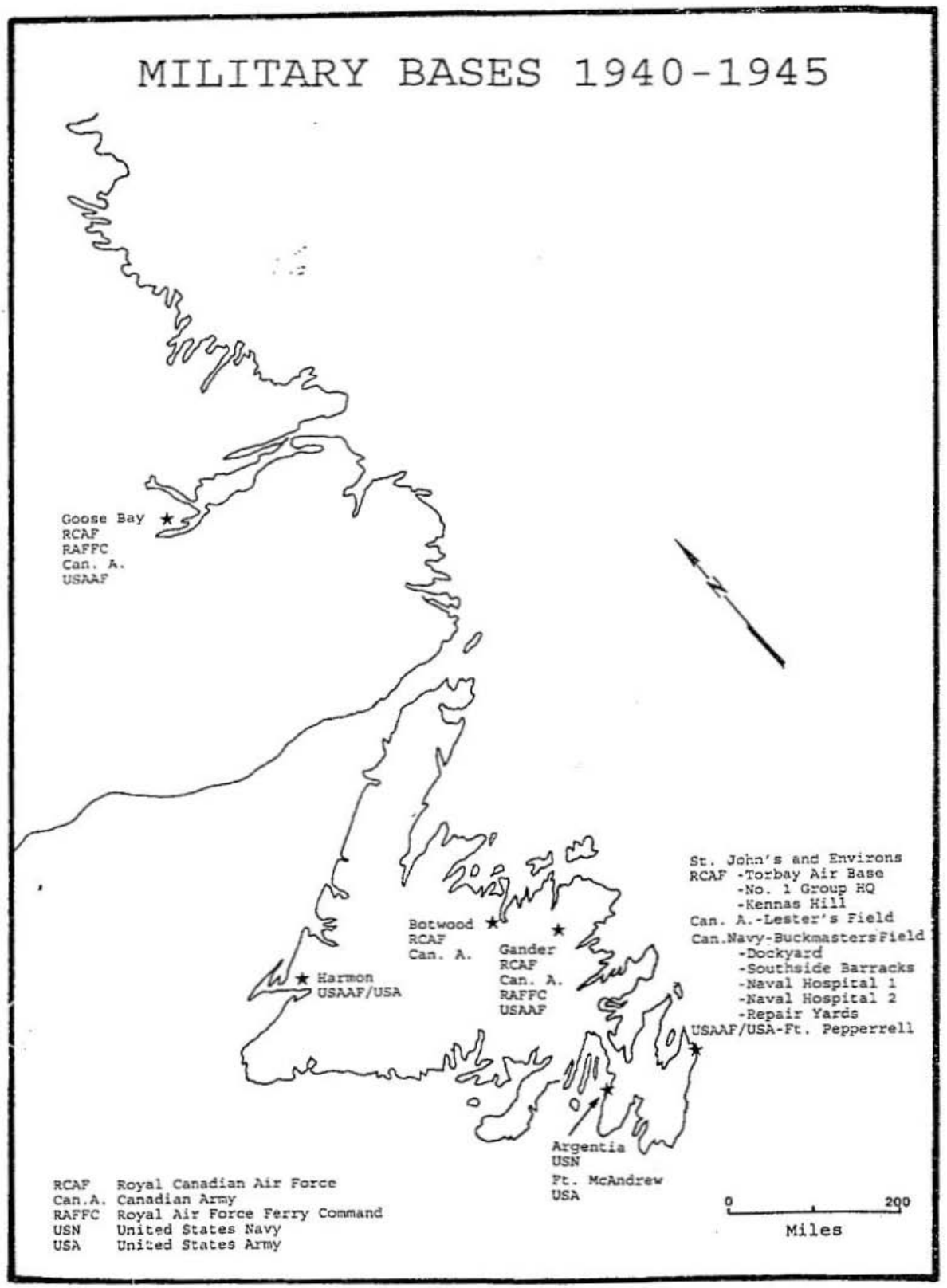
THE DEVELOPMENT OF THE BASES

Bases discussed in this chapter have been classified using nationality and then location as the primary criteria. On any given base, or at any given location several countries and services may be represented. In these cases nationality remains the primary

classifier. This means that some locations will be discussed in more than one of the following sections (Map 6). Because the forces of the United Kingdom were closely tied to the Canadian forces and did not maintain separate bases, they have been grouped with the Canadian Bases. By using this methodology and discussing service-specific developments a detailed reconstruction of the bases by location is possible. To convey the spatial and temporal dimensions of the construction project and to illustrate the speed with which the bases were "built from scratch" considerable detail on the components and time of construction has been provided.

CANADIAN BASES

Canada assumed responsibility for Newfoundland's defense as a result of the Bilateral Defense Conference in St. John's on August 20, 1940. Canada's only previous military involvement in Newfoundland had been the protection of the air bases at Botwood and Gander and the supply of coastal defense guns for Bell Island. The new defensive commitment, coming as it did almost one year after the outbreak of war, had only been undertaken when the growing strength of Germany necessitated the strengthening of Canada's Atlantic coast defenses, to which the security of Newfoundland and Labrador were integral.


MILITARY BASES 1940-1945
Goose Bay
RCAF
RAFFC
Can. A.
USAAF
Botwood
RCAF
Can. A.
Gander
RCAF
Can. A.
RAFFC
USAAF
Harmon
USAAF/USA
St. John's and Environs
RCAF -Torbay Air Base
-No. 1 Group HQ
-Kennas Hill
Can. A.-Lester's Field
Can.Navy-Buckmasters Field
-Dockyard
-Southside Barracks
-Naval Hospital 1
-Naval Hospital 2
-Repair Yards
USAAF/USA-Ft. Pepperrell
Argentia
USN
Ft. McAndrew
USA
RCAF Royal Canadian Air Force
Can.A. Canadian Army
RAFFC Royal Air Force Ferry Command
USN United States Navy
USA United States Army
0
200
Miles

MAP 6

Under the agreement Canada incorporated Newfoundland into her Atlantic defense structure and the Newfoundland militia was placed under Canadian command. The immediate outcome of the agreement was that Canada agreed to commit a battalion of infantry to St. John's and to provide coastal artillery, harbour defenses and a fighter base near St. John's for the general defense of the city (NLPA GN 38 54-2-1, S-4-1-1).

Shortly after the agreement was signed Canada prepared to send an additional 1230 men to Newfoundland for garrison duty. St. John's was to receive 602 men along with 10 inch and 4.7 inch coastal defense guns, anti-aircraft guns, and light infantry weapons, while Gander was to receive 136 men to bolster the existing defenses (Bridle, 1974:633;630). In April 1941 an American intelligence report records the Canadian military strength in Newfoundland at two battalions of infantry (2000 men), one flight of bomber reconnaissance aircraft (5) and 356 men of the Newfoundland Militia (USAAF Gander Field Daily Diary, 1941).

St. John's and Environs

The harbour of St. John's is small but superbly sheltered and of vital importance for naval escort operations in the North Atlantic. Not surprisingly then, St. John's and its environs played host to the

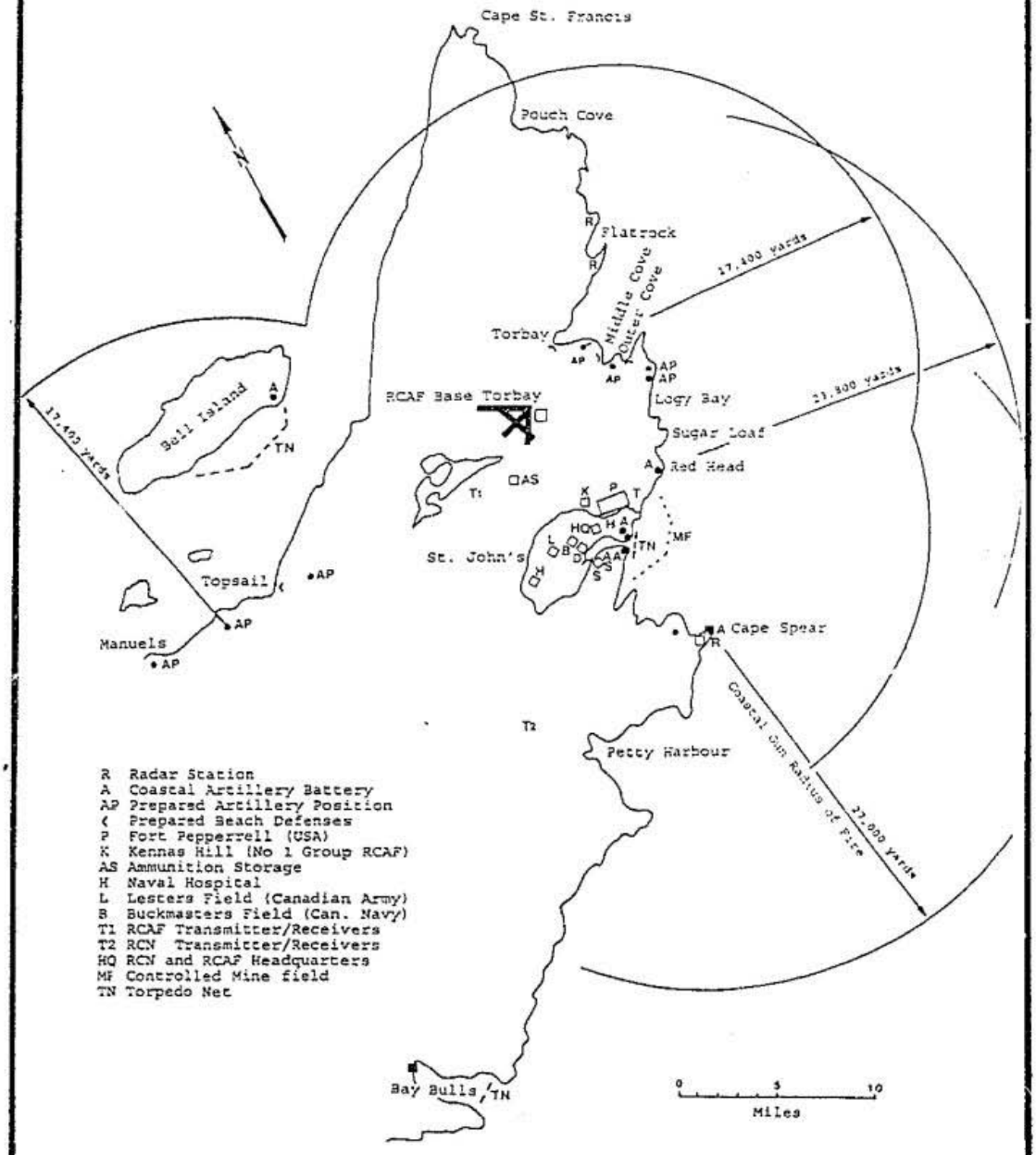
greatest concentration of military forces in both numbers and services of any region of Newfoundland during the Second World War (Map 7). Troops from three nations and six services were stationed in the immediate area. No less than four major military complexes and a host of lesser stations, sites or emplacements were located within a 10 mile radius of the harbour.

Newfoundland Militia

The Newfoundland Militia which was formed in 1939 was a volunteer force assigned as a light infantry unit for the general defense of the country. It was taken over by Canada under the Canada-Newfoundland defense agreement. The force was used to guard government buildings, the dockyard, water supply, oil storage, radio station and cable relay stations and other strategic assets in St. John's, Bell Island and the Carbonear-Bay Roberts areas (Bridle, 1974:640:637). In June 1940 the Newfoundland Auxiliary Militia Act was passed which created a volunteer non-paid force, later known as the Home Guard, to be recruited in Corner Brook, Deer Lake and Grand Falls for the defense of the paper mills and power supplies and general home defense (NLPA GN 38/S-1).

By the end of 1943 the Newfoundland Regiment which the militia had been renamed in March had a strength of 26 officers and 543 men. Since the beginning of the war the Regiment had expanded

MILITARY INFRASTRUCTURE
NORTH EAST AVALON



MAP 7

its role from that of a aircraft artillery, searchlights and coastal artillery at Bell Island and Cape Spear in place of Canadian Artillery personnel who had been redeployed to Europe.

Canadian Army

The Canadian Army provided the first foreign military force to arrive in St. John's for permanent assignment. The first troops arrived in September 1940 shortly after Canada assumed the defense of the country and by December there were approximately 775 (Bridle, 1974:146:138-139). Construction on the main base at Lester's Field on LeMarchant Road in the center of the city was started in September shortly before the arrival of the first troops (Private Communication: Frank Day) (Plate 1). The primary advantages of this large open field were that it was centrally located, adjacent to municipal services and provided the necessary open space on which to develop a base. The completed complex ran from LeMarchant Road north to Blackmarsh Road and along the shores of Mundy Pond (AP NF16-252). In addition to the barracks, warehouses and support buildings the base included a small hospital, laundry, theatre and recreation center. From this central base troops were dispatched to guard the various strategic sites

LEGEND PLATE 1

1 Canadian Army Base
2 Blackmarsh Road
3 LeMarchant Road
4 Mundy Pond

PLATE 1 LESTERS FIELD, ST. JOHN'S, CANADIAN ARMY, 1948

Photograph Credit:
Government of NF & Labrador
Dept. of Environment & Lands
Air Photo and Map Library
Air Photo Collection

throughout the area and to man the coastal artillery, searchlight, and anti-aircraft artillery positions.

When Canadian troops arrived in St. John's in the fall of 1940 the only harbour defense was the anti-submarine net which had been installed in late 1939 (Bridle, 1974:130:129). While this would prevent a submarine entering or firing a torpedo into the harbour, it obviously provided no protection against a bombardment by a submarine or surface vessel. To provide a minimum defense against naval bombardment until suitable coastal batteries could be obtained, two obsolete 75 mm French field guns of First World War vintage were installed on Signal Hill (Bridle, 1974:171;159). Although hardly suited for the purpose these guns served as the sole large caliber gun defense of the city until early February 1941 when United States Army artillery arrived to defend the port.

Although there were no coastal defense guns immediately available for the permanent defense of St. John's, the Canadian Army in the fall of 1940 started construction on three coastal defense gun positions to be ready when guns become available. Sites were selected on both sides of the harbour entrance at the Outer Battery and Fort Amherst to house 4.7 inch guns to act as an examination battery, along with a counter bombardment battery of 10 inch guns at Cape Spear four miles to the south east of the harbour entrance. The 4.7 and 10 inch guns were much heavier than the old 75 mm and

designed to fire the armour piercing shell necessary to defeat a heavily armored naval adversary. All three batteries were housed in concrete bunkers designed to provide both a stable platform for the guns and protection against enemy fire, up to a direct hit from a large caliber shell. Bunkers were provided for personnel, ammunition storage and close defense machine guns. It was not practical to excavate Fort Amherst and the Outer Battery so the bunkers were constructed above ground on the exposed bedrock, almost at sea level, at the bottom of the cliffs. These batteries defended the area immediately adjacent to the harbour entrance that was under the depression limit of the guns on Signal Hill. Fort Amherst had wood frame barracks, messes, administration and storage building constructed in a cluster adjacent to the lighthouse to the south of the gun emplacements. Because of the cliffs at the Outer Battery the barracks and mess were constructed away from the gun positions in the community of the Outer Battery. The 4.7 inch guns were installed and operational by June 15, 1941 (Bridle, 1974:154;143-144).

To defend the approach to St. John's a counter bombardment battery was installed at Cape Spear. These guns were of greater range and projectile size and weight than the 4.7 inch guns at the harbour entrance. The battery was designed to engage an enemy as far seaward as possible to reduce the accuracy of his shells on the

city and to provide time for shore, air and naval defenses to react. Construction began in the spring of 1941 and the 10 inch guns were operational by November (Bridle, 1974:636;634). Here the ground conditions were marginally better than at the harbour mouth sites for excavation and this permitted a large portion of the bunker complex to be underground. As at the harbour mouth, concrete bunkers were constructed for the main guns, infantry support guns, ammunition storage, gun crew and infantry ready rooms. Once constructed, these facilities were backfilled with earth to provide additional protection and camouflage. To the south of the gun position the support installations of wood frame buildings were constructed. This small installation which consisted of barracks, messes, storage buildings, power plant and administration building supported the gun positions as well as the navy port signal unit.

Royal Canadian Navy

As noted earlier, Newfoundland ports had not played any appreciable role in the escorting of convoys across the Atlantic prior to the spring of 1941. Naval activity in Newfoundland had been limited to occasional refueling stops at St. John's. The navy's original plans for Newfoundland had been to establish small bases at St. John's and Botwood for the use of local coastal patrol vessels which would also perform examination services for the ports

(Tucker, 1952:186-187). However a shortage of vessels caused by commitments elsewhere in the Atlantic Theater of operations had prevented the stationing of any vessels in Newfoundland. But by May 1941, changing strategic considerations in the North Atlantic resulted in the re-evaluation of the navy's role in Newfoundland.

Once the United kingdom made the strategic decision to provide enhanced anti-submarine escort in the mid and western Atlantic from a base to be established in St. John's, Canada promptly offered to construct the base, to provide as many vessels as possible and undertake command of the force. "The idea of concentrating its forces on a well-defined and vital objective also immediately related to the defense of the Dominion (Canada) held a strong appeal for the small Canadian Navy" (Tucker, 1952:189). The United Kingdom accepted the offer and it was agreed that title for the base would be vested with the United Kingdom, the government of which would finance the construction. For her part Canada would build the base and pay for its administration and operation (Tucker, 1952:190). Initial plans called for the assignment of 63 warships to the base: 30 destroyers, 24 corvettes and 9 sloops. It was anticipated that an average of 16 vessels would be in port at any given time (NLPA S-4-2-3).

Once the decision was made to establish the base the first priority was to provide the infrastructure necessary to support the

escort force. This was accomplished in a matter of days after the arrival of the first seven escorts on May 27, 1941 (NLPA, S-4-2-4). To ensure the force was immediately operational while awaiting the construction of shore facilities and storage, several support ships were dispatched to St. John's to provide interim services.
On May 29 a naval tanker arrived followed on June 3 by another naval tanker and the stores ship RFA City of Dieppe (Tucker, 1952:193). The first escort mission carried out by the newly established Newfoundland Escort Force took place on June 3. On June 14 a depot and repair ship, HMS Forth arrived from Halifax to assist with ship maintenance and repair (Tucker, 1952:193).

While the navy was commencing operations utilizing the existing civilian port facilities supplemented by the support vessels moored in the harbour, shore facility design and site selection were underway. By August design had reached the stage where the construction contract had been awarded to the EGM Cape and Co. of Montreal. Construction started immediately (Plate 2).

Because of spatial limitations in the city and at the waterfront, it was not possible to consolidate all the base components in one location. As a result they were spread throughout the city on sites chosen according to the availability of land and utility services. A lack of available office space in the city forced the Newfoundland Force Headquarters to seek accommodations in the Newfoundland Hotel in Cavendish Square. Permanent quarters would

PLATE 2 CANADIAN NAVAL DOCKYARD, ST. JOHN'S, ca.1942

Photograph Credit:
Public Archives of
Canada
Ottawa, Ontario

come later in the Naval Headquarters complex constructed at Fort William to the rear of the Hotel. HMCS Dockyard, the main wharf and docking space, was constructed in Steers Cove on the north east side of the harbour. The commercial premises occupying the site were requisitioned and removed to make way for the 3200 feet of wharfage and the 50,000 square feet of floor space required by the navy (NLPA S-4-2-3). To facilitate access to the docks extensive dredging was necessary. The repair shops, stores and tactical training center built in 1943/44 were located on the southside of the harbour near the dry-dock. The main naval barracks and personnel stores were located at HMCS Avalon in Buckmasters Field, which is now occupied by a Newfoundland and Labrador Housing Corporation project (Plate 3). The only tangible relic of the numerous occupants is the former drill hall which is now used as a municipal recreation center. The 250 bed hospital on Forest Road adjacent to the General Hospital, a wireless station in the Goulds and a port signals station at Fort Amherst were given the highest construction priority (Tucker, 1952:193). Construction progressed steadily and by January 1942 the wireless station was completed and operational. February saw the completion of the port signals station and the movement of the signals unit from Cabot Tower on Signal Hill where it had been temporarily stationed since May 1941.

LEGEND PLATE 3

1 RCN Buckmasters Field
2 Drill Hall
3 Lemarchant Road
4 Gulf Avenue
5 Former United Junior High

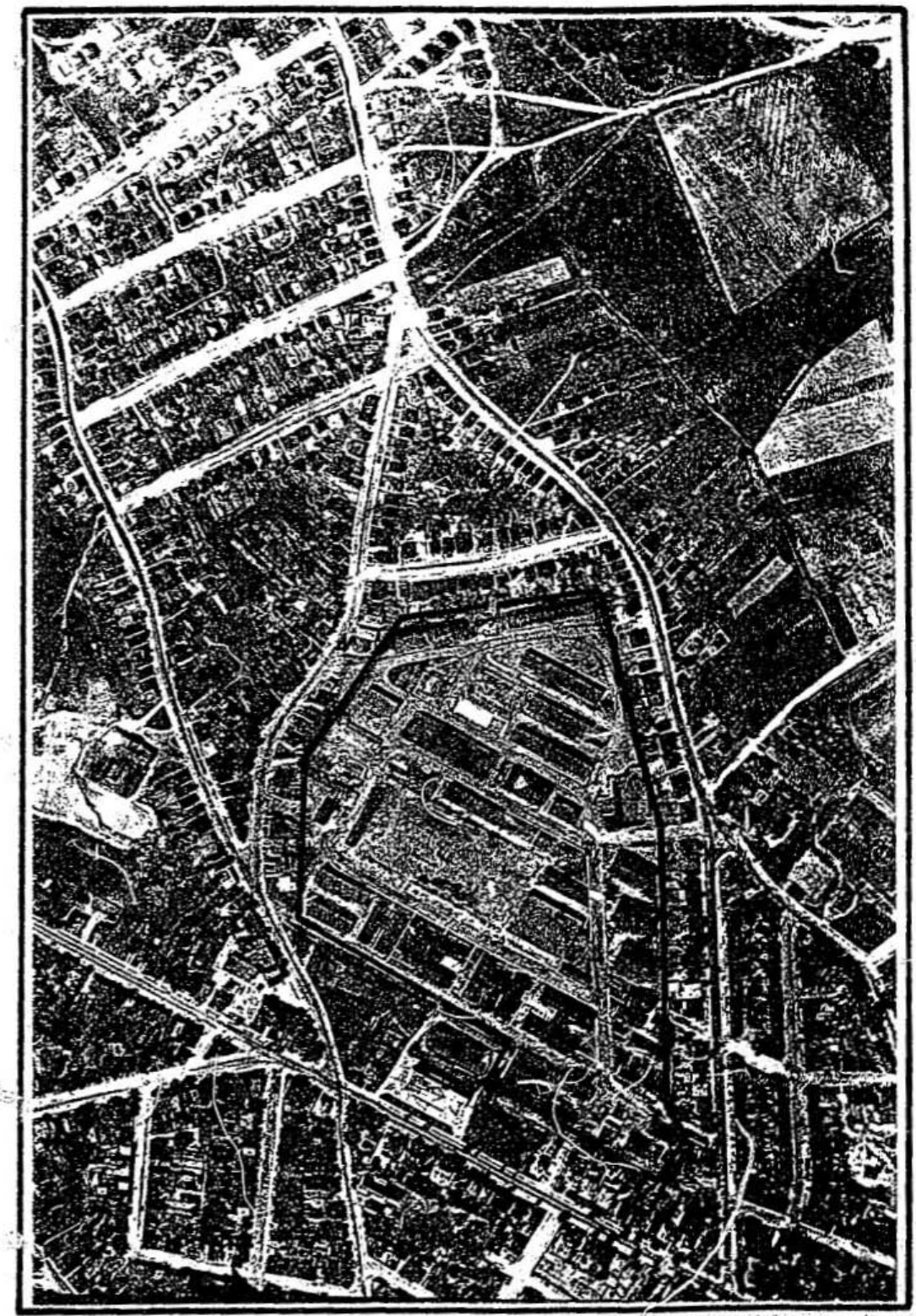


PLATE 3 BUCKMASTERS FIELD, ST. JOHN'S, CANADIAN NAVY, ca.1942

Photograph Credit:
Government of NF & Labrador
Dept. of Environment & Lands
Air Photo and Map Library
Air Photo Collection

The hospital was completed and occupied in March (Plate 4). By the end of the summer the wharves, naval headquarters and barracks at HMCS Avalon in Buckmasters Field had been completed.

Fuel storage was an immediate problem because the existing storage capacity was small and designed only to serve the prewar civilian demand. As a short-term stopgap measure three tankers were stationed in the harbour for storage and refuelling. A permanent solution was provided by the construction of a new tank farm on the Southside Hills adjacent to the civilian storage tanks. The first of the new naval storage tanks was brought into service in September 1943.

In May within two months of the establishment of the naval base, in May there were 150 officers and 750 men stationed on shore. (Tucker,1952:196). In addition there were the crews of the 40 escort and support vessels that were now stationed in the port (Tucker, 1952:193). By November 1942, the total shore-based complement had risen to 2000.

To provide sailors a respite from the rigors of life aboard cramped vessels in the North Atlantic, a recreation camp was established in July 1942 at the Goulds seven miles south of St. John's near the naval transmitter station (Private Communication: Frank Day). This facility operated during the summer months until the end of the summer of 1945.

LEGEND PLATE 4

1 RCN Hospital No. 1
2 US Army Docks
3 General Hospital
4 Signal Hill Road

PLATE 4 CANADIAN NAVAL HOSPITAL NO.1 AND US ARMY DOCKS
ST. JOHN's, 1948

Photograph Credit:
Government of NF & Labrador
Dept. of Environment & Lands
Air Photo and Map Library
Air Photo Collection

Ammunition storage facilities were located on the south side near the harbour entrance, the current site of the Fisheries Products Fish Plant. Port signal stations for communications with shipping in the vicinity of the harbour entrance were located at Signal Hill, Fort Amherst and Cape Spear. To enhance the protection of the harbour afforded by the submarine net, three anti-torpedo baffles were installed in the fall of 1941. These were steel nets suspended from buoys in much the same way as a gill net used for fishing. The net and baffles were replaced in December 1942 by a submersible anti-torpedo gate, that was raised and lowered by a steam winch on the south side of the harbour (Murphy and Kenney, 1989:16-17). The gate allowed easier access to the harbour while providing protection from torpedoes during the time that ships were traversing the Narrows. Finally to complement the coastal guns and the anti-submarine gate, a controlled mine field was laid near the harbour entrance in June, 1942 (Tucker, 1952:196).

RCAF No. 1 Group Headquarters

As more and more resources were dedicated to combat submarines in the Battle of the Atlantic, the RCAF in Newfoundland underwent an expansion in size and responsibility that necessitated the establishment of a command separate from air force operations in Eastern Canada. The new command established to control all RCAF

units and air operations in the country, especially those in support of the Canadian Navy, was designated as No. 1 Group and was directly responsible to Eastern Air Command Headquarters in Halifax (Douglas, 1986:387). On July 10, 1941 the Group headquarters was established in St. John's at the Newfoundland Hotel adjacent to the newly established Naval Command with which it would work closely in anti-submarine warfare. While No 1 Group was organizing its bases and establishing its communications network, tactical control of its aircraft continued to be exercised by Eastern Air Command. However on January 20, 1942, control was passed to No 1 Group and thereafter only general directives were issued by Eastern Air Command (Douglas, 1986:390).

As had occurred with the other deployments to Gander and Botwood, the Group was sent to St. John's before office space or accommodations were available at military installations. In the interim No 1 Group set up headquarters at the Newfoundland Hotel pending construction of their military headquarters, while personnel were billeted in rented accommodations throughout the east and central city. By the end of September, command strength was four officers and 23 men (RCAF No. 1 Group Daily Diary, 1941). This increased steadily and by the end of the year totalled 54, comprised of 9 officers, 38 men and 7 civilians (RCAF No. 1 Group Daily Diary, 1941).

The accommodations, administration and store base for Number 1 Group was constructed on Kennas HIll along the road to Torbay Airport (Plate 5). This base, separate from Torbay Air Base, catered to the needs of Number 1 Group. Construction started in the summer of 1941 and the base was completed and occupied over the winter of 1941-1942 as buildings were completed (RCAF Number 1 Group Diary, 1941-1942).

RCAF Base Torbay

During the Canada - Newfoundland defense discussions of August 1940, the matter of an airport near St. John's was raised. Subsequently, the Permanent Joint Board of Defense in its first report dated October 4, 1940 recommended that Canada "If physically possible, provide a fighter aerodrome near St. John's" (Dzcuban, 1959:367). Initially the airport was conceived as a fighter and communications support base. Fighters assigned to the base would serve to protect St. John's and the iron mines at Bell Island along with the approaches to the north east Avalon. Communications and transport aircraft would use the airport to support military and government operations in the city. Before the construction of the airport air access to the city was limited to flying boats using Bay Bulls Big Pond or Quidi Vidi Lake.

LEGEND PLATE 5

1 RCAF GROUP No. 1 Kennas Hill
2 Kennas Hill
3 New Cove Road
4 Boulevard

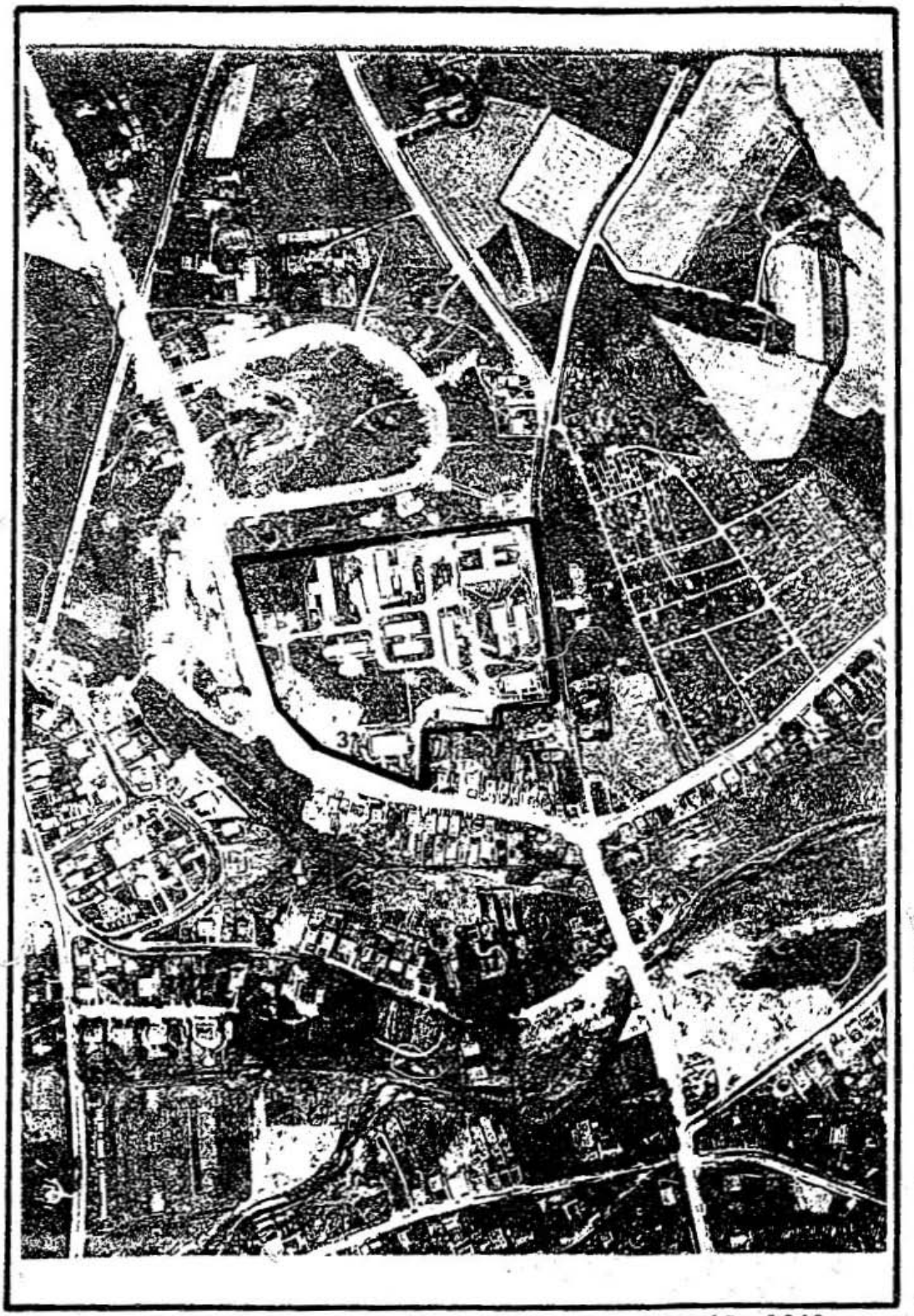


PLATE 5 RCAF NO. 1 GROUP KENNAS HILL, ST. JOHN'S, 1948

Photograph Credit:
Government of NF & Labrador
Dept. of Environment & Lands
Air Photo and Map Library
Air Photo Collection

On November 1940, a Canadian survey party visited the north east Avalon and selected a site between Torbay and St. John's for the new airport (Bridle. 1974:459;461). This site was selected over an alternate site near Cochrane Pond south west of the city because it was closer to St. John's and much of the area was already cleared for agriculture, thus permitting a more rapid and complete assessment of the topography. On April 17, 1941 Newfoundland acceded to the Canadian request for permission to construct the airport at Torbay, agreeing that Crown lands would be placed at the disposal of the Government of Canada free of charge either as an outright grant or a lease for a period commensurate with the capital investment (Bridle, 1974:460;462).

A $1.9 million (Can.) contract was signed with McNamara Construction on April 28, 1941, with work commencing immediately (Bridle, 1974, 461:462-463). Once construction had begun the changing priorities in the North Atlantic resulted in lengthening of the runways and construction of additional hangars and support facilities to support the operation of maritime patrol bombers. Work progressed rapidly through the summer and by October the runways were operational (RCAF Torbay Daily Diary, 1941). By December 20th outside construction was halted for the winter but the base had been sufficiently completed to allow 11 BR to continue operations through the winter (Plate 6).

LEGEND PLATE 6

1 RCAF Base Torbay
2 Site of present Air Terminal
3 St. John's

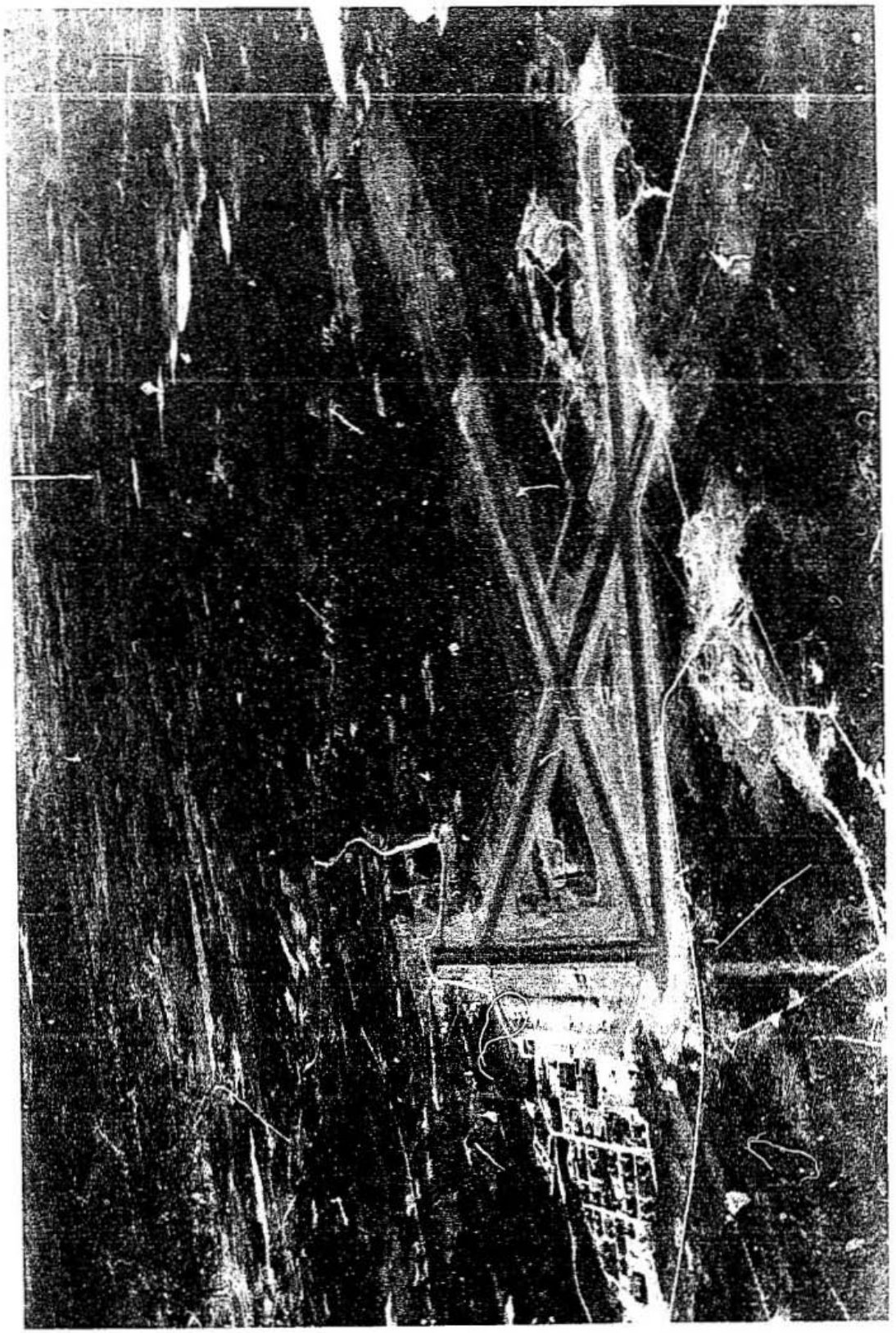


PLATE 6 TORBAY AIR BASE, ca.1955

Although the airport was originally conceived as a fighter base the changing priorities of the North Atlantic resulted in the first aircraft stationed at the airport being the Hudson maritime patrol bombers of 11 BR Squadron. They arrived in mid-November and immediately began to take part in convoy protection operations (Kostenuk and Griffin, 1977:33).

Because of the constantly changing winds that blew across the North East Avalon, the airport plan incorporated two 5000 feet by 150 feet wide and two 5000 feet by 200 feet wide runways which allowed aircraft to take off and land in eight directions (AP 1320-1, 210). Four heated hangars designed to accommodate aircraft up to and including B-24, B-17 and C-54 four-engine aircraft were constructed on the ramp next to the taxi strip.

The base which was located to the east of the airfield, adjacent to the hangars, was a self contained unit with all the utilities and services to operate independently of the nearby civilian infrastructure. It consisted of thirteen H-block barracks, nine administration buildings, two large warehouses for dry, cold and refrigerated storage and miscellaneous smaller buildings, along with a recreation center-drill hall with a swimming pool (Plate 6). Ammunition storage was away from the inhabited areas to the west and north of the runways. The total area occupied by the base was 881 acres, with the buildings occupying 125 acres and the airport

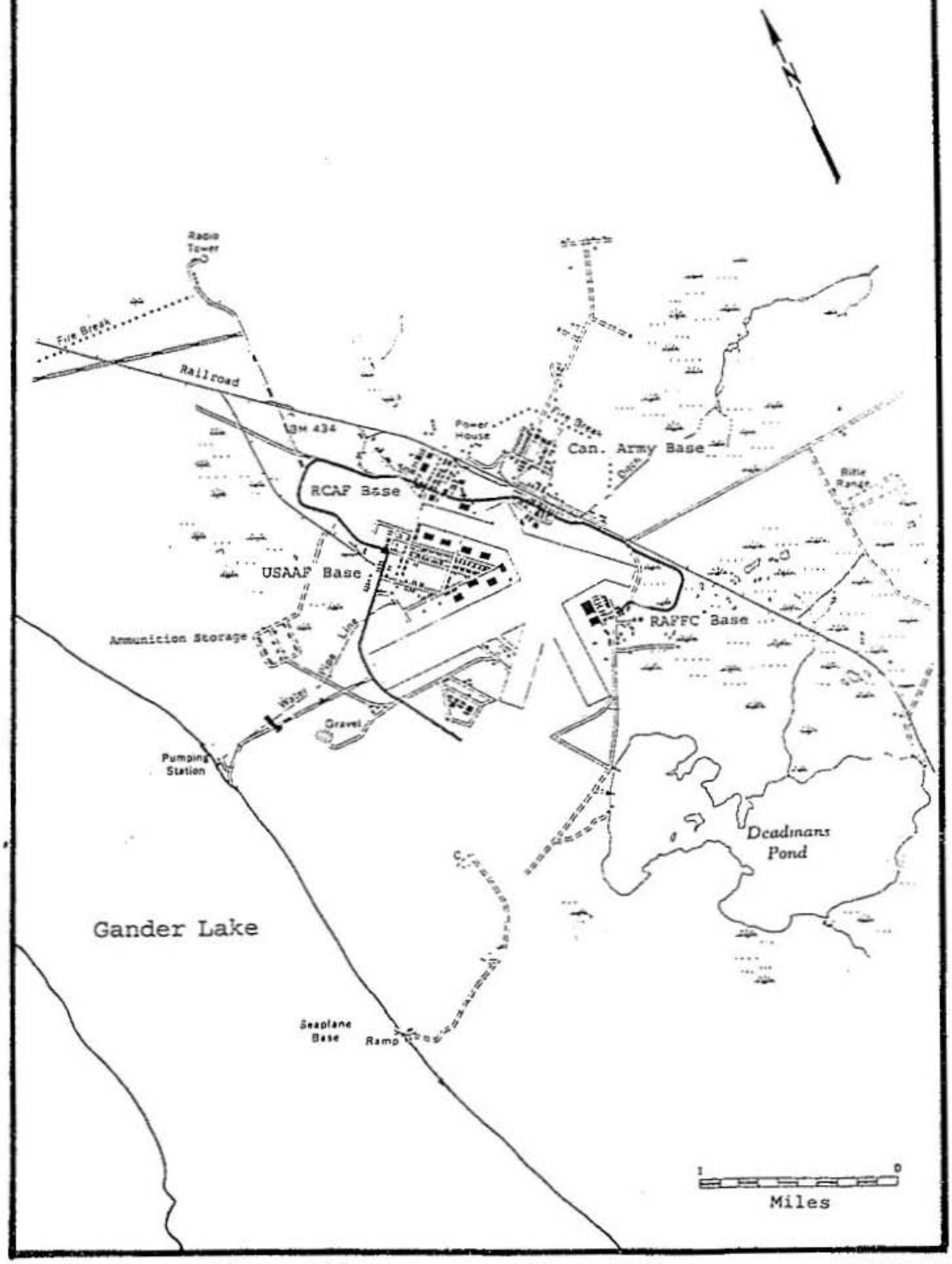
756 acres (AP A13260, 210). By November 1943 Canada had spent Approximately $11.2 million (Can.) on the runways and adjoining base (Bridle, 479:480-483). Throughout 1942 one squadron of patrol bombers operated in support of convoy operations, with 145 Squadron replacing 11 BR Squadron in May. Later in May fifteen Hurricane fighters of 127 Squadron arrived to provide air defense for the area (RCAF Torbay Daily Diary, 1942).

RCAF Base Gander

In July 1940, the RCAF initiated a $1.3 million (Can.) expansion and upgrading of the civilian airport to facilitate its use by military forces (Bridle, 1974:395;404). The project entailed the construction of defense positions, accommodations, hangars, maintenance and repair facilities, ammunition storage and handling facilities and the upgrading of the utilities necessary to support the large numbers of men and aircraft that would operate from the airport (Map 8).

Shortly after the upgrading project began the function of Gander within the North Atlantic Theatre of Operations was reassessed by Canada, the United States and the United Kingdom. The second recommendation of the Permanent Joint Board of Defense's first meeting of August 26-27, 1940 was that the defense

GANDER MILITARY BASES 1945



Base Map: Surveys and Mapping Division, Department of Energy Mines and Resources, 1948 NTS 1:50000 Map 2D/15 Gander.

MAP 8

of Newfoundland should be given higher priority. One of the specified items was..."selecting and preparing, as soon as practical, bases permitting the operation of United States aircraft when and if circumstances require, in the following numbers: A minimum of four Squadrons of patrol planes (48 planes) along with a minimum of one composite group of land planes (73 planes)" (Dzcuban, 1959:367). Newfoundland was recognized by the Permanent Joint Board of Defense to be within Canada's jurisdiction, and it was therefore Canada's responsibility to undertake the construction necessary at Gander to accommodate the American Air Force. The Permanent Joint Board of Defense recommendation, and in particular the number of aircraft specified, reflected the American plan to have prepared facilities available in the event it was necessary to rush reinforcements to Newfoundland to defend against a German attack on North America.

Concurrently with the Permanent Joint Board of Defense meetings, the RCAF was revising its own defense plans for Newfoundland and the number of aircraft to be stationed at Gander was upgraded from a detachment of five aircraft to two squadrons totalling 24 aircraft. Meanwhile in the United Kingdom the Ministry of Aviation was making plans to utilize Gander as the North American point of departure for aircraft being flown from American factories to the United Kingdom (Watt, 1960:14). RAF Ferry

Command, which was created to carry out the transfer of aircraft is discussed later in this chapter. These three decisions, one by the Permanent Joint Board of Defense, one by the RCAF and one by the United Kingdom, combined to make the origional expansion plans of the RCAF obsolete before they were completed. Within three months, decisions were taken first to transform Gander from an under utilized airport designed for use by a minimum number of trans-Atlantic aircraft, to the base for five patrol bombers and then to expand it into a major facility designed to provide the daily support for upwards of 200 resident aircraft in addition to large numbers of transient aircraft.

The upgrading plans were now completely re-drafted to address the new commitments. The initial estimate of $1.3 million (Can.) projected in August 1940 rose dramatically to a total expenditure of $20,281,955 (Can.) which was to be spent by September 1945 (MacKenzie,1986:81). Additional capital projects and operating expenses by the United States and the United Kingdom increased this figure significantly.

Gander developed into four separate bases clustered around the main runways. These runways measured 4500 feet long by 600 feet wide; 6150 feet by 400 feet wide and 4700 feet long by 1200 feet wide (Map 8). The latter was the original runway designed for early trans Atlantic aircraft landing in poor visibility with a

primitive instrument landing system (AP A12772, 36-37). Each base was operationally independent of each other except for the common use of the runways and utilities. The RCAF and Canadian Army bases were built adjacent to each other on the north side of the runways (Plate 7). The army occupied the site directly to the north of the rail line and railway stations while the air force occupied the lands immediately adjacent to the original airport facilities and further west past the end of the north south runway. In the V between the east-west and the north-south runway, the USAAF base was constructed. To the east of the runways was the RAF Ferry Command (RAFFC) base. Along the western perimeters of the north-south runway and the southern perimeter of the east-west runways, ten aircraft hangars were constructed. On the RCAF side of the east-west runway, three more hangars were constructed and at the RAFFC base a double size hangar (224 feet x 160 feet) and a regular hangar were constructed for a total of 15 including the original hangar (AP A12772, 36).

By January 1941 work was well underway. Because of the wartime emergency the project did not close for inclement weather and construction continued through the winter. By March 31, 1941 barracks for 31 officers and 200 men as well as the RAFFC double hangar had been completed.

LEGEND PLATE 7

1 Gander Lake
2 RCAF Base
3 USAAF Base
4 RAFFC Base
5 Canadian Army Base

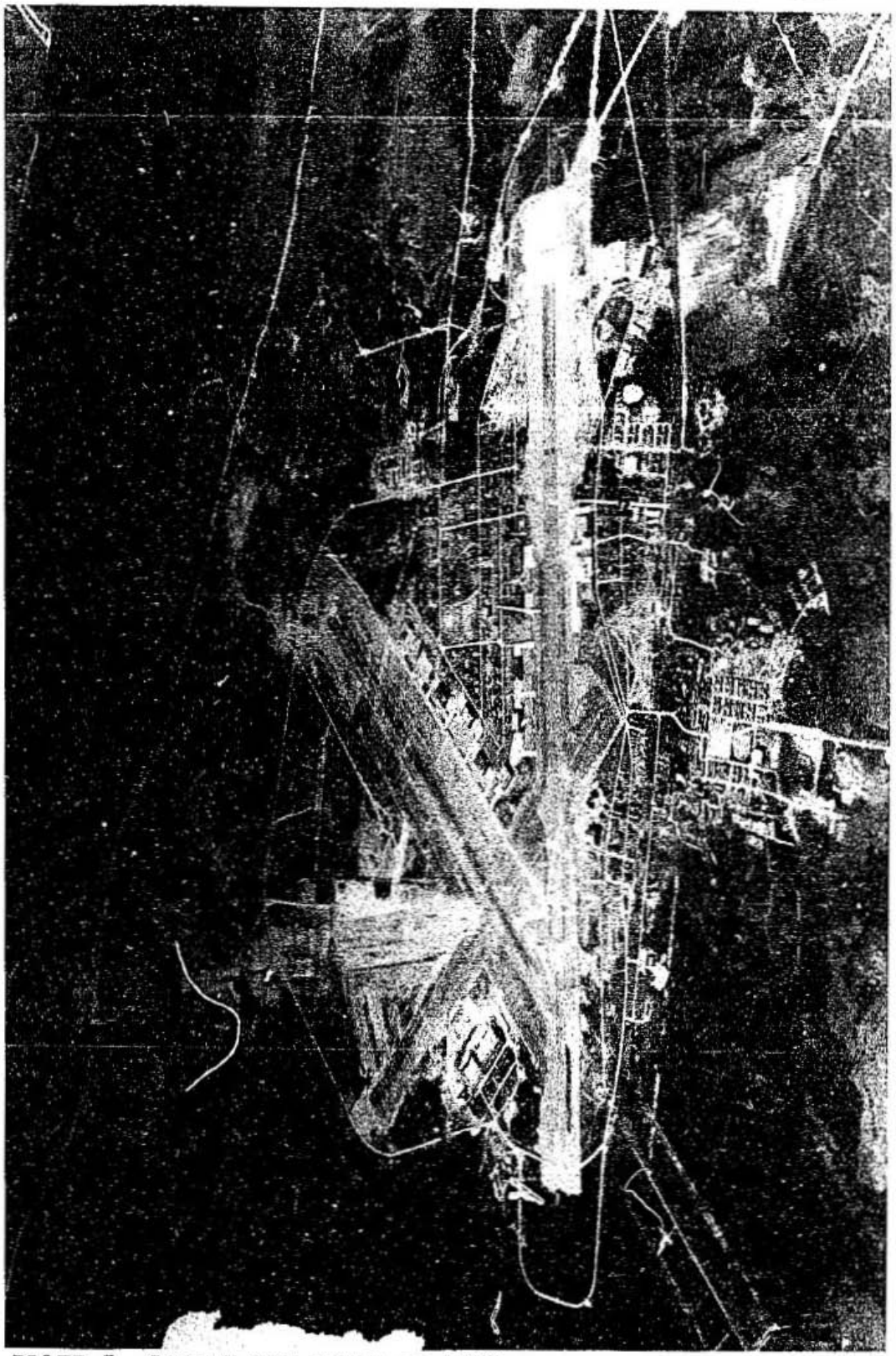


PLATE 7 GANDER AIR BASES ca.1952

By September the project was approximately sixty percent complete with the remainder in various stages of construction. Five hangars had been completed, three had their steel frame erected and an additional four had their concrete foundations completed. Sixteen barracks were completed and occupied by 1,576 men. An additional five barracks for 728 men were completed but not yet occupied, while seven barracks capable of accommodating 1,651 were under construction. Six messes to accommodate 1,310 at a sitting were completed and two more messes with a total capacity for 1,440 were under construction. The hospital, heating plant, bakery, laundry, and ammunition storage bunkers were completed along with 29 general purpose buildings for uses such as administration, warehousing, utilities, etc. A further 29 buildings were in various stages of construction with all foundation work completed (all data in this paragraph from Bridle, 1974:444;447-448).

Progress on the utilities was well advanced. The pump house for the water supply was under construction and a ten inch water line had been completed to Gander Lake. The sewer treatment plant and disposal field were under construction to the north of the Canadian side of the airfield. Railway spur lines to the power plant, coal storage yard and the gasoline and oil storage farms were nearing completion. The RCAF's aviation gasoline storage farm of 100,000 gallons was completed and operational while a 500,000 gallon tank farm for the USAAF was well advanced in construction

(Bridle, 1974:445;450). The United States constructed fuel storage capacity five times the size of the RCAF for two reasons. First, they required the reserves in the event that large numbers of aircraft were to use the airport to defend against an attack on North America. A second consideration was to ensure an uninterrupted supply of fuel in the event that for any reason tankers could not resupply the airport. As the war progressed and fuel continued to be available to Gander in uninterrupted shipments the tank farms of the USAAF and the RCAF were used by all airport tenants on an as needed basis (Private Communication: Wm. Chafe).

The RCAF continued operations throughout the construction phase, taking over buildings and facilities as they were completed. The five aircraft detachment of 10 BR continued to fly operations over the Atlantic throughout the fall and the winter of 1941. In early April the remaining ten aircraft of 10 BR flew in from Dartmouth to take up a permanent posting at Gander, increasing the number of aircraft permanently stationed at Gander to 15 (RCAF 10BR Squadron Diary, 1942). The Squadron continued to operate in the anti-submarine role over the North Atlantic until November 10, 1942 when they moved back to Dartmouth because the aging and often unserviceable Digbys had become too unreliable for winter operations over the North Atlantic. In just over two and a half years of constant operations over the North Atlantic the Digbys had been

worn out. Number 5 BR Squadron operating amphibious Cansos replaced 10 BR at Gander (RCAF 5BR Squadron Diary, 1942). They flew anti-submarine operations from Gander in support of the convoys until May 1943 when the unit moved to Torbay to make room for the return of 10 BR, now newly equipped with four engine very long range B-24 Liberator patrol bombers. (RCAF 10BR Squadron Diary, 1942). In August 1942, 127 Squadron comprising 15 Hurricane fighters deployed from Dartmouth to Gander to provide local air defense for Gander, Botwood and the surrounding area (Kostenuk and Griffin, 1977:60).

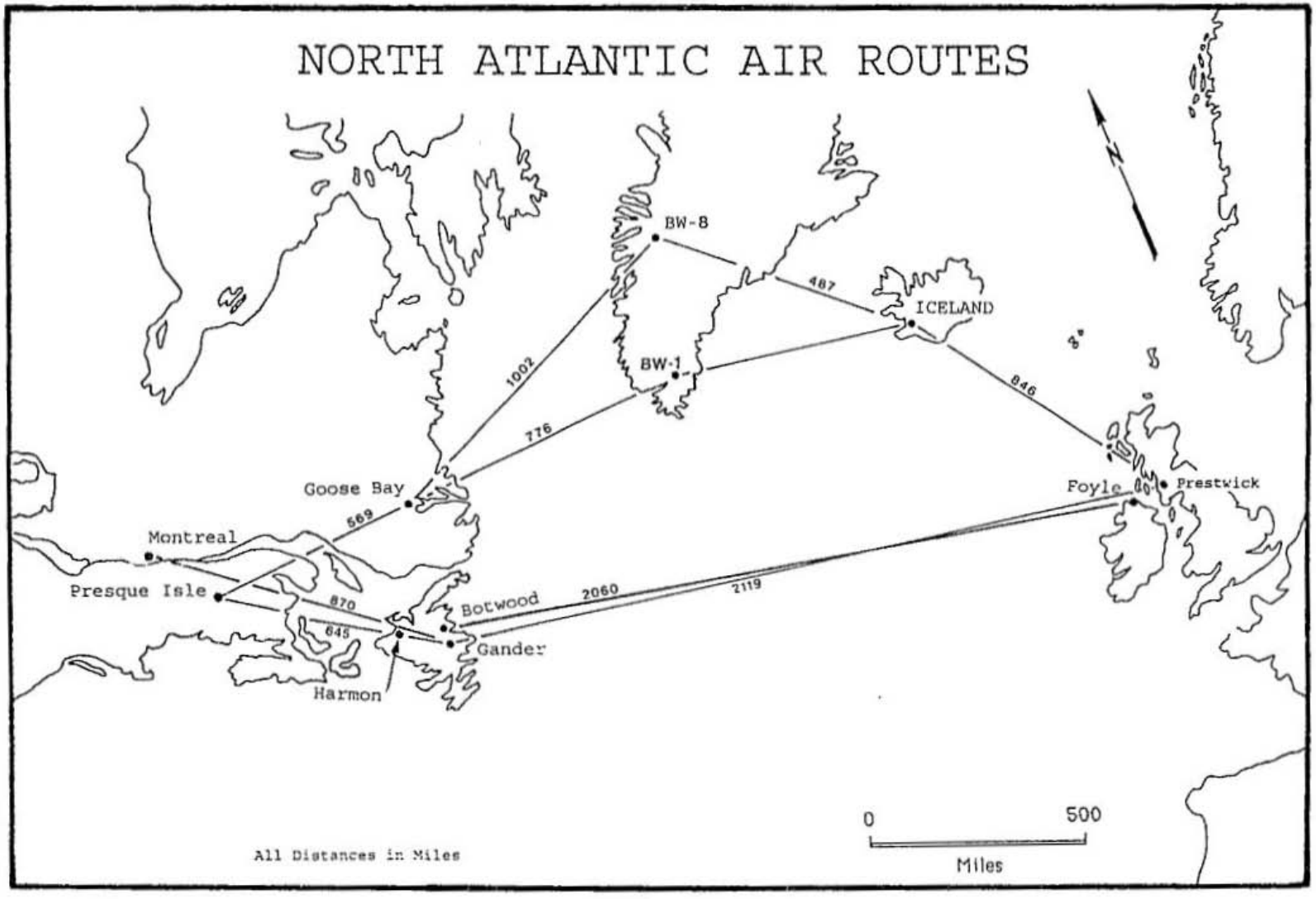
The Canadian Army garrison provided ground defense and security for the facilities and aircraft. When they first arrived in 1940 the Black Watch temporarily moved into construction barracks that dated from the airport's construction (Private Communication: Jack James). In August work started on the army base north of the railway. Barracks, messes, bakery, laundry, drill hall, parade ground along with associated warehouses, storage and support buildings were constructed.

A major duty of the garrison was the anti-aircraft defense of the airport. To accomplish this, long range 57 mm heavy anti-aircraft artillery and short range 20 mm light anti-aircraft artillery were set up around the airfield. The heavy anti-aircraft artillery, which was designed to defend against high altitude

attackers, was set up three miles to the west and east of the airport to provide a greater range and radius of fire. The light 20 mm anti-aircraft artillery was set up around the perimeter of the airfield and throughout the base. These quick firing weapons were designed as a point defense or close in weapon and were intended for defense against low to medium level attack. To provide a greater radius of fire many of these guns were elevated on wooden platforms above the surrounding buildings (Private Communication: Wm. Chafe).

Royal Air Force Ferry Command

As noted earlier in this chapter, flying or ferrying aircraft to the United Kingdom from North America was a measure decided upon by the United Kingdom's Ministry of Aircraft Production to help alleviate the shortage of aircraft in the United Kingdom, particularly maritime reconnaissance patrol bombers (Map 9). Until the fall of 1940, aircraft built in California on the west coast of the United States took approximately four months to reach the United Kingdom (Powell, 1982:19). They were flown to the eastern United States, disassembled, crated and transported by ship to the United Kingdom, where they were uncrated, reassembled and flight tested. This process was time-consuming, labour intensive and very demanding of maritime cargo space. To compound the problem the high rate of shipping losses in the North Atlantic resulted in an average loss rate


NORTH ATLANTIC AIR ROUTES
BW-8
BW-1
ICELAND
487
1002
776
846
Goose Bay
Montreal
Presque Isle
569
870
645
Botwood
Gander
Harmon
2060
7119
Foyle
Prestwick
N
0
500
Miles
All Distances in Miles

MAP 9

of between 10 and 20 percent (Hughes and Costello, 1977). The only feasible alternative was to fly the aircraft across the Atlantic although this was not without its risks.

In July 1940 the Ministry of Aircraft Production approached officials of the Canadian Pacific Railway and proposed the formation of an organization to ferry American manufactured bombers across the North Atlantic (Watt, 1960:20). There is no clear evidence of what the reasons were for the choice of the Canadian Pacific Railway, but it may have been because of the longstanding friendship between Lord Beaverbrook, the United Kingdom's Minister of Aircraft Production, and Canadian Pacific's president Sir Edward Beatty (Douglas, 1986:643). However, notwithstanding these personal friendships, Canadian Pacific was an important player in the transportation industry, with the management infrastructure to set up and operate the new organization quickly. On August 16 an agreement between the parties was signed and the Canadian Pacific Railway immediately began the recruitment of the personnel to operate the Atlantic Ferry Organization (Watt, 1960:20). Gander, because of its location, was selected as the North American staging base for the long over-water flight to the United Kingdom.

In early October Squadron Leader G. J. Powell, a former Imperial Airways pilot with considerable trans-Atlantic flying boat experience, arrived at Gander to establish the base of operations

(Powell, 1982:25). Because of the lack of facilities and the generally crowded conditions at the airfield, it was necessary to arrange with the Newfoundland Railway to station a number of sleeper cars and a dining car on the rail siding for temporary accommodations (Watt, 1960:33). Construction was started immediately on a 30 room transient barracks (Powell,1982:26.). By the end of October Ferry Command was ready for operations. The first flight of seven twin engine Hudson bombers departed Gander on the night of the tenth of November and arrived safely in the United Kingdom after a flight of approximately eleven hours (Air Ministry, 1945:5).

Throughout the fall and winter operations continued while the Ferry Command base was under construction as part of the general building program managed by Canada. The base was located on the east side of the runway south of the main east-west runway immediately adjacent to the hangars and flight line. It consisted of a double and a single hangar, four barracks, mess facilities and warehouses (AP A12772, 36-37) (Map 8).

Ferrying operations continued under the auspices of the CPR until May 1941 when the Ministry of Aircraft Production, to consolidate the operations within the Ministry, assumed direct control (Douglas, 1986:644). This arrangement was to be short lived, for on July 20th the RAF absorbed Ferry Command. Operations in the North Atlantic steadily increased from 26 aircraft dispatched

to the United Kingdom during the last two months of 1940 to 722 in 1941. During 1942 this figure increased to 1163 aircraft successfully ferried across the Atlantic using Gander and Goose Bay as the departure bases (Statistics from Air Ministry, 1945:36; Powell,1982:19).

RCAF Base Botwood

The RCAF first arrived at Botwood in late June 1940. At this time the civilian base was operational in support of American and United Kingdom trans-Atlantic flying boat operations. The mission of the RCAF was to support the civilian flying boat services to ensure their continued operations and to expand the facilities to support operational military flying by RCAF flying boats. In August it was decided that the facilities at Botwood required expansion and upgrading to allow the base to accommodate greater numbers of personnel and operational aircraft as well as the anticipated increase in transient flying boat traffic as a result of wartime operations. This expansion was similar to that undertaken at Gander to enhance military operations, the only major difference being that Botwood was a seasonal base due to winter weather conditions over the North Atlantic and the presence of ice in the harbour. It operated only during the summer flying season from May to mid-

November, then was closed for the winter (Plate 8).

Work commenced on the upgrading of Botwood in the spring of 1941. The existing 40 ft. ramp and parking area was expanded and the two seaplane hangars had their concrete foundations poured. By November when the base closed for the season, the construction project was 70 percent completed (Bridle,1974:446;451-452). Construction started on the hospital, barracks, messes, repair shops, warehouses, laundry and utilities along with a water supply from Peters River. A breakwater was constructed between the base and Killock Island, on which ammunition storage caves were established (AP A12240, 109-110).

The first operational military aircraft arrived at Botwood on July 7th, 1941 when a detachment of Catalina twin engine patrol bombers of the RCAF's 116 Squadron arrived from Dartmouth for anti-submarine patrols over the shipping lanes of the North Atlantic (Kostenuk and Griffin,1977:49). When the flying season closed in early December, the RCAF strength consisted of 27 officers and 383 men under the command of a Wing Commander (RCAF Botwood, Daily Diary 1941). From December until May the station conducted routine maintenance with a significantly reduced complement of personnel while awaiting the reopening of the spring flying season.

May 19th marked the arrival of the first civilian flying boats of the season and May 31st marked the return of the detachment of 116 BR Squadron Cansos from Dartmouth

LEGEND PLATE 8

1 Hangar
2 RCN Hospital
3 RCN Administration Building
4 Barracks
5 Patrol Bombers

PLATE 8 BOTWOOD AIR BASE ca.1943

Photograph Credit:
Public Archives of
Canada
Ottawa, Ontario

(RCAF Botwood Daily Diary, 1942). Strength of the base grew steadily over the flying season and peaked at 46 officers, 456 men and 86 civilians at the end of the 1942 flying season when the base ceased operational flying and was placed in maintenance for the winter (RCAF Botwood Daily Diary, 1942).

To secure the port of Botwood and the sea plane base, it was necessary to control the Bay of Exploits to prevent the approach of submarines or surface raiders. In the fall of 1940 the army started construction of a battery of 4.7 inch coastal defense guns at Point of Bay on the west side of the Bay of Exploits and a 10 inch counter bombardment battery at Wisemans Head on the east side of the bay. The guns as well as the alert and ammunition storage rooms were mounted in concrete bunkers. The entire complex was backfilled and covered with earth for camouflage and added protection from gunfire. Temporary wooden frame barracks, messes, storage and generator buildings served to support the gun batteries, which were manned and supported by the garrison at Botwood. The 4.7 inch guns were installed and operational by the opening of the shipping season in the summer of 1941 while the 10 inch battery was operational by December 15, 1941 (Bridle, 1974: 636;634; 152;142).

RCAF Base Goose Bay

To complement the existing ferrying of aircraft to Europe via Gander, the Permanent Joint Board of Defense agreed that an airport in Labrador or Northern Quebec would be necessary to serve as a link between existing airfields in the North Eastern United States, Eastern Canada and Gander with the new airfields under construction in Greenland (BW-1 at Narsarssusk and BW-8 Sondrestrom) by the United States (Dzcuban, 1959:353-354) (Map 9). Combined with the United Kingdom's bases in Iceland and Scotland these would provide a northern route to Europe for shorter range aircraft, eliminating the need for a perilous non-stop flight from Newfoundland.

A secondary consideration in the development of the base was the general strategic defense of North America and the need for a northern base for aircraft operating in the Battle of the Atlantic (Bridle, 1974:484;485). In July 1941, the United States and Canada both dispatched survey crews to Labrador to undertake a reconnaissance of possible sites for the proposed airport. Although working independently of each other both parties met at Goose Bay, agreed on the same site and independently recommended it to their respective Governments (McGrath,1987:18). On July 29, 1941 the Permanent Joint Board of Defense met in Washington and the board's 17th recommendation was that Canada would construct the base.

A caveat to the recommendation stated that the United States was prepared to proceed alone if Canada was either unprepared or unable to commence the project immediately (Dzcuban, 1959:183). This explains the American survey party even though the construction of the base was previously agreed to be a Canadian responsibility. The United States was prepared to move unilaterally to build the airfield. On August 29, 1941 Newfoundland agreed to Canada's requests for permission to construct the base and a contract was immediately awarded to MacNamara Construction Co. of Toronto with construction to start as soon as possible (Bridle, 1974:352;362).

A convoy carrying construction personnel, equipment and supplies along with fifty RCAF personnel landed at Terrington Basin on September 19. By November, three 7,000 foot unpaved runways had been bulldozed from virgin black spruce forest (RCAF Goose Bay Daily Diary, 1941). The fact that the airport site was located on a flat well drained raised sand terrace facilitated swift construction. To expose the sand it was only necessary to remove the trees and humus soil. Gravel was then spread level and rolled to form the foundation for the runways. For the first winter, before concrete was laid for the runways, the gravel froze and snow was then compacted on the top to form a surface similar to concrete. The airport itself was operational by 3 December when the first aircraft landed (RCAF Goose Bay Daily Diary, 1941). When completed the

landing facilities consisted of three 200 feet wide runways measuring 6070, 6080 and 5850 feet long (Plate 9). Because of Goose Bay's isolated location far removed from any modern urban infrastructure, almost everything, including the majority of the labourers had to be brought in by sea. Later after the runways became operational supply by air became possible. To support the military operations, a fully self-contained base consisting of barracks, messes, administration, laundry, bakery, power plant, water works, sewage system, wharf and heating plant was built (Map 10). Because the shipping season only lasted five months, from June to late October, large storage warehouses and POL tank farms were necessary to permit the base to operate continuously from November to May when ice along the coast of Labrador and in Lake Melville suspended shipping.

Military facilities to support the air operations consisted of hangars, meteorological services, air radio station, navigation beacon, Instrument Landing System and communication network. Construction continued throughout 1942 with a significant revision upward in the facilities necessary for both the military and civilian construction personnel. This was necessitated by the entrance of the United States into the war and the dramatic increase in aircraft crossing the Atlantic.

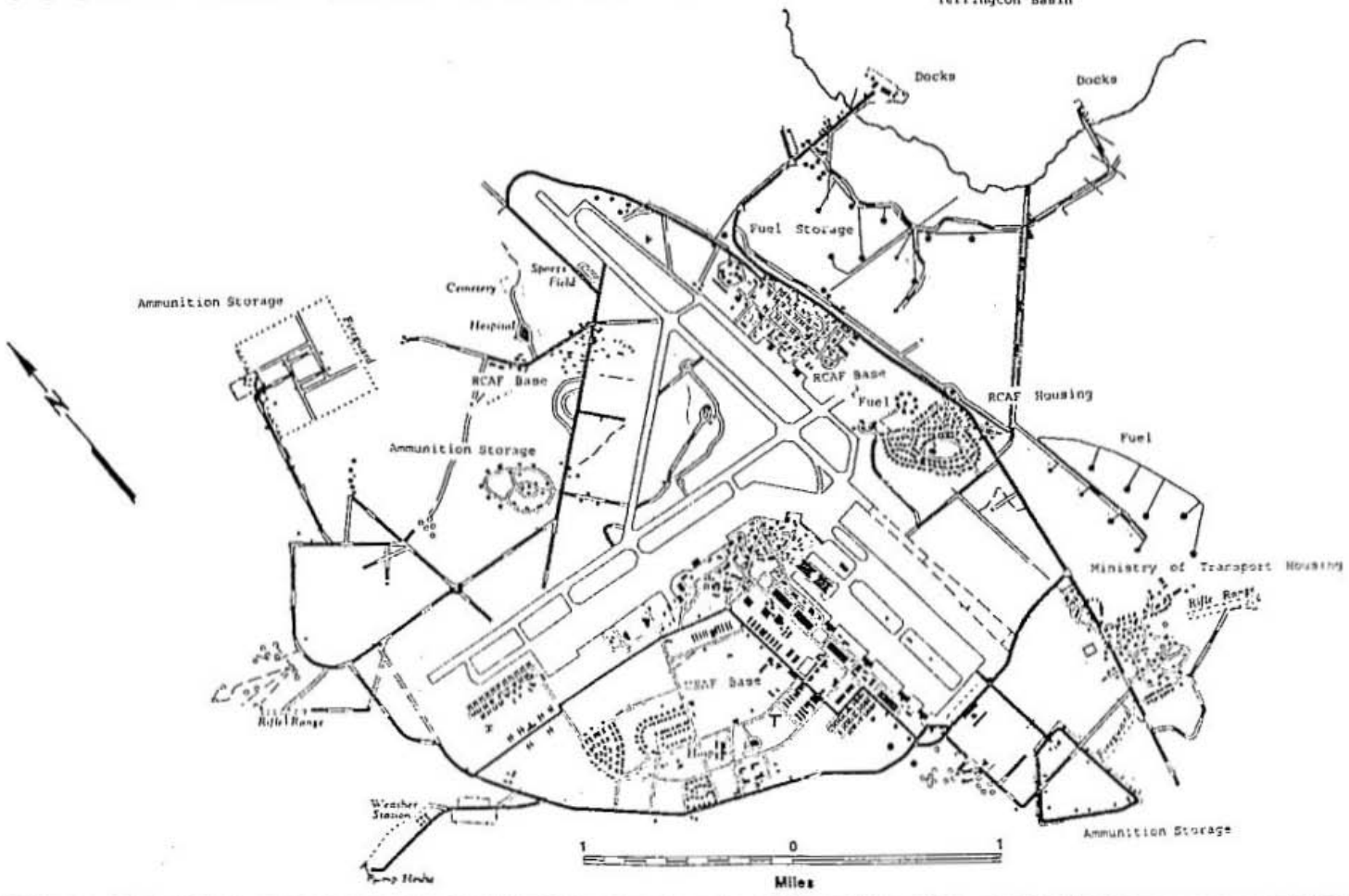
LEGEND PLATE 9

1 Runways
2 Terrington Basin
3 RCAF Base

PLATE 9 GOOSE AIR BASE EARLY 1942

Photograph Credit:
Public Archives of
Canada
Ottawa, Ontario

GOOSE BAY AIR FORCE BASES



Base Map: Surveys and Mapping Division, Department of Energy Mines and Resources, 1963 NTS 1:50000 Map 13/F8 Goose Bay.

MAP 10

On April 5, 1942 the first aircraft for overseas delivery departed for the United Kingdom (RCAF Goose Bay Daily Diary, 1942). By the end of April the RCAF strength consisted of seven officers and 68 men. The RAFFC unit had one officer and nine men while the USAAF contingent stood at three officers and nine men (RCAF Goose Bay Daily Diary, April 1942). In June with the opening of the shipping season the New Brunswick Rangers infantry regiment arrived for airport defense (RCAF Goose Bay Daily Diary, 1942). The strength of the Base increased dramatically and by the end of June stood at 1,700 military personnel of all services and 700 civilian personnel (RCAF Goose Bay Daily Diary 1942).

AMERICAN BASES

On September 16, 1940 the Greensiade mission consisting of Army, Air Force and Naval personnel arrived in Newfoundland aboard the USS St. Louis to select three sites for military bases as specified by the Leased Bases Agreement (NLPA GN38 S4-2-1; file 8). After holding discussions with the Governor and his advisers and obtaining his consent, survey flights were undertaken of potential base sites throughout Newfoundland. This was followed by a sea and ground reconnaissance to confirm the aerial observations. The Army selected a site on the north shore of Quidi Vidi Lake on the northeast boundary of St. John's for a base to house an infantry garrison for

the protection of the city and to serve as the headquarters for the American Army in Newfoundland. St. John's was chosen as the site for the headquarters because it was the seat of Government and the Canadian Army had recently established its headquarters here. The Navy selected the Argentia peninsula on the northeast side of Placentia Bay for a combined naval and air base. The Army Air Force selected a site near Stephenville at the eastern end of Bay St. George for an emergency landing field. In addition to the Quidi Vidi site the Army also established a base at Marquise adjacent to the Naval Base at Argentia and stationed troops at Stephenville to protect the air base. On November 11th an agreement between the United States and the United Kingdom authorized the start of construction before the formal signing of the leased bases agreement (Dzcuban, 1959:167).

Shortly after the initial surveys had been completed preparations began to dispatch troops to Newfoundland. Because of the urgency of the perceived threat by Germany, Newfoundland was the destination for the first American troops dispatched to new bases in the United Kingdom's possessions in the Atlantic, arriving in January 1941. The troops had originally been scheduled to arrive in mid-November but sailing was delayed until January when a suitable ship could be prepared for transportation and quarters (Bykofsky and Larson, 1957:9). Troops were not sent to any of the

other new Atlantic base locations until April (Conn, 1960:98). The decision to dispatch combat troops to Newfoundland in the middle of winter, before base or support facilities were available is an indication of the importance the American military placed on defending the island. The troops had to be billeted on their transport ship.

The United States had two major military objectives in establishing bases in Newfoundland. The first and most important was to secure the island to allow it to serve as a defensive outpost of the United States. The second was to develop the necessary military infrastructure to support units deployed in or transiting through the North Atlantic. To achieve these objectives entailed considerable expense and the allocation of scarce personnel and equipment.

In 1941 the initial cost of constructing the army bases at St. John's, Stephenville, and Marquise was estimated to be $28 million (US) (Dzcuban, 1959,168). By 1943 after completion the final cost had risen to $60.3 million (US), more than double the initial estimate (Dzcuban, 1959:168). Increases in personnel numbers were similar. The initial army garrison in January 1941 was 977 men. This almost doubled by May to 1660 and further increased to 2211 in August. By the end of November there were

2383 personnel assigned to Newfoundland (Watson, 1950:480, all personnel figures).

The original Leased Bases Agreement signed in March 1941 provided for a total of 4487.43 acres in six locations (Acts of the Honourable Commission of Government, 1941). As construction progressed and the military commenced operations it was realized that considerably more land would be required for the bases. In early 1941 the United States requested an additional 2142 acres of land to fulfil these operational requirements. These lands were leased to the United States pursuant to the July 1942 Supplementary Bases Agreement (Acts of the Honourable Commission of Government 1942). While this was a substantial acreage, almost half the size of the original appropriation, it did not include the large bases being constructed on lands subleased from the Canadians at Gander and Goose Bay or small communications, navigation and radar sites that were obtained from Newfoundland under the terms of the duration of the war plus six months.

St. John's and Environs

Less than a month after the Greenslade mission, the USS Bowditch arrived in St. John's on October 13 with a detachment of the Army's Corps of Engineers to conduct the preliminary surveys and design for the bases (Watson, 1950;480). They rented office

space in the Reid Building on Duckworth Street and throughout the fall of 1940 and the winter of 1941 surveyed the sites around St. John's and coordinated other engineering parties at Stephenville and Argentia. In addition to the 198.36 acre main site at Quidi Vidi Lake, 2.5 acres for a supply dock on the north east side of the harbour, 27.57 acres on the White Hills for radio communication towers and a site on Signal Hill for the establishment of a coastal artillery battery were also selected for inclusion in the Leased Bases Agreement (Acts of the Honourable Commission of Government 1941).

Shortly after the Engineers arrived, the United States, in response to the deteriorating strategic situation in Europe, decided that it would be necessary to establish a garrison in Newfoundland immediately. It was clear that the deployment could not wait for the establishment of the necessary infrastructure to house and support the personnel. The engineering personnel in St. John's expanded their mandate to include pre-planning for the arrival of Army personnel in the new year.

In response to this perceived threat construction of temporary barracks and administrative buildings at Fort Pepperrell started in October, followed on the last day of December with the commencement of construction on the permanent buildings (Dzcuban, 1959:167). Initial plans called for the base to accommodate 3500

personnel and this was the basis for the first year's construction program. With the active participation of the United States in the war this was upgraded to 5500 in early 1942 (Dzcuban, 1959:168).

On January 29th the UST Edmund B. Alexander arrived in St. John's with 58 officers and 919 enlisted men assigned to garrison duty (Dzcuban, 1959:98). The contingent consisted of infantry, coastal and anti-aircraft artillery, and support and headquarters personnel along with their equipment and weapons. Because there were no accommodations available in the city, and winter weather made living under canvas difficult, the Edmund B. Alexander remained docked on the south side of the harbour until July as an accommodations ship (Private Communication: Frank Day).

Although the defence of St. John's was recognized as Canada's responsibility by the Permanent Joint Board of Defense and Canada had resources committed to defend the port, there were no coastal defense guns available in Canada for assignment to St. John's. To complicate the matter further, Canada did not produce this type of artillery and was dependent on the United States and the United Kingdom for her supply. Unwilling to leave the port undefended, the United States dispatched a battery of four 6 inch coast defense guns with the first contingent of troops. In early February, shortly after their arrival in the city, these batteries were installed on Signal Hill (Bridle, 1974:282;289). In addition to

the coastal guns, mobile anti-aircraft artillery batteries were set up at temporary sites near the United States military facilities. In light of the delays experienced by Canada in obtaining suitable coastal defense guns for the city, the United States as an interim measure dispatched four mobile 155 mm artillery pieces along with 3 inch anti-aircraft artillery batteries for the interim defense of the city (Bridle, 1974:152;142). The United States further reinforced its coastal artillery battery on Signal Hill in September by adding two 8 inch guns.

Throughout the winter and spring of 1941 personnel continued to arrive in the city. The Edmund B. Alexander could not accommodate all personnel, so in late March with the improved weather, a temporary tent encampment was established at Camp Alexander, located in a 15 acre field near Carpasian Road and Pine Bud Avenue in the north east section of the city (Private Communication: Frank Day). This provided temporary accommodations while Fort Pepperrell was under construction. By May new arrivals had increased the garrison in St. John's to 1666 (Dzcuban, 1959:98).

Construction of the barracks and support buildings on Signal Hill had commenced in February shortly after the arrival of the troops and artillery pieces. By May the Signal Hill barracks were completed and occupied. At Fort Pepperrell construction emphasis was on the completion of personnel accommodations and support

infrastructure such as messes, hospital, and electrical, water and sewer services. Work progressed steadily throughout the summer and in November the base was thirty-five percent completed with all barracks scheduled to be finished by the first of December (Bridle, 1974:306;316). At this time the first personnel began to move from Camp Alexander and by mid-December the latter was vacant. Shortly thereafter it was disassembled and the property returned to its owners. Army headquarters, which had previously been located in a rented house on Rennies Mill Road, moved to Fort Pepperrell in February thereby consolidating all personnel on the base. Construction continued throughout 1942 on the revised building plan and was finally completed in the middle of March 1943 (Dzcuban, 1959:168) (Plate 10).

By the time the United States military arrived in St. John's, cargo handling at the port was already near capacity given that most of the docking facilities were finger piers unsuited for large cargo vessels. Without the addition of new cargo handling facilities the port would have been unable to handle the volume of cargo necessary to build, maintain and operate the planned American bases. To address this potential supply bottleneck and to continue American policy of having complete control over as much of the supply infrastructure as possible, a dock and warehouse was constructed on

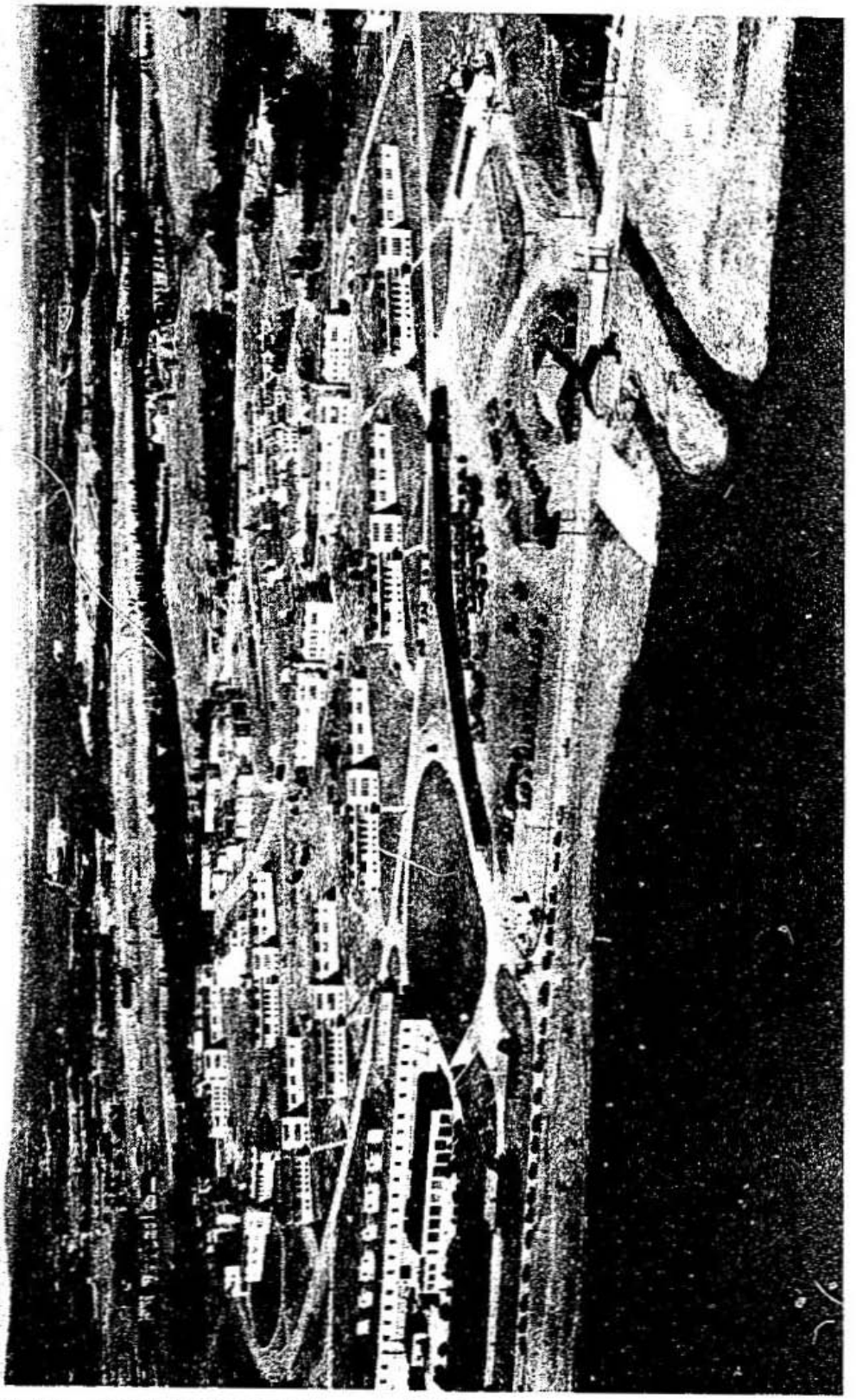


PLATE 10 FORT PEPPERRELL ca. 1943

Photograph Credit:
Public Archives of
Canada
Ottawa, Ontario

the leased harbour front site at the Inner Battery (Bykofsky and Larson, 1957:11)(Plate 4). The facility consisted of a wharf, cranes, warehouse for dry cargo and pipelines for the transfer of bulk POL. Construction started in late 1941 and the facility was operational by mid-1942 although all final work was not completed until March 1943 (Dzcuban, 1959).

With the presence of large numbers of combat troops there came a corresponding need for the safe and secure storage of large quantities of ammunition away from inhabited areas in case of an explosion. Twenty five acres of land was leased from Newfoundland on Portugal Cove Road, west of the Torbay Airport for that purpose (DE&L Files USA Lands). The site was selected because it was in an uninhabited area adjacent to the main transportation routes and airport which made the ammunition readily available for routine or emergency allocation. Additional ammunition storage silos were constructed in the White Hills which formed part of Fort Pepperrell.

U S Naval Base Argentia

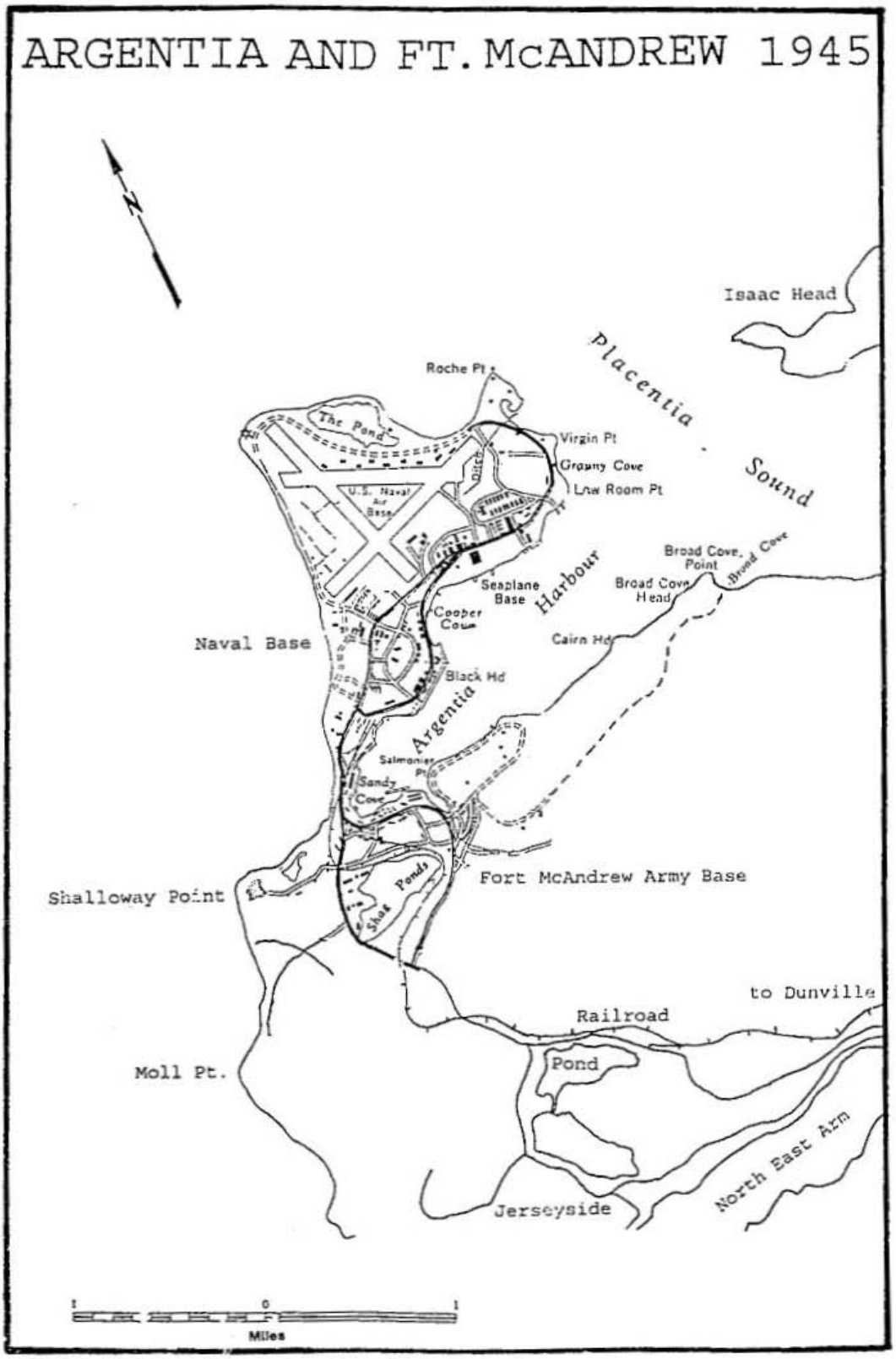
The Naval Base was built on the 948 acre Argentia Peninsula, under the leased bases agreement (Acts of the Honourable Commission of Government 1941). The initial estimate was that it would cost $9.5 million dollars (US) but by the end of the war $53.2

million (US) had been spent on the Base (United States Navy, 1979:14).

On January 9, 1941, the S.S. Richard Peck, a converted river ferry, arrived with engineers and construction workers for the project (Dzcuban, 1959:168). Because of a lack of suitable housing, the ship remained moored at dockside and served as an accommodations ship until sufficient temporary barracks had been finished. Many of the Newfoundlanders employed on the project lived aboard schooners and fishing boats moored in the harbour while awaiting construction of shore accommodations (AP NF 4-90).

The first priority of the construction crews was to erect barracks and mess halls to house and feed the growing workforce. Once this had been completed work progressed rapidly on the base. Before building the runways, it was necessary to remove a layer of peat which averaged twelve feet in thickness but extended up to twenty feet in places (United States Navy, 1979:5). It is estimated that 8.5 million cubic feet of peat was removed and dumped in the ocean (AP NF 4-90; United States Navy, 1979:5). Once the peat was removed, the underlying layer of glacial gravel served as the bed for the three concrete runways which were 5,000 feet long by 150 feet wide (AP NF 490). By September, one runway was available for emergency use (Bridle, 1974:305;315) (Map 11).

ARGENTIA AND FT. McANDREW 1945



Base Map: Surveys and Mapping Division, Department of Energy Mines and Resources, 1948 NTS 1:50000 Map 1N/5 Argentia.

MAP 11

Concurrent with the runway construction, the remainder of the Naval and Air Base was under construction. Wharf and docking facilities, workshops, machine shops, communication facilities, messes, barracks, recreation facilities, utilities, petroleum oil and lubricant storage along with warehouses were built to support the naval vessels which ranged from corvettes to battleships and aircraft carriers (Plate 11). In September a 7,000 ton floating drydock was added to service escort vessels (Bridle, 1974:309;317). On the aviation side, aircraft hangars, workshops, POL storage and warehouses were built to support land planes using the runways and flying boats that operated from the nearby harbour.

By February 1941, 600 Newfoundland workmen were employed on the site in addition to American contractors and naval personnel (Daily News, February 1941). On May 15, 1941, the USS Abemarles, a seaplane tender, arrived to support a squadron of Catalina twin engine patrol bombers that were based at Argentia for maritime reconnaissance (Navy Department, 1979:6). These aircraft, the first to be based at Argentia, took part in the search for the Bismarck shortly after their arrival. The USS Abemarles remained at Argentia for seaplane support until the ramp and shore hangars, shops and maintenance facilities were operational. Construction continued throughout 1941 and 1942 with 85 percent of the base completed and the runways operational by April 1942 (Bridle,

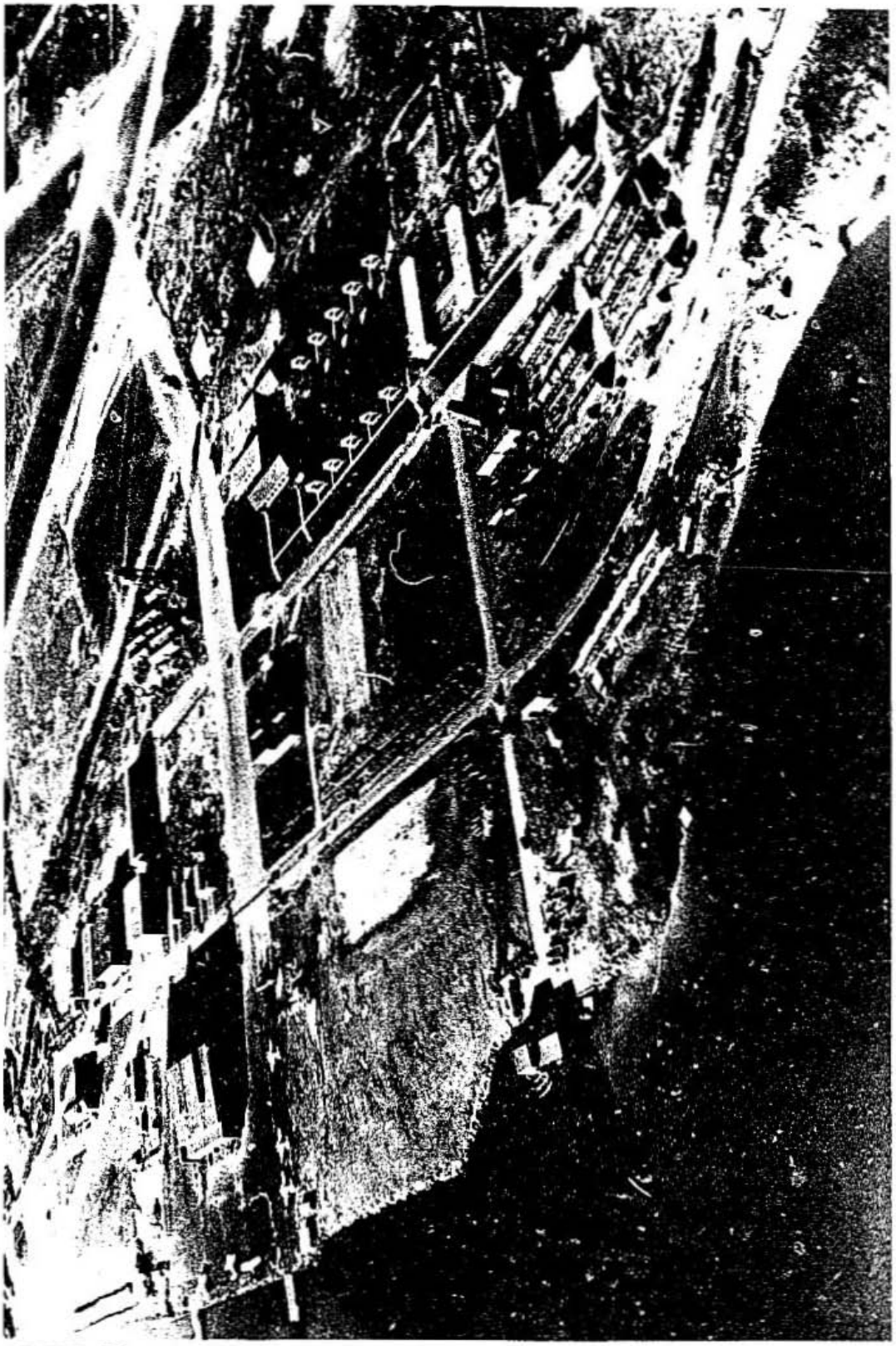


PLATE 11 ARGENTIA NAVAL BASE ca.1943

1974:307;316). Throughout the construction phase aviation and naval operations continued with buildings and facilities taken over from the contractors as they were completed. All major construction was completed by March 1943 (Dzcuban, 1959:168) (Plate 12).

Because of the base's location on the shore of the Atlantic Ocean in a relatively exposed position, it was necessary to protect the harbour and anchorage from submarine attack. To achieve this anti-torpedo nets were placed across Placentia Sound. To defend against aircraft and surface vessels the army troops stationed at the adjoining Ft. McAndrew manned coastal defense guns, searchlights and anti-aircraft artillery.

U S Army Base Fort McAndrew

To protect the naval and air base the military constructed a base at Marquise adjacent to the Argentia peninsula (Map 11). The initial plans called for a garrison of 2000 men. In early 1942 this figure was revised upward to 7,500 (Dzcuban, 1959:168). In May 1941, construction of the base known as Fort McAndrew began and shortly thereafter army troops and their equipment arrived from St. John's (Plate 13). These infantry, anti-aircraft and coastal artillery units were assigned to defend the area during construction. To carry out this mission mobile 155 mm artillery and supporting anti-

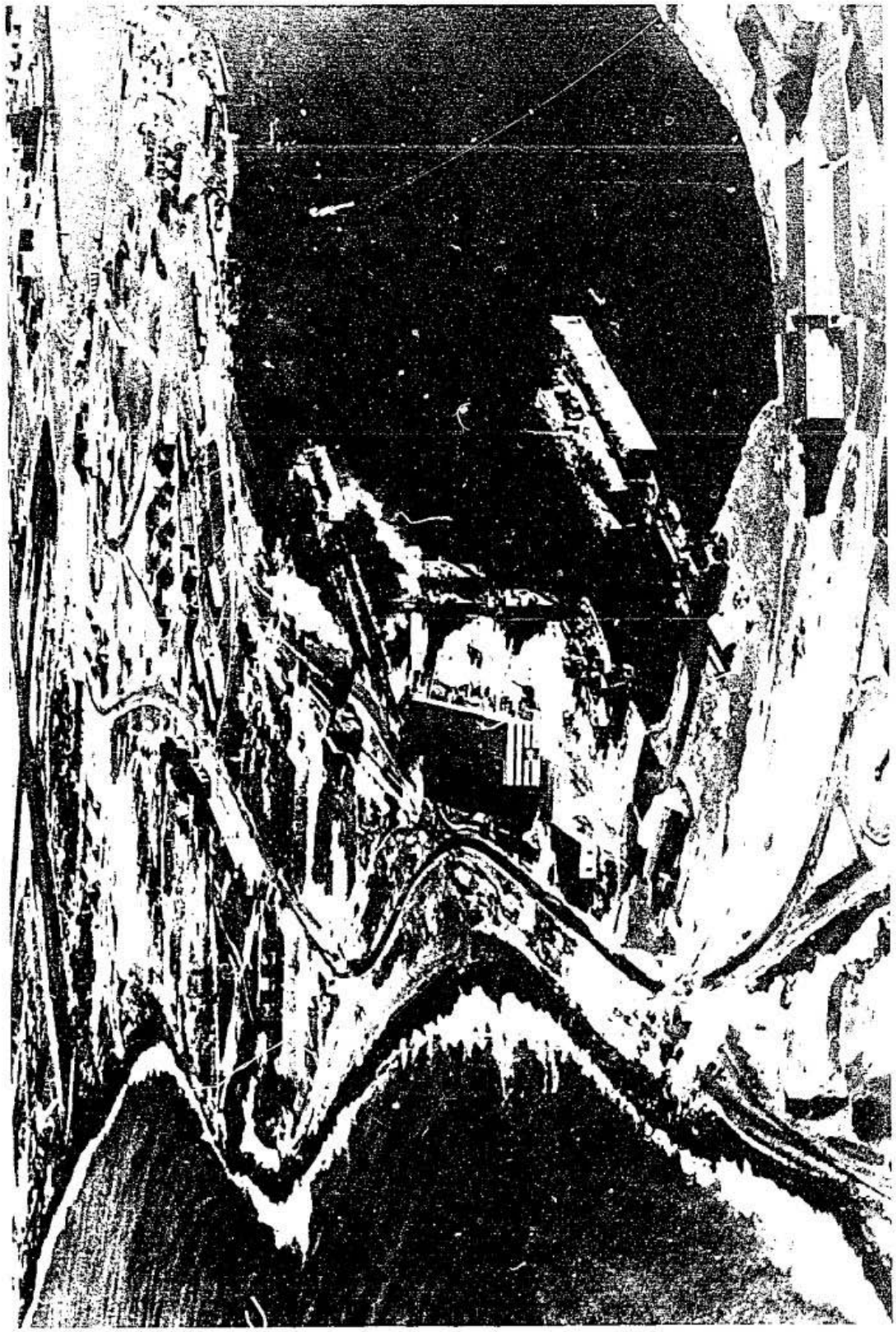


PLATE 12 ARGENTIA NAVAL BASE ca.1943

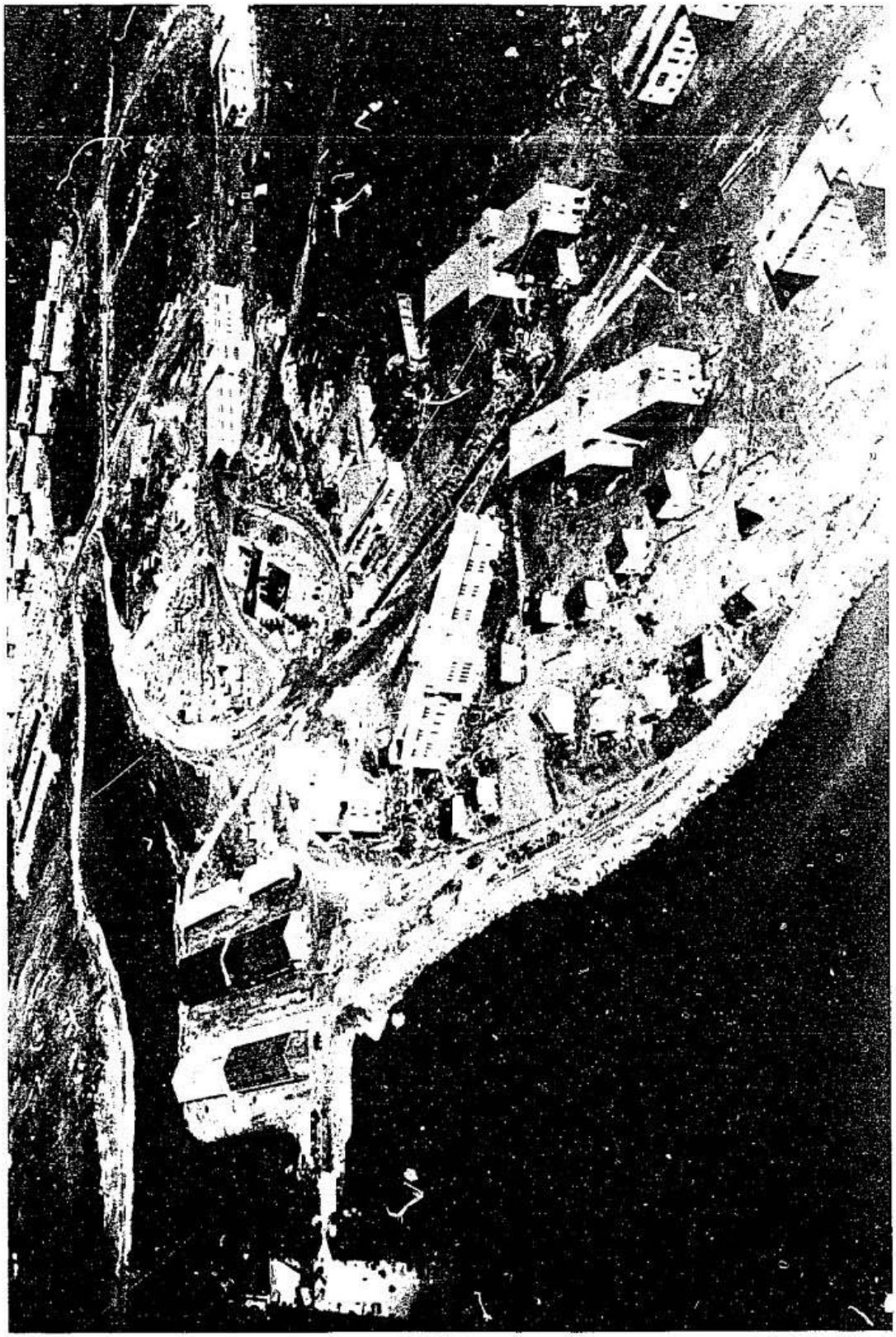


PLATE 13 FORT MCANDREW ca.1943

aircraft artillery guns were deployed around the Argentia peninsula and on the height of land to the east of Marquise to provide coverage of the seaward approaches to the bases. Farther out in the bay at Isaac Head and Fox Island anti-aircraft artillery and searchlights were established to defend the northern approaches to the base and anchorage.

Infantry defense positions were constructed on the perimeter of both bases and unmanned prepared positions were constructed overlooking any potential coastal landing site in the immediate vicinity. For security patrols were conducted throughout the area and along the roads and rail line leading to the base (Fort McAndrew Daily Diary, 1941).

USAAF Base Harmon

After the site was selected in October 1940, the first military engineers arrived in January 1941 to begin preliminary survey and engineering work (USAAF Harmon Field Daily Diary, 1941). At Stephenville 867 acres were acquired for the staging field (Acts of the Honourable Commission of Government, 1941). The initial plan called for a 250 man base with three 5000 foot long by 150 feet wide concrete runways. Harmon was originally intended as a temporary staging facility with navigation beacons, and communications to be used by short range aircraft flying from the

United States via Sydney to Gander. A secondary requirement was the capability of supporting twelve fighter aircraft. Because of the temporary nature of the facility the initial contract specified temporary wooden frame buildings (USAAF Harmon Field Daily Diary, 1941).

Construction on the base began on March 10, 1941 (Dzcuban. 1959:167). Military units consisting of a coastal artillery unit with mobile 155 mm artillery and Signal Corps personnel arrived shortly thereafter to set up coastal defenses and establish communications. An infantry company for base defense was transferred from St. John's where they had arrived with the UST Edmund B. Alexander. Because no accommodations existed in the area, a temporary tent encampment known as Camp Morris was set up near the community of Stephenville (USAAF Harmon Field Daily Diary, 1941). Before construction on the runways and base support buildings began it was necessary to build 21 miles of road to the DOSCO wharf at Aguathuna on the Port aux Port Peninsula and to the railway siding at Stephenville Crossing (NLPA J&D, file 14a; S4-2-3.1). These roads were essential for the movement of equipment, supplies, men and material to the construction site. These projects were quickly completed and construction progressed steadily through the spring and summer with emphasis on temporary barracks to accommodate military units and construction personnel. By the fall of 1941 the

three 150 foot wide by 6000 feet long runways although not completed were operational (AP A12156, 122-123) (Plate 14).

Early in 1942 the original concept of a temporary landing field was revised and the base was upgraded to accommodate 2,800 personnel instead of the original 250 (Dzcuban, 1959:168). The upgrade was a result of the general increase in military facilities with the United States' entry into the war as well as the need for additional airports in Newfoundland to handle the growing trans Atlantic air traffic from the United States in support of American military activity in the United Kingdom. The status of the facility was changed from temporary to permanent and thus resulted in a corresponding revision in the type and number of buildings constructed. To alleviate the supply problems for fuels a pipeline was constructed into St. Georges Bay for direct offloading of tankers. This reduced the dependency on the already overworked railway. Work continued through 1942 with final construction completed in March 1943 (Dzcuban, 1959:168) (Map 12).

For defense against naval attack the base was protected by a battery of two mobile 155mm coastal defense guns which were installed on the edge of the base overlooking the bay. From this site the guns with a range of 17,400 yards could effectively cover the seaward approach to the base and in the event of an overland attack be moved to bring the enemy under fire.

LEGEND PLATE 14

1 St. George's Bay
2 Town of Stephenville
3 Hangar
4 USAAF Base

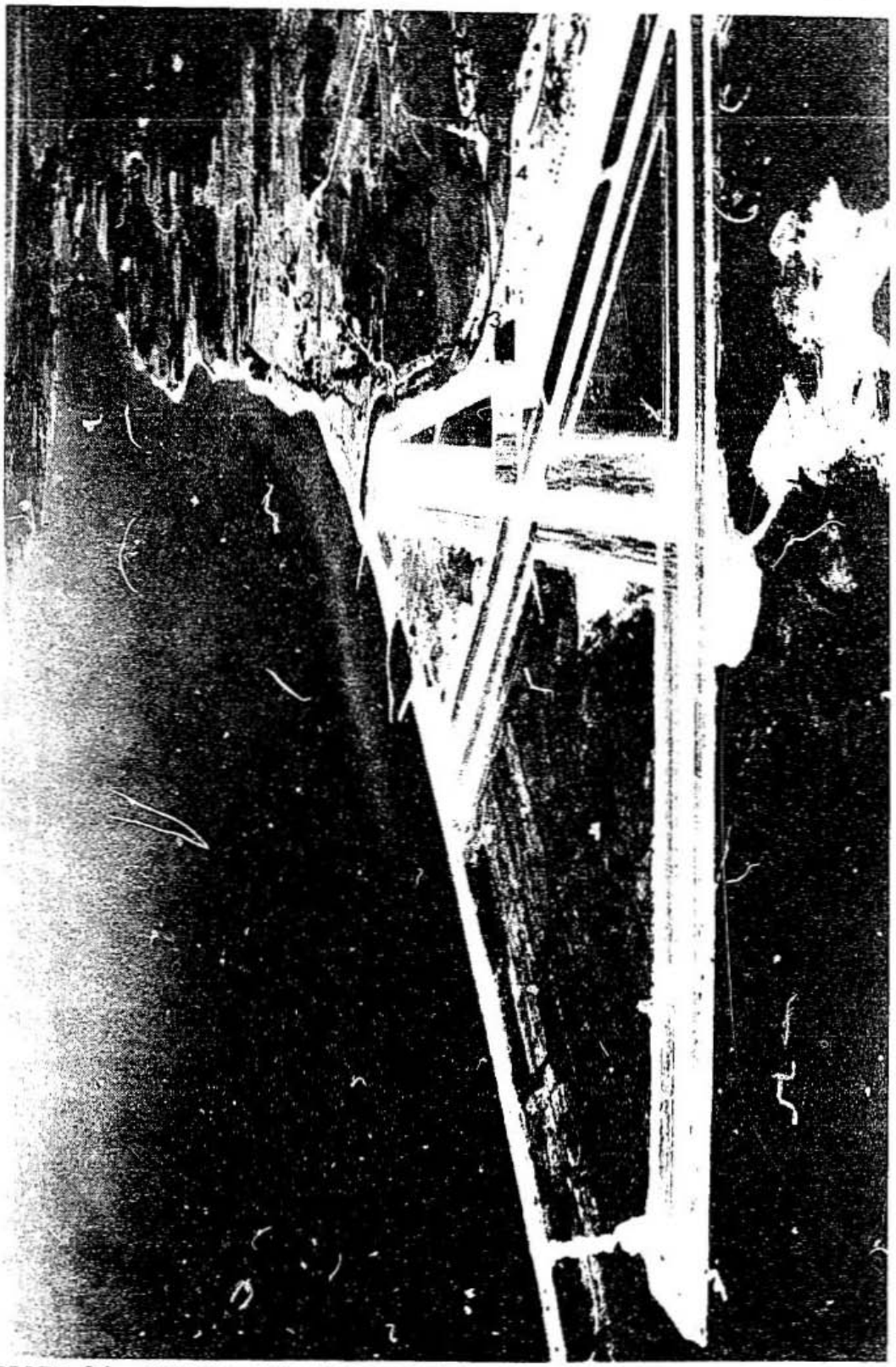


PLATE 14 HARMON AIR FORCE BASE ca.1945

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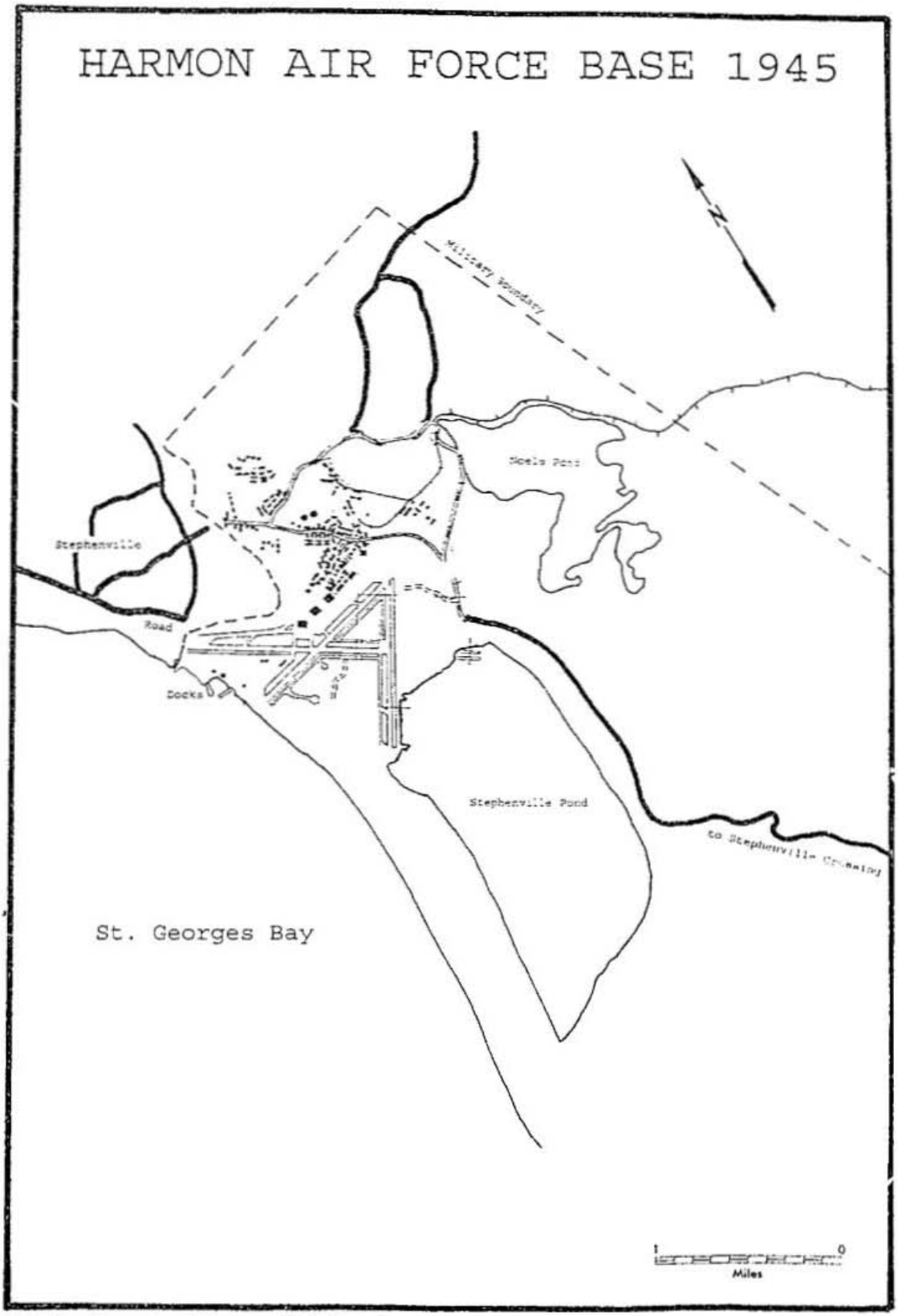


Base Map:Surveys and Mapping Division, Department of Energy Mines and Resources, 1948 NTS 1:50000 Map 12B/10 Stephenville.

MAP 12

USAAF Base Gander

The first American personnel to be stationed outside of the Leased Bases areas were a contingent of weather and communications personnel who arrived in Gander from St. John's on March 9, 1941 (USAAF Gander Field Daily Diary, 1941). To bolster the reconnaissance and strike capabilities of the Newfoundland garrison the United States moved six obsolescent B-18 Bolo maritime patroi bombers to Gander. These six aircraft of the 21st reconnaissance Squadron conducted flights over the North Atlantic in the expectation and hope that they could provide an early warning of any potential attack by Germany.

Operationally the first American land based trans-ocean flight occurred on July 2, 1941 when a USAAF transport on a flight from Washington to Prestwick Scotland passed through Gander (USAAF Gander Field Daily Diary, 1941). These flights, for VIPs and priority cargo, would continue through Gander and Goose Bay until the end of the war. The movement of tactical aircraft did not start until after the United States entered the war in December 1941 and decided to set up an air force in the United Kingdom. The first flight of tactical aircraft occurred on August 15, 1942 when a squadron of B-17s passed through Gander on their way to the United Kingdom (USAAF Gander Field Daily Diary, 1942). Long range heavy bombers had no difficulty flying the ocean from Gander to the United Kingdom

and after the entry of the United States into the war, the support of transient combat aircraft became the primary mission of the American base at Gander (USAAF Gander Daily Diary, 1942). These units were tenants of the RCAF and shared their facilities. This arrangement did not prove satisfactory as friction developed between the services as both had their own standards and procedures. When the United States determined that a permanent presence would be required in Gander, permission was received from Canada to construct its own base on the south side of the runways (Map 8; Plate 7).

USAAF Base Goose Bay

The first American personnel to be stationed in Goose Bay were from the Ferry Division and arrived in April 1942 to prepare for the first movement code named Bolero, of B-17 bombers and P-38 fighter aircraft of the 8th Airforce to England to form the basis for the American air war against Germany (USAAF Goose Bay Daily Diary, 1942). To support the flights the United States established its own communications and navigation facilities as well as maintenance units to service the aircraft. These personnel were initially billeted with the RCAF in already crowded facilities, which resulted in a certain amount of friction between the services and a

desire by the United States to build and maintain its own base. With the United States now a full combatant in the war supporting a heavy bomber Air Force in the United Kingdom, it was clear that there would now be considerable and constant air traffic between North America and the United Kingdom. A permanent presence in Goose Bay was now going to be needed. The U.S. requested and received permission from Canada to construct its own base designed to house 1000 permanent and 1200 temporary personnel, on the west side of the runways (Craven and Cate, 1964:346). Initial construction was carried out using personnel who were on site finishing the Canadian base. Construction progressed rapidly and the base was ready for occupancy in November (USAAF Goose Bay Daily Diary 1942). As with the Canadian base it was a self-contained unit with all the facilities of a small town including heating plant, 150 bed hospital, library, recreation hall including pool, movie theater and retail store (Plate 15). Three heated hangars were constructed on the flight line for all weather maintenance operations (Map 10).

By June there were seven officers and 45 enlisted men at Goose. June saw 62 aircraft depart for the United Kingdom, July saw 208 and August, 80. In September the number was up to 163 with 133 in October for a total of 662 in 1942 (USAF Goose Bay Daily Diary 1942; Milner, 1947). Because of winter weather

LEGEND PLATE 15

1 RCAF Base
2 USAF Base
3 Aircraft Parking
4 Ammunition Storage

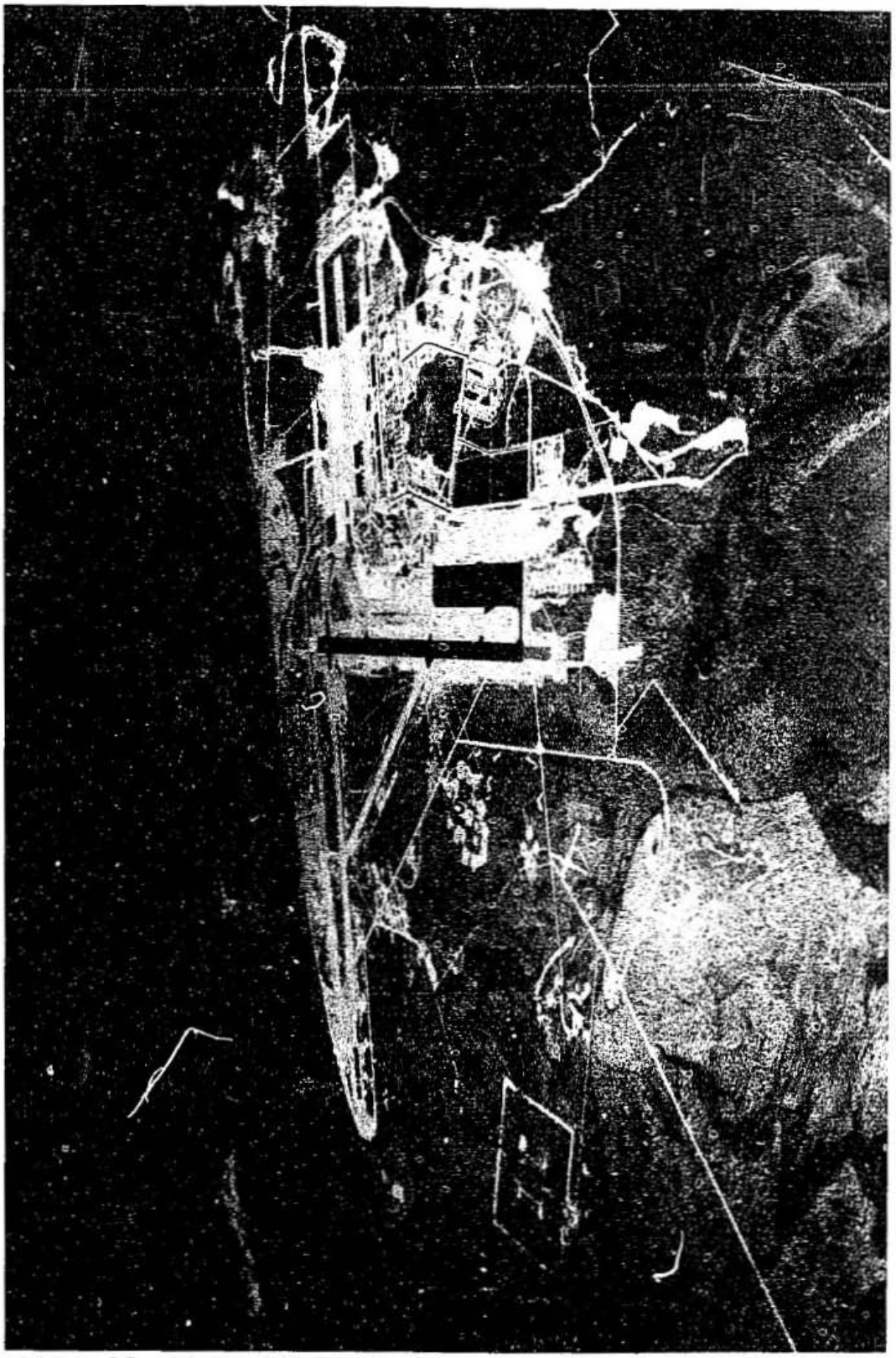


PLATE 15 GOOSE AIR FORCE BASES ca. 1955

conditions the United States curtailed trans-Atlantic flying operations for the year in November.

SUMMARY

By June 1942 all the bases had been established and were operational, although construction would continue until the end of the war. In two years Newfoundland had acquired 14 military bases which included four airports and two naval bases. These facilities would form the basis of the military landscape for the remainder of the war and continue as a integral component of the military and civilian landscape into the 1990's.

CHAPTER IV

CONSOLIDATION AND DIFFUSION: JANUARY 1941-DECEMBER 1943.

STRATEGIC CONSIDERATIONS

For the Allies, 1942 was a pivitol year in World War II. It was the year in which they halted the expansion and conquests of the Axis powers. In the Pacific the United States in June stopped the Japanese advance into the Central Pacific at Midway Island and in the Southwest at Guadacanal in the Solomon Islands. In North Africa the German thrust towards Egypt was defeated at the November Battle of El Alamein. In the Soviet Union the German Army's advance was stopped at Stalingrad on the Volga River. With these defeats, except for localized successes, the Axis Powers were never to regain the strategic offensive. The strategic initiative in these theaters now rested with the Allies.

By 1942 the threat of invasion of Newfoundland and North America had passed. The bulk of the German Army was tied up in battle with the Soviet Union in Eastern Europe and Germany's capital ships were either sunk or blockaded in the ports of Europe. The main threat to North America was now reduced to either bombardment by

cruisers or raids by small submarine borne parties. Given the increased size and readiness of the Allied forces such raids, while having the potential to inflict considerable damage and casualties, would be of little military consequence. Their main value would be in reducing civilian morale and creating demands for stationing a larger proportion of the military forces destined for Europe at home to protect against future attacks.

In the North Atlantic the Battle of the Atlantic continued as a war of attrition. The year 1942 was particularly bad for the Allies with losses of merchant shipping and war ships mounting. Submarine warfare reached the very shores of Newfoundland. On January 25 the Greek vessel Mount Kithern was torpedoed and sunk two miles off St. John's (Hadley, 1986:73). In March two torpedoes aimed into St. John's harbour missed their target and detonated on either side of the harbour entrance at Fort Amherst and the Outer Battery (Dzcuban, 1959:175). On September 5, two ore carriers were torpedoed and sunk in Wabana Harbour (Hadley, 1986:116). On October 14 the passenger ferry SS Caribou was torpedoed and sunk 40 miles from Port aux Basques with the loss of 137 lives (How, 1988). On November 2 Wabana anchorage was again attacked with two more ore carriers sunk and the loading pier damaged by a torpedo that missed its intended target (Hadley, 1986:152). In the shipping lanes submarines continued to threaten the ability of the

Allied powers to supply the United Kingdom and to build up military strength in the United Kingdom. In fact Allied control of the Atlantic was very much in doubt with shipping losses uncomfortably close to exceeding new construction (Morison, 1964; Tucker, 1952; Schull, 1961).

It is accepted among historians Churchill, Schull and Morison that the war in the Atlantic reached its peak during the first four months of 1943. Shipping losses climbed steadily and reached 627,000 tonnes in March. While this was not the highest monthly toll of the war, 75 percent of the losses were from convoys which were under the best protection the Allies could provide and the tonnage sunk was greater than the entire shipbuilding effort of the Allies (Schull, 1961:170). These factors caused considerable consternation by the Allied Powers.

In April Allied tactics, new weapons and electronic technology and the sheer weight of numbers combined to gain the upper hand in the battle of attrition and the toll of submarines began to rise rapidly. In May submarine losses for the first time exceeded new submarines coming into service (Schull,1961:176). By the end of May German submarine losses were so high that the U-boat forces in the Atlantic were temporarily withdrawn back to Germany and occupied France to refit and regroup (Schull, 1961:176). For the remainder of the war, although the Battle of the Atlantic continued

until the very end of hostilities, losses to submarine attack dropped significantly and Allied control of the sea lanes, while challenged, was never again in jeopardy. Nevertheless German naval activity continued in Newfoundland waters for some time thereafter, renewing concerns about Newfoundland's defense.

In October 1943 the Germans established an automatic weather station at Martin Bay near the northern tip of Labrador. This station which only transmitted for a short period of time was not discovered until July 1981 (Douglas, 1982) (Map 14). The Canadian and American records are silent on this station which would support the conclusion that the Allies were unaware of the station through accidental discovery or the interception of its signals. While this station had little military significance it illustrates the great difficulty in patrolling the thousands of miles of coastline of Newfoundland and Labrador.

On October 11 a mine field was laid by U-Boat off the entrance to St. John's harbour. While the navy accounted for 34 of a possible 64 mines, two of the undetected mines sank ore carriers from Bell Island while the remainder were never found (Hadley, 1986:190-191). These events, in addition to the torpedoing and sinking of ships within sight of land off the Southern Shore, Cape Race, Cape Spear, and the Strait of Belle Isle and a multitude of U-Boat sightings both real and imagined brought home the war to

Newfoundlanders for a longer period than for any other North Americans (Hadley, 1986; NLPA J&D GN 38 files).

For the military forces in Newfoundland, although strong defense forces were still important, the emphasis of military strategy moved from defending North America to supporting the air bridge between North America and Europe and naval and air units in the Battle of the Atlantic.

BUILDING THE STATIONS

The establishment of six large bases by Canada and the United States was not the only military presence in Newfoundland. These bases could not function in isolation; therefore, a considerable number of smaller stations along with the necessary supporting infrastructure was necessary throughout the country. The large spatial dimensions of air and naval operations throughout the North Atlantic, combined with the need to protect the bases, necessitated a large network of smaller stations and communication corridors to integrate the defense of Newfoundland with the rest of North America as well as North Atlantic naval and air operations.

Lines of communication were essential not only between the various bases and stations but also between the various armed services and the Command Headquarters in Canada and the United

States. In addition to ground based telephone and telex lines, very high frequency and short wave radio transmitters and receivers were necessary for ground to ground, air to ground and ground to sea communications.

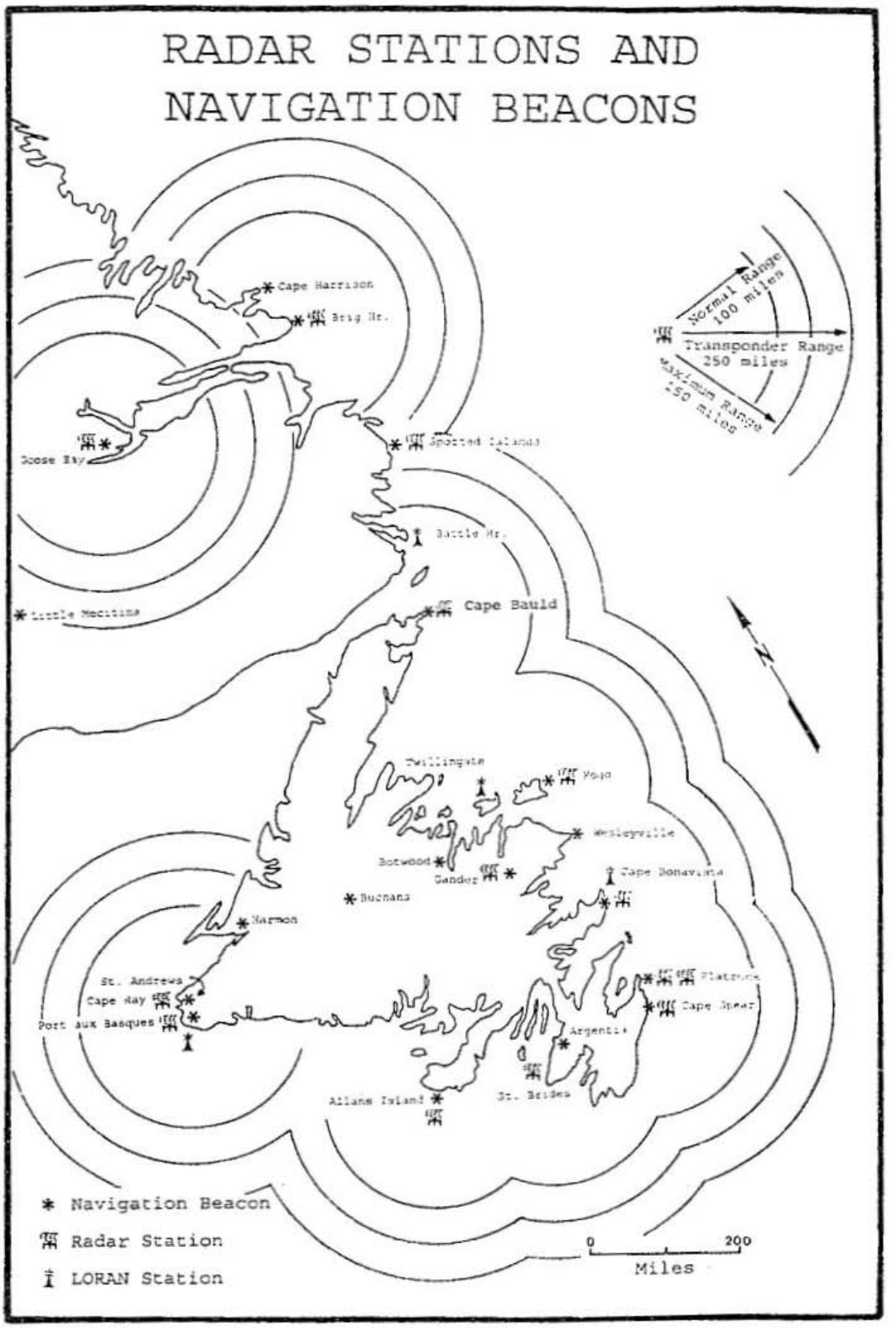
The inference that one can draw is that the movement of supplies, personnel and equipment both to defend the country and support the bases necessitated the construction of new roads and the upgrading and maintenance of others. The railroad which was the country's primary mode of land transportation fulfilled the same role for the military of both Canada and the United States. The military quickly became a permanent presence on the roads and rails. To monitor and collect meteorological data for forecasters on the bases, weather stations were set up in distant points throughout the country.

To provide for the local defense of the bases, prepared coastal and anti-aircraft artillery and infantry positions were established. These positions were up to 15 miles outward from the bases and ranged from permanent coastal artillery sites to unmanned prepared infantry and artillery sites for occupancy in an emergency.

The construction of these secondary stations began in parallel with the construction of the bases because the bases and their attached military units could not operate in isolation without

local defense installations and communications. For example, the RCAF Air Base at Gander could not effectively operate without the network of stations providing navigation beacons, meteorological reports, communications with aircraft, other bases and headquarters in Newfoundland and Canada and rail and sea supply lines.

The military landscape in Newfoundland evolved as an interconnected network of bases, stations and communication corridors designed to support operations at the Newfoundland or micro level as well as the macro level within the North Atlantic (Map 13). Most stations and bases, had a dual role even though they had originally been intended for a single purpose. Once a facility was constructed it often took on a secondary use. For example the radar sites were also used to maintain air navigation beacons and report meteorological observations. Other sites had only a singular use. The coastal artillery position at Cape Spear was designed for the local defense of St. John's; conversely the Loran Station at Cape Bonavista was designed primarily for the benefit of the North Atlantic with a secondary use for navigation in local waters.


RADAR STATIONS AND
NAVIGATION BEACONS
Cape Harrison
Brig Hr.
Goose Bay
Spotted Islands
Battle Hr.
Little Mecatina
Cape Bauld
Twillingate
Point
Wesleyville
Botwood
Gander
Cape Bonavista
Buchans
Harmon
St. Andrews
Cape Ray
Port aux Basques
Argentia
Allans Island
St. Brides
Normal Range
100 miles
Transponder Range
250 miles
Maximum Range
150 miles
N
Navigation Beacon
Radar Station
LORAN Station
0
200
Miles

MAP 13

CANADIAN STATIONS

Bell Island Battery

Bell Island was the site of the first Canadian station outside of the main base areas at Gander and Botwood. In fact the planning and site preparation for the establishment of the coastal defense battery began before Canada assumed the defense of Gander and Botwood, but because of delays in obtaining the required guns it was late in the summer of 1940 before the battery was operational. This was a priority project because of the strategic value of iron ore to the war effort of the British Empire. At the request of Newfoundland, Canada supplied 4.7 inch coastal defense guns for the defense of the Bell Island Iron Ore Mines. Canada was prompt in responding to this request because these mines were the sole iron ore supplier for the Sydney steel mill which accounted for 33 percent of Canadian steel production. In the spring of 1940 military engineers arrived at Bell Island to prepare gun platforms on the cliffs overlooking the loading pier and anchorage. By late 1940 the guns were operational and initially manned by the Canadian Army while the Newfoundland Militia was being trained in their operation (Bridle, 1974:152;142).

Bay Bulls Marine Railway and Dockyard

By the end of 1941 St. John's harbour and its shore facilities were being utilized to the maximum extent possible. The ever increasing number of merchant ships requiring repairs as a result of enemy action, storm damage, or wear from constant use under wartime conditions was limiting the space and time available at the dry dock for naval vessels. To allow the dock yard to concentrate on servicing merchant vessels the navy decided to construct a 3000 ton marine railway to service the escorts. Escort vessels were smaller than merchant vessels and it was possible to remove them from the water by means of a marine railway, thus reducing the level of demand for the dry dock. However, the limited size of St. John's harbour and the lack of available land made it impossible to locate the new facility there. So the fishing village of Bay Bulls which had a fine deep water port, and was located 17 road miles south of St. John's was selected as the site of the new repair facility (Map 7). In July 1942 construction started on the $ 2.14 million (Can.) marine railway, supporting shore facilities and anchorage, although formal permission for the project was not granted by Newfoundland until August (Bridle, 1974:606;606).

The station which was built adjacent to the marine haulout consisted of workshops, administration offices, barracks, sick bay and water supply (AP A13268, 95-96).

Defensively the base was under the partial protection of the Cape Spear battery. Local batteries were not considered necessary because the threat of bombardment by a naval raider was now considered unlikely. The major threat was now considered to be from submarines. As the harbour was exposed to the open sea, anti-torpedo baffles were installed to protect the base and anchorage.

Botwood Naval Station

In Canada's initial naval plans for Newfoundland it was intended to have a small base and a defended anchorage with anti-submarine vessels. With the change in naval strategy in 1941 and the creation of the Newfoundland Escort Force these plans were dropped. The development of St. John's as a major base and the availability of Argentia resulted in the scaling down of the base planned for Botwood. Only an administration building, wharf and examination service were put in place. The station served throughout the war in support of the adjoining air base and the port of Botwood.

Harbour Grace Naval Station

A small naval station and communications site with direction finding equipment was set up at Harbour Grace in the summer of 1941. It was used in conjunction with training exercises for the vessels of the Newfoundland Escort Forces based in St. John's. The training "target" submarine was based here. The wireless station was built on the site of the Harbour Grace air strip which had played prominently in pioneer trans- Atlantic flights in the late 1920's and early 1930's.

Lewisporte Fuel Terminal

Lewisporte, like Botwood, served as a port of entry for fuel supplies for Gander Airport. In addition to the ocean terminal for offloading fuel there was a fuel storage tank farm. To protect these facilities, Canada dispatched an infantry unit of 13 officers and 255 other ranks to the town in the spring of 1941. This force consisting of coastal artillery, infantry and administration support personnel was garrisoned in temporary wood frame buildings erected for this purpose (Bridle, 1974:639; 636). Defensive positions were constructed for infantry weapons near the wharf and fuel storage facilities.

Rigolet Battery

The seaward approach to Goose Bay is through Lake Melville. To protect it, the Canadian Army erected a coastal artillery battery at Rigolet on the narrow isthmus between the Atlantic Ocean and the lake. This battery commanded the narrows and served to guard the sea approach to the air base at Goose Bay during the shipping season. The ice in the lake could be up to eight feet thick, and this precluded any surface or submarine operations, protecting Goose Bay more effectively than the coastal artillery battery. As a result the majority of the battery personnel were withdrawn after freeze up in November, returning only in May. A small detachment of infantry and artillery personnel remained to provide security and maintain the guns.

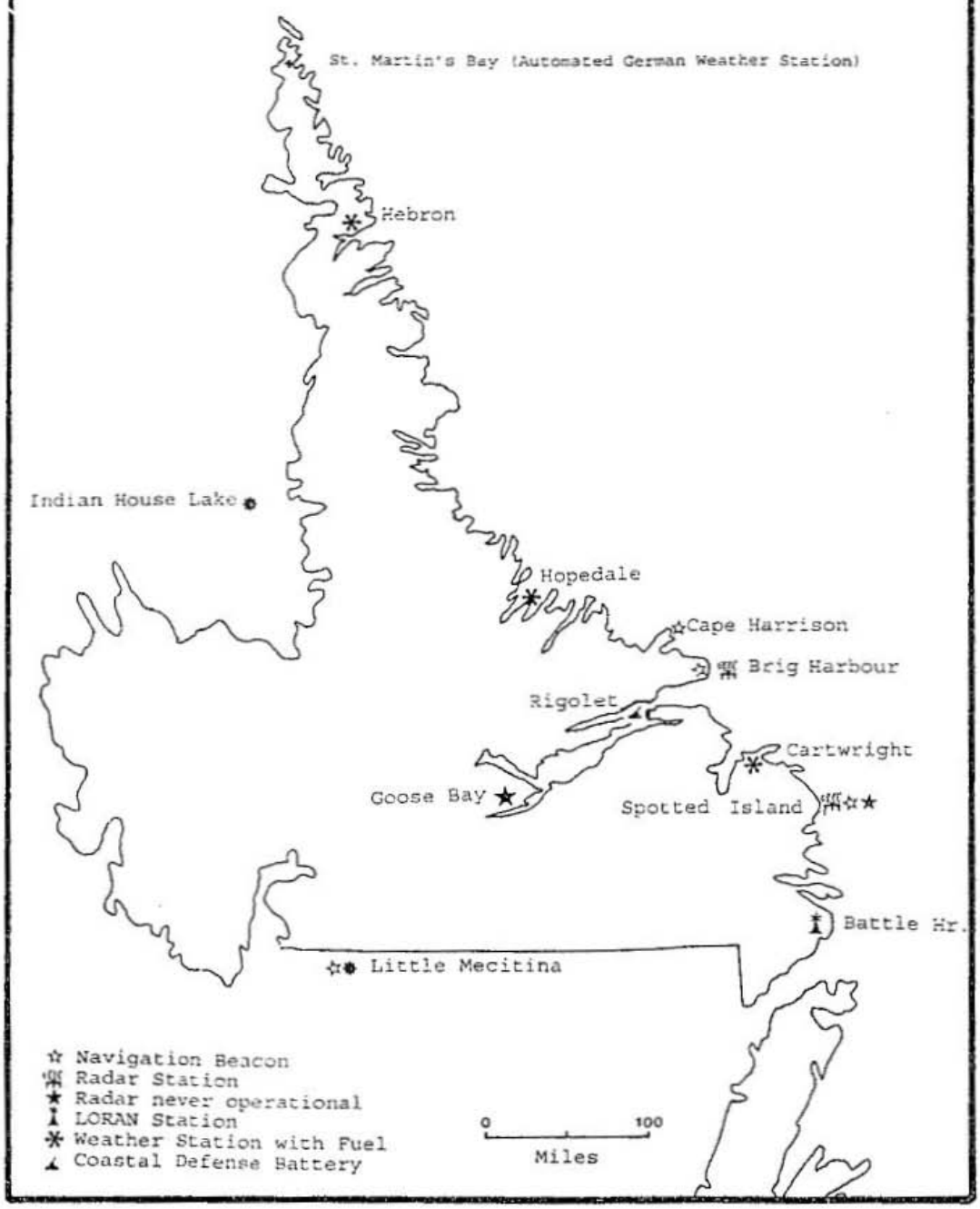
Construction of the battery started in May of 1942 as soon as ships could reach Rigolet and it was manned and operational by June 1942 (Bridle, 1974:379;390). This station, which had to be supplied from Goose Bay, consisted of 200 infantry and artillery personnel. For unknown reasons, Canada had not sought permission from nor even advised Newfoundland that a station was to be constructed here (Bridle, 1974:380;391). The existence of the station came to Newfoundland's attention only through a routine report filed by a member of the Newfoundland Rangers. While no

explanation can be found for Canada's not having sought Newfoundland's permission to build the station it may be surmised to have been given because Rigolet was part of the outer defenses of Goose Bay. Permission to build the station was therefore contained in the general approval to build Goose Bay. However the incident was typical of the way in which the "foreign powers" dealt with Newfoundland.

RCAF Refuelling and Meteorological Stations

To provide data for meteorological forecasting and fuel caches for sea planes conducting reconnaissance along the coast of Labrador and the Northern Peninsula of Newfoundland, Canada, with Newfoundland's permission, in the spring of 1941 developed a network of small four man stations at Roddickton, Cartwright, Hopedale and Hebron (Map 14). Each station consisted of a single building that served as living quarters and for operations. Aviation fuel was stored outside on the edge of the harbour in 45 gallon drums for ease of handling and transportation. Weather observations were recorded and radioed to the Gander meteorological office along with any reports received from the local Aircraft Detection Corps observers. The stations were set up at the beginning of the shipping

LABRADOR MILITARY INFASTRUCTURE



MAP 14

season in the spring of 1941 and closed in the fall at the end of the shipping season (Bridle, 1974: 663;655).

Communications

The RCAF was the first of the military forces to establish its own telephone and telex system. To provide for secure reliable ground communications, in the fall of 1941 a land line linking Botwood, Gander and St. John's was installed. This line used the existing telegraph poles that paralleled the railway (NLPA S-4-2-2). For radio communications the RCAF established transmitters and receivers at each base for ground to air communications. Although these systems were primarily designed for ground-to-air use they also provided a secondary ground-to-ground communications network, especially for remote stations that had no telephone or telex lines (Map 15).

By 1942 operational requirements required a reliable and secure telephone and telex link between the naval and air headquarters in St. John's and their respective headquarters in Halifax. To facilitate this project Canada obtained circuits on the American Long Lines that crossed the country from St. John's to Stephenville. From Stephenville Crossing the United States agreed to extend the line to Table Mountain near Port aux Basques, where a

AMERICAN AND CANADIAN COMMUNICATIONS INFRASTRUCTURE 1945

MAP 15

Frequency Modulation (FM) transmitter-receiver station was built (MacKinnon, 1947:219). For the connection to Canada instead of laying a cable across the Cabot Strait FM radio was used. Because FM radio waves travel in a straight line, an unobstructed optical or line of sight path between the stations transmitting and receiving the signal was necessary. To achieve this, the southwestern terminus was established on Table Mountain near St. Andrews. This site was the highest point of land on the southwest coast of Newfoundland and offered the necessary elevation to provide an optical transmission path to Cape Breton unaffected by the curvature of the earth. At this station the signal was converted into a FM radio signal and transmitted to a receiver-transmitter station in Cape Breton where it was relayed through the North American communication network. For communications from Canada, the FM signal was transmitted from Cape Breton, received at Table Mountain, converted into a telephone or teletype signal and retransmitted to its destination via the long lines.

Air Navigation Beacons

Air navigation beacons were an important component of the infrastructure necessary to allow operational flights in most types of weather (Map 13). Without these beacons aircraft in

Newfoundland would have been grounded much of the time because the inclement weather did not lend itself to Direct Navigation. Direct Navigation was the most rudimentary form of navigation that required constant contact with the ground, water, or celestial bodies to determine location. When in contact with the ground, physical features were used to determine location; when over water, the course was charted and estimated using drift sighting from flares fired into the air or flare pots dropped into the water to determine drift of the aircraft away from the proposed flight path (Private Communication: Wm. Parrott Sr.). The third aid to navigation was celestial. This required clear weather to obtain fixes from the sun or stars to determine the aircraft's position. When at sea on convoy patrol, this supplemented direct navigation and was an added benefit whenever available. Unfortunately, given the typical weather conditions prevalent in the North Atlantic and the inherent need of marine patrol bombers to fly low at most times, celestial navigation was a luxury. Direct navigation was inherently prone to errors especially in the inclement weather often encountered off Newfoundland which often obscured any observations both terrestrial and celestial thereby placing an exorbitant amount of work on the aircraft crew, the navigator in particular.

When the RCAF first arrived in Newfoundland in 1940, the only navigational beacons available were those at Gander and Botwood that were installed for trans-Atlantic flights. Initial RCAF operations were conducted by a combination of direct navigation and bearings of fixes obtained from the existing beacons at Botwood and Gander along with the commercial AM radio stations at St. John's whenever possible. This made for erratic navigation and large numbers of non flying days because of the weather. To address these problems the RCAF established additional beacons at each new base and many of the stations it opened throughout the country. After the RCAF assumed control of Botwood and Gander in 1940 the beacons were upgraded for military use. In late 1941 beacons were installed at Torbay and Goose Bay, and then at Cape Bauld, Port aux Basques, Spotted Islands and Brig Harbour in 1943 (RCAF Radar Station Daily Diaries, 1942-1945). To ensure coverage in the event of failure and to provide aircraft with as many bearings as possible the coverage of the beacons was intentionally overlapped. Beacons were also established at St. Andrews near Port aux Basques and at Buchans in central Newfoundland. Buchans was also the site of an emergency landing field. These facilities were designed for Trans Canada Airlines flights between Sydney and Harmon and on to Gander and Torbay, but their military use was obvious.

The establishment of beacons eliminated much of the risk associated with navigation in Newfoundland and over the North Atlantic. By tuning into several beacons an aircraft could determine its exact position, under ideal conditions, in a matter of seconds. For the aircraft, because the system was passive, that is the aircraft only received a signal and did not emit one, there was no concern that its position would be compromised to any submarines in the area. As with other early electronics, this system was plagued by numerous problems that prevented the aircraft gaining a bearing on a given beacon. Common problems that made reception difficult were weather, sun spots, electronic failures and weak transmitters. Both Canada and the United States established beacons for the use of their aircraft, but the frequency could be received by aircraft of both nations.

The navigation beacons served a dual role in navigation. The first was to permit an aircraft to return to base if the signal emanated from an air base. The second, if the beacon was in a location other than an airport, was to provide a navigational checkpoint. By obtaining a bearing or fix on two or more beacons an aircraft's navigator could determine the aircraft's position by plotting the bearings to find the location where they crossed. While fixes from two stations was generally considered acceptable, plots

from three stations was the preferred solution to ensure accuracy (Private Communication: Wm. Parrott Sr.).

In addition to the beacons each base and many of the stations had a direction finding antenna as part of their radio equipment. This allowed the operator to tune the antenna to the direction of a transmitting aircraft or ship. While direction could be determined from a bearing taken by a single station, the range could not. To determine the range and thus location a second bearing from another ground station was necessary. This permitted the broadcasting position to be determined by plotting the bearings. This was particularly useful in assisting lost aircraft, but it was also used extensively in monitoring German submarine communications in the Atlantic. Bearings on submarines picked up by Newfoundland direction finding stations were passed on to the navy and combined with bearings obtained from stations throughout the North Atlantic littoral and ships at sea to locate submarines. This allowed the navy and air force to dedicate resources to specified locations by hunting known submarines instead of patrolling thousands of miles of ocean and to detour convoys away from known concentrations of submarines.

RCAF Radar Stations

To provide early warning in the event of an air attack and to serve as a controller for vectoring fighter aircraft, in 1942 the RCAF started construction on a network of radar stations along the coast of Labrador and Newfoundland to link with another chain of radar stations in Nova Scotia which together provided coverage of the Atlantic approaches to Canada (Map 13). Plans for the system began in 1942 but it was not until early 1943 that radar equipment was installed and operational at all stations (RCAF Radar Stations Daily Diaries 1942-43).

There were two types of radar used in Newfoundland: The first was Ground Control Intercept. This radar was used for controlling fighter aircraft to vector them to the target and as a landing aid to assist aircraft to land in poor visibility. A third limited use was for early warning. These radars were installed at Gander, Torbay and Goose Bay. The second was the Early Warning Radar. This radar was of longer range than the ground control intercept radar and was designed to monitor the air approaches to Newfoundland, provide early warning of an air attack or to a lesser degree naval attack. To ensure the optimum range and coverage the units were installed on prominent headlands along the coast. The northern most station was at Brig Harbour at the mouth of Lake

Melville on the Labrador Coast which monitored the approach to Goose Bay. A second Labrador station was established on the southern Labrador coast at Spotted Islands. In Newfoundland stations were set up at Cape Bauld on the tip of the Northern Peninsula, Flatrock near St. John's and at Port aux Basques on the south west coast. These stations combined with the USAAF radars on Fogo Island on the northeast coast, Cape Spear east of St. John's, St. Brides at the entrance to Placentia Bay and Allan's Island on the south end of the Burin Peninsula provided a 100 mile early warning zone from Hopedale on the Labrador coast through the northeast and southern approaches to Newfoundland.

The early warning or search radar used by the Canada had a dependable range of 100 miles (RCAF Radar Stations Daily Diaries, 1942-1945). The word dependable is used to describe the range that could be relied on when the unit was operational. There were many factors or combination of factors that could reduce, extend the range or conversely knock the radar out altogether. While the radar was designed with an effective range of 150 miles many factors or combination of factors combined to reduce the range or prevent the radar from functioning for long periods of time (RCAF Radar Stations Daily Diaries, 1942-45). Factors such as wind, atmospheric conditions, sun spots, antenna ice, power supply, technical problems with the tubes, circuits and magnetron in conjunction with the skill

of the operator and maintenance personnel all affected range and clarity of signal.

The single most important factor in determining the effectiveness of the radar was location. It is not surprising that Port aux Basques obtained the greatest ranges because it was located on the highest elevation overlooking the sea which provided for a greater range before the signal was affected by the curvature of the earth. Conversely, the radars at Gander and Goose Bay reported the shortest ranges because they were limited by the topography of the surrounding countryside with its many hills. This caused shadows or blind spots which limited the maximum ranges under optimum conditions to under one hundred miles. The station at Allans Island reported that the offshore islands of St. Pierre and Miquelon left a blind spot or shadow on the scope (RCAF Station Allans Island Daily Diary, 1944-45). While the units had a reliable range of 100 miles, operational ranges of up to 150 miles were obtained by all coastal sites during optimum operating conditions.

In addition to their primary function of early warning, the radar stations served to monitor Allied air traffic. Besides plotting the return signal reflected by the target the radars were able to track allied aircraft equipped with Identification Friend or Foe transporters. These devices transmitted a signal that the radar antenna picked up and displayed on the radar screen. Because this

signal was transmitted by the target it was stronger than the signal returning to the station after reflecting from the airplane and therefore could be tracked at greater distances. Transponder equipped aircraft were plotted routinely at 150 miles and frequently up to 240 miles (RCAF No.14 Radar Unit Flatrock Daily Diary, 1944-45). The equipping of aircraft with transponders increased the monitoring of their movements and effectively identified them as Allied.

Each radar unit consisted of basically the same equipment and facilities. The center of the station was the rotating mast for the radar antenna that was mounted on a steel or wooden tower. Because the Brig Harbour, Spotted Island and Cape Bauld sites were in isolated locations, it was necessary that these sites have additional storage to be self-sufficient in fuel, food and spare parts for extended periods of time. Barracks, storehouses, power house, transmitter-receiver building and support infrastructure for approximately 40 personnel were provided. Each station, in addition to the radar, housed an air navigation beacon along with meteorological instruments for weather observations. A short wave wireless radio was standard for ground to ground and ground to air communications. After the close of the shipping season, air drops, flying boats or ski equipped aircraft were the only means of supply to the three remote sites. The stations at Flatrock and Port aux

Basques were connected to the other Canadian bases by road and the railway respectively.

Cape Bauld was the first station to be manned, with the 50 RCAF personnel arriving on October 28, 1942. The station operated until October 1944 when it was closed because of the elimination of the threat of air attack and its poor location for use as an air traffic control radar. Ranges up to 145 miles were recorded although the mean reliable range was 100 miles (RCAF Station Cape Bauld Daily Diary, 1942-44).

The remaining radar stations were manned during the fall of 1943. On the Labrador coast Brig Harbour was manned in November and became operational on December 9, 1943. Forty-four personnel were assigned to the unit which operated until September 1945. Ranges of up to 143 miles were obtained under optimum conditions (RCAF Station Brig Harbour Daily Diary, 1943-45).

The Spotted Island stations was an anomaly among the radar stations. The 23 man detachment arrived in October 1943 and set up the navigation beacon and radio. The radar itself never became operational. Once the Brig Harbour and Cape Bauld stations were in operation, it was decided that the Spotted Island station would not be necessary and the station closed in August 1944 (RCAF Station Spotted Island Daily Diary, 1943-44).

The ground control approach radar detachment at the Gander air base became operational in March 1943 with a strength which varied from 40 to 50 personnel. Maximum ranges of upwards of 90 miles at high altitude were obtained which was considered excellent for an inland station, although the norm was 50 miles. The unit functioned in the ground control approach role for the remainder of the war and continued to serve the civilian airport after the war until replaced by more modern equipment.

The Radar Unit at Goose Bay was manned by 37 personnel and became operational in September 1943. Ranges of up to 135 miles were recorded to the east over Lake Melville. Ranges in other directions were significantly less because of the mountainous topography. The station remained operational until it was closed in September 1945 (RCAF Station Goose Bay Daily Diary, 1943-45).

There were two radar units based at Flat Rock, north east of Torbay Airport. Flatrock was selected over the airport because its location on a headland overlooking the ocean provided maximum coverage to the east over the open sea away from the hilly terrain near the airport. Number 17 Radar Unit was the ground control approach radar for the airport. It consisted of between 40 and 60 personnel who were stationed at RCAF Base Torbay and daily bussed to the station for their shifts. The second unit at Flatrock was

Number 14 Radar Unit which was an early warning radar and formed part of the early warning system. Both units became operational in September 1943 and in January 1944 were combined at the Number 14 unit station in Flatrock for ease of administration. The combined unit continued to operate until October 1945 when closed as part of the post war downsizing program. Maximum ranges for the early warning radar were 145 miles (RCAF Station Flatrock Daily Diaries, 1943-45).

The 40 personnel of number 32 Radar Unit arrived at Port aux Basques in April 1943 with the radar and navigational beacon becoming operational in September. Ranges of up to 220 miles were recorded but the norm was approximately 100 miles. The station operated through the remainder of the war until closed in September 1945 (RCAF Station Port aux Basques Daily Diary, 1943-45). A radar station, especially designed to monitor surface vessels was established at nearby Cape Ray in June 1943. This unit which was designed to detect submarines operating on the surface operated until the end of the war (Douglas, 1986:377).

AMERICAN STATIONS

St. John's and Environs

To protect Fort Pepperrell and other installations in the vicinity of St. John's, prepared defense positions were established throughout the area by both the United States and Canada, with the authority of the Newfoundland Government for the period of the war and six months. For air and coastal defense search lights were set up at Outer Cove, Blackhead Road, Freshwater Bay Ridge, Cape Spear Road, Maddox Cove, Long Pond Road, Thorburn Road, Upper Battery Road, Torbay Road and White Hills. The lights and generators used at these sites were mobile therefore these sites although designated for this purpose, were not the only locations where this equipment was set up. Depending on the perceived threat, training exercises, etc., the equipment was deployed throughout the northeast Avalon as required (USAAF Fort Pepperrell Daily Diary, 1942-1945; Private Communication: Frank Day).

To defend against a seaborne landing, beach defenses were prepared at Flatrock, Torbay, Middle Cove, Outer Cove and Logy Bay. While these sites were manned by observers in 1941 as the danger of invasion declined permanent manning with sentries was discontinued although the positions were maintained in the event of

need. For the defense of St. John's and environs the United States assigned two 8 inch and two mobile 155 mm coastal defense guns, four 90 mm anti-aircraft and eight 40 mm anti-aircraft guns (USAAF Fort Pepperrell Daily Diary, 1944). Gun positions for the placement of the mobile 155 mm coastal artillery were constructed on high points overlooking the ocean around the northeast Avalon. These positions were designed to cover any possible invasion landing area and to cover areas, particularly to the north of St. John's and Conception Bay that were not protected by the permanent guns at Signal Hill, Fort Amherst and Cape Spear. These positions were at Red Cliff, Topsail Head, Robin Hood Bay, Blackhead, Torbay Point, Middle Cove, Torbay Point, Middle Cove, Torbay, Flatrock, Chamberlains and Kellegrews (USAAF Fort Pepperrell Daily Diary, 1944). These positions permitted the fixed and mobile artillery to engage any sea borne raiders approaching the North Avalon and defend all likely landing sites.

Argentia and Environs

At Argentia, eight 6 inch guns, two 3 inch, twelve 90 mm and sixteen 40 mm anti-aircraft guns were assigned to protect the Base and immediate area. Ranges from the coastal defense guns were from 10,900 yards for the three inch guns to 27,500 yards for

the six inch guns (USAAF Fort Pepperrell Daily Diary, 1944). Coastal guns were located near Ship Harbour, on the Argentia Peninsula and at Freshwater Head. A mobile site and fire control were located at Black Point south of Point Verde. Anti aircraft guns were located in support of the coastal artillery sites and throughout the army and naval base.

USAAF Radar Stations

To provide an Early Warning System, the United States decided to establish a five station Early Warning Radar Network to provide an early warning network for the northeast and southeast coast which was the direction of the most likely attack on Newfoundland. In 1942, a survey was carried out and sites were selected at Fogo Island, Elliston Ridge, Cape Spear, St. Brides and Allan's Island. Construction on the stations started in the summer of 1942 and finished early in the winter of 1943, when the stations were operational and reporting to the Filter Center and Plotting Room at Fort Pepperrell.

All stations were constructed on headlands overlooking the ocean and were similar in design and layout. The stations were manned by between 35 and 50 personnel. Centered around the radar, the stations contained barracks, mess hall, stores, generator and

transmitter buildings. The stations operated until the fall of 1944 when the United States, deciding the threat of invasion was eliminated, removed its radar technicians for redeployment to more active theaters of operations and turned over operation of the stations to the RCAF. This did not result in any lessening of American early warning capability because the reports of the stations were reported to a joint United States-Canada plotting room.

Communications

One of the major difficulties facing military operations throughout Newfoundland in the early war years was communications. The telegraph service, and in more remote communities short wave radios which were the mainstay of the civilian communications network, were limited in their capacity and not designed for or capable of handling high volumes of military traffic. Telephone service was limited to the Avalon peninsula, the Grand Falls-Botwood area and the Bowaters operating area in and around Corner Brook in Western Newfoundland. Paradoxically, although local communications were limited, international communications with the United States and the United Kingdom were

readily available through the trans-Atlantic cable relay stations at St. John's, Bay Roberts and Hearts Content.

It was clearly necessary that the existing communications facilities be improved and a new high capacity communication network created in order to link the various military bases and stations in Newfoundland and Labrador together with bases and command headquarters in Canada and the United States. Telephone and teletype lines were necessary while a high frequency tactical radio network was required to link ships at sea and aircraft in flight with their bases. In addition to the ground and air voice communication, beacons for naval and air navigation were also necessary.

As the RCAF had done a year earlier the United States realized that because of the limitations of the country's communications system it would be necessary to install its own telephone and teletype lines. The new network, known locally as the "long lines", was designed to interconnect the American military bases and facilities with the Canadian bases at Gander, Botwood and St. John's. The initial survey for the project was carried out in April 1942 (Owen, 1943:206). For convenience, the route followed the railway which was the only transportation corridor that crossed the island. Construction started in June with the placement of the poles and cable installation commencing in August. By late fall, cable was

being installed at rates of up to ten miles per day. At peak construction there were sixteen work camps with approximately 100 men per camp. Work continued through the winter of 1942/43 with the project being completed and operational by the end of March at a total cost of $3.5 million (Can.) (Bridle, 1974:697;685; Owen, 1943: 206).

The long lines system consisted of a series of manned receiver/transmitter stations approximately every 50 miles along the route (Map 15). Interspaced between these stations were unmanned booster stations every seven miles. Each station had a permanent complement of between seven and ten personnel who were responsible for operations and line maintenance. The stations were located at Harmon which was the western terminus, Stephenville Crossing, Corner Brook, Howley, Millertown Junction, Grand Falls, Gander, Shoal Harbour, Whitbourne and at the eastern terminus at Fort Pepperrell. To connect the planned radar station at Elliston Ridge an open wire line was installed along the rail corridor between Shoal Harbour and Bonavista (Dzcuban, 1959:180; NLPA J&D Box 34, file 25).

Roads

The existing road network was not sufficient to serve the military needs. Where roads were required considerable new construction and/or extensive upgrading was necessary to allow extensive all weather military use. Both Canada and the United States participated in a road maintenance program for all the roads on which the used extensively. There were two major American road building projects, one to connect Harmon to the rail line and another to connect St. John's to Argentia. In the Stephenville area, the road from Stephenville to Aquaforte was upgraded while a new road was built and later maintained by American personnel, from Stephenville to the rail siding at Stephenville Crossing. On the Avalon the 54 miles of highway from Holyrood to Argentia via Salmonier and Colinet was rebuilt and upgraded for all season heavy truck traffic. Construction began in the summer of 1941 and was completed the following summer (Bridle, 1974:714;696). Upon completion the road was maintained by the United States army and permanent maintenance camps were set up in Colinet and at Deer Park on the Salmonier Line for summer maintenance and winter snow clearing (NLPA J&D Box 34, file 32). These improvements reduced the travel time from St. John's to Argentia from six to eight hours down to two (Dzcuban, 1959:179).

Railroad

By mid 1941 the military construction program was in full swing and military operations were consuming more and more supplies. The Newfoundland Railway was operating to full capacity. Unfortunately the condition of the railway made it impossible to meet the increased demands the military projected would be required in the coming years. Because of the major role the railway played in the country alternate means of land transportation did not exist. The railway was the most critical means of distributing supplies to the bases, once they had arrived by sea. Supplies to Stephenville and Gander were the most critical problem because unlike the bases at St. John's and Argentia which had port facilities, they were dependent on the railway for aviation fuel and supplies.

To address this potential supply bottleneck, the United States arranged with Newfoundland to upgrade the railway (NLPA S4-2-3.1, files 5, 14a). The upgrading was accomplished through four initiatives: 1) a low interest loan of $1.2 million (US) was provided for general upgrading. The most important part of this was the addition of new long sidings in an effort to permit more trains to travel simultaneously. The loan was also used to purchase five locomotives and 150 cars of various types. 2) The Americans as a project of their own upgraded the Argentia branch line with new

heavy gauge rails to permit the line to accommodate heavier traffic than the existing line permitted. 3) the United States Army provided five locomotives and 100 flat and tank cars. 4) To connect Harmon Air Force Base with the main line a branch line to Stephenville was constructed in 1942 (Bridle, 1974: 717;698-999).

These improvements increased the railway's capacity to a level that met the needs of the military for the remainder of the war. The initial congestion of 1940 and 1941 caused by the large influx of supplies and material for base construction began to ease in early 1942 as much of the material had already been delivered (Bykofsky and Larson, 1957:10). Henceforth until the end of the war, congestion never again reached the proportions of the early war years, with most of the military freight destined for the operations and maintenance of the bases and other assigned units.

Air Navigation Beacons

In the spring of 1941 with construction of air bases underway throughout Newfoundland, the USAAF decided to extend the air navigation beacon system that existed in the United States to Newfoundland, Greenland and Iceland and eventually across the North Atlantic to the United Kingdom. The system would enhance the operation of American aircraft (and any allied aircraft with the

necessary receiver) throughout the Northwest Atlantic.

The first contingent of USAAF communications personnel arrived at Gander from St. John's and within days were operational with a mobile beacon and voice communications center (Shores, 1947:33). Later in the year this temporary unit was replaced with a permanent station. Beacons were soon established at Harmon in January 1942 and at St. John's and Argentia. The four station network was linked from Harmon to the American network at Presque Isle in Northeastern Maine. In the spring of 1942 Goose Bay joined the Newfoundland network (USAAF Goose Bay Daily Diary, 1942).

In addition to serving as navigational beacons the AACS units provided weather and voice communications with aircraft. Reliable range of the signal was between 300 and 400 miles depending on the limitations previously discussed earlier in this chapter on the RCAF navigation beacons (Shores, 1947:52).

Once the network in Newfoundland and Labrador was established it was determined that additional beacons were necessary on the coast of Newfoundland and Labrador for trans Atlantic aircraft departing Gander and Goose Bay respectively. These stations were established at Wesleyville and Cape Harrison (USAAF Goose Bay and Gander Daily Diaries, 1941-1945).

The Wesleyville beacon provided a bearing for the aircraft departing North America and the first beacon to guide aircraft approaching Newfoundland from the Atlantic. Wesleyville was chosen because it was the last point of land on the great circle route between Gander and the United Kingdom. The site, which was selected in late 1942, was on the highest point of land, five miles from the community of Wesleyville. Construction on the station started in early 1943 and it was operational by April. The installation was a self-contained unit that housed the small operations staff, generators, transmitter and wireless receiver. A road was constructed between the installation and Wesleyville where a wharf was constructed for maritime resupply.

Cape Harrison served the same purpose for aircraft departing Goose Bay for trans Atlantic flight and for those approaching Goose Bay from the ocean as Wesleyville did for those flying from or into Gander from the ocean. The station and equipment were similar to Wesleyville. The station was constructed in the summer of 1943 and operated until the end of the war.

To further enhance the network and provide duplication of existing beacons, in 1943 additional beacons were set up at the five radar bases at Fogo Island, Elliston, Cape Spear, St. Brides and Allan Island.

Meteorological Stations

"For the first six months of 1942 the North Atlantic was the scene of hurried and at times almost frantic preparation for an air movement that would permit the weight of American air power to be thrown against the Germans at the earliest possible moment" (Craven and Cate, 1964:342) The main bases in Newfoundland, Labrador, Greenland and Iceland were operational but required considerable improvements to handle the large east bound air traffic that was projected. To support these bases and the high volume of air traffic, accurate and reliable weather forecasting was necessary to ensure optimum utilization of the available good flying weather and to reduce aircraft losses. Aside from the weather units at the major bases a far flung system of remote stations was necessary to supply data in the uninhabited areas to allow more accurate forecasting. In addition to the weather stations set up in Greenland, Baffin Island, and Northern Quebec, stations were established in 1942 at Hebron and Cape Harrison on the North Coast of Labrador. In 1943 additional stations were established at Indian House Lake north of Goose Bay Just on the Quebec side of the border and at Mecatina Lake in Quebec south of the Labrador border (Private Communication: Col. Mereweather, 1989). All stations reported to and were supplied by Goose Bay (Private Communication: Col.

Mereweather; Dzcuban, 1959:190). Site selection for all weather stations was based on their representativeness of the surrounding weather, relationship to airports and airways along with a location which permitted servicing by flying boat in summer and ski equipped aircraft in winter. This required a large nearby body of water.

To complement the ground observations the USAAF maintained specially instrumented aircraft at Gander and Goose Bay to traverse throughout the region to collect additional data and to observe weather patterns. These flights provided a check of inland forecast data and additional data from over the Atlantic where weather reports from passing vessels were random at best.

Information from the American and Canadian weather networks in Newfoundland and Labrador, Quebec and the Maritime Provinces was combined and used by both countries to develop forecasting maps of the North Atlantic theater. These forecasts were shared by all services but were critical for the air operation especially trans-Atlantic and maritime patrol.

Long Range Aid to Navigation (LORAN)

LORAN is the acronym for Long Range Aid to Navigation. It is a system of stations broadcasting radio signals for long distance navigation. To replace the traditional methods of navigation using

celestial bearings, soundings and dead reckoning, LORAN was developed to allow vessels to know their exact location at all times. The system, with a range of approximately 1000 miles, depended on operational conditions, as described earlier in the chapter for Canadian radar, and worked on the same principle as the air navigation beacons (Shores, 1947:256). A network of transmitter stations was set up along the coast of North America, Greenland, Iceland and the United Kingdom, with each station broadcasting a unique signal. By tuning a receiver mounted in a ship and later on aircraft to two or more stations and plotting the bearing on a chart, the vessel could determine its location through triangulation. To ensure complete and accurate coverage of the Western Atlantic stations in Newfoundland and Labrador were necessary.

A joint American-Canadian survey team surveyed the country in August 1942 and selected Cape Bonavista and Battle Harbour for transmitter sites (NLPA J & D Box 34, file 28). Construction commenced immediately and the stations manned by the United States Navy were operational by late fall. In July 1943 an additional station was constructed at Twillingate (NLPA J & D Box 390 F48). In July 1944 a fourth station at Mouse Island, Port aux Basques, was added to the network (NLPA S4-1-7,file 16). All stations were similar in construction and design. The main feature was the transmitter building and the adjoining steel tower to house

the broadcast antenna. Accommodations and support buildings were designed to accommodate up to 15 personnel although the normal operating complement was between five and ten personnel. All stations were serviced by sea and air with the exception of Bonavista and Port aux Basques which had the benefit of being located adjacent to other military stations and the railway. The LORAN network operated for the remainder of the war and although the original stations are no longer in use, remains today one of the primary means of navigation for ships in the North Atlantic.

The range of each beacon was determined by the size of the power supply that was available to the transmitter. The larger the power supply the more powerful the signal that could be broadcast and the greater the range.

SUMMARY

By the end of 1943 the stations, supporting infrastructure and communications corridors had been established. This network supported the operations of the bases and the general air and naval operations in the North Atlantic. Because of their interdependence with the bases these facilities were constructed at the same time

as the bases, although because their very existence was usually based on technical limitations that were subject to change, their construction was usually of temporary wooden buildings.

CHAPTER V

CONTRACTION, REDUCTION AND REDEPLOYMENT: SEPTEMBER 1943 - SEPTEMBER 1946.

STRATEGIC CONSIDERATIONS

From mid 1943 to the end of the war in 1945, Japan and Germany continued on the strategic defensive. In the Pacific the Island hopping campaign which had begun in 1942 was slowly recapturing Japanese held territory and would end in September 1945 with the unconditional surrender of Japan. In the other major theatre, the Allies had defeated the German forces in North Africa and Sicily in 1942 and were advancing in Italy. The strategic initiative on the Eastern Front was held by the Soviet Union, which through constant attack was slowly forcing Germany to retreat westward. The heavy bomber forces of the United Kingdom, Canada and the United States continued around-the-clock bombing offensive against German industry and cities, while land, sea and air forces were assembling for the invasion of continental Europe. The Allied invasion of Normandy on June 6, 1944 forced Germany to fight a land war on two fronts which from the very beginning of the war had been

one of the German General Staff's greatest fears. The unconditional surrender of Germany on May 8,1945, only eleven months later was the almost inevitable consequence.

The Allied move to the strategic offensive coupled with the growing Allied power in Europe and the reduction in German military power had an obvious effect on the strategic and tactical allocations of forces in the North West Atlantic. The main strategic role of Newfoundland became less that of serving as a defensive outpost on the perimeter of North America and more that of serving as a support base for trans Atlantic air traffic, and for ships and aircraft engaged in the Battle of the Atlantic. In summarizing the strategic change, Conne et al, (1964: 552) state "After the summer of 1943 the chief problem was one of contraction, of reduction and redeployment. The enemy, not the Americas, was on the defensive and the American outposts in the Atlantic shifted roles accordingly."

The strength of the defense forces peaked at approximately 27,000 during the summer of 1943 and declined steadily until VE-Day on May 8, 1945 (MacLeod, 1986:2&8). After this date there was a rapid winding down of operations coupled with the redeployment of operational units from Newfoundland to new locations in Canada, the United States and the United Kingdom.

With the conclusion of the war Newfoundland's strategic importance was refocused. Operational naval and air units based in the country were no longer necessary. However the large size of the occupying forces in Germany and the hardening of relations between the Western Allies and the Soviet Union combined with the newly established air connections between the continents to provide the requirement for the continued maintenance of air bases in Newfoundland and Labrador to support the steady flow of transient aircraft. Therefore, while the naval and army bases and stations were either closed or significantly reduced, the air bases remained fully operational.

THE FUNCTIONAL LANDSCAPE; SEPTEMBER 1943 - MAY 1945

By the end of 1943 the development of the military landscape was essentially completed. The construction program which had created a new cultural landscape beginning in mid 1940 was now over. All the major bases and stations along with the communications and transportation infrastructure had been constructed and were in full use. The operational units and equipment were all in place that were necessary to defend both the country and the North West Atlantic along with support air movements between North American and the United kingdom. These

facilities were functioning at or capable of handling the maximum level of military traffic or operations that the war planners projected would be necessary. With this requirement achieved, and given the Allies shift to the strategic offensive, no further construction of bases or defensive positions was necessary.

Although no new bases were established after 1941, there was a continuous program of maintenance, upgrading and small scale construction at all bases in response to operational requirements. In many instances new construction was undertaken simply to replace temporary facilities that had been hastily established at the onset of the base building boom in 1940 and 1941. The only substantial examples of new construction were at the Canadian naval base in St. John's which underwent a large expansion during the period from the spring of 1943 until the summer of 1944, and a LORAN station constructed at Mouse Island near Port aux Basques in 1944 (Tucker, 1952:201; Bridle, 1974). The expansion of the base was in response to the continuing need for more and more North Atlantic convoy escorts, while the LORAN station was intended to fill a gap in the existing coverage (Plate 16 & 17).

While there was a general downsizing of total force strength by both Canada and the United States, all the bases and stations remained part of the functional landscape although some no longer supported operations or were closed, unmanned and placed in

LEGEND PLATE 16

1 Topsail Road
2 RCN Hospital No. 2
3 Sanatorium
4 Waterford Hospital

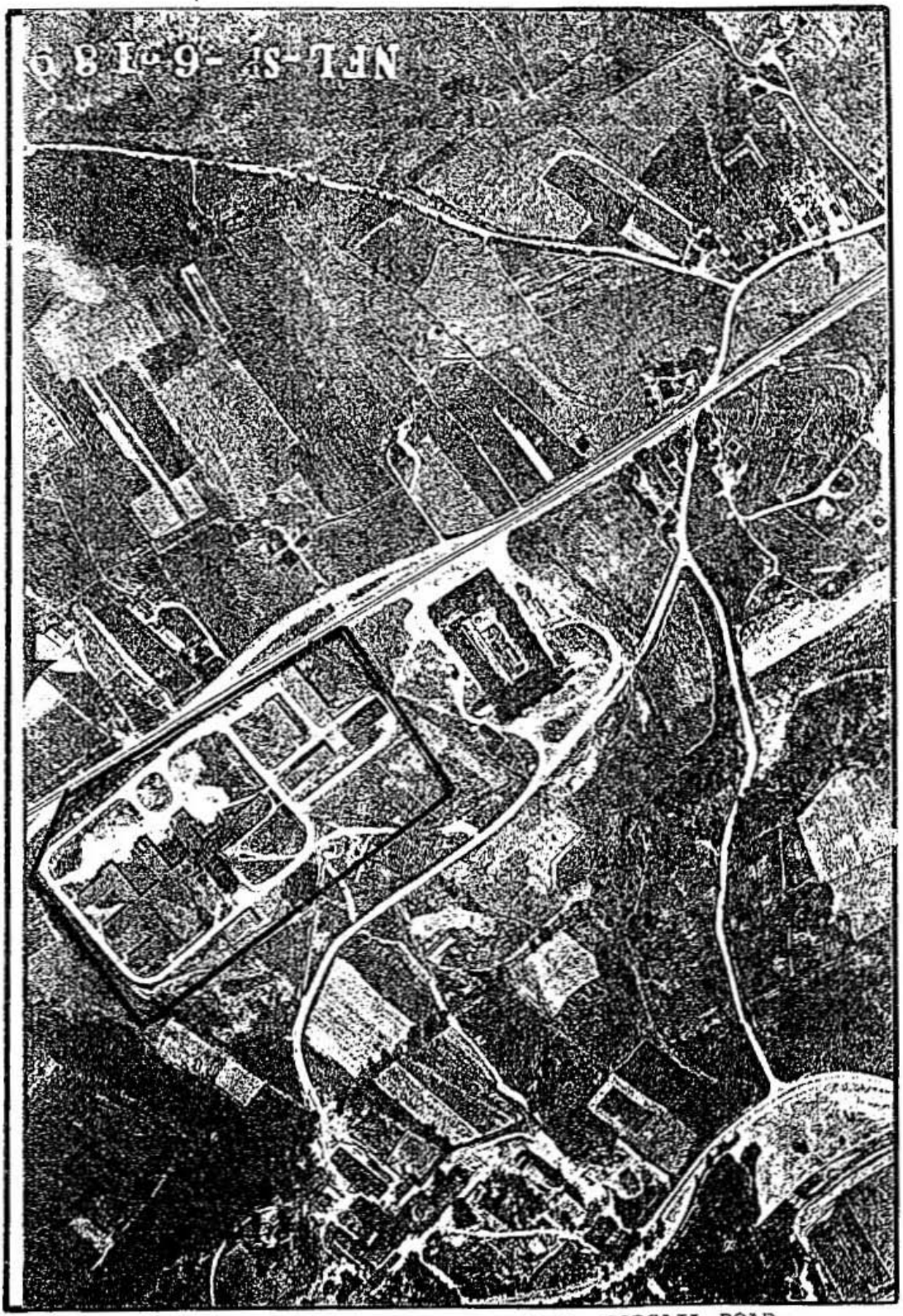


PLATE 16 CANADIAN NAVAL HOSPITAL NO.2, TOPSAIL ROAD, ST. JOHN'S 1948

LEGEND PLATE 17

1 RCN South Side Barracks
2 Harbour
3 RCN Docks

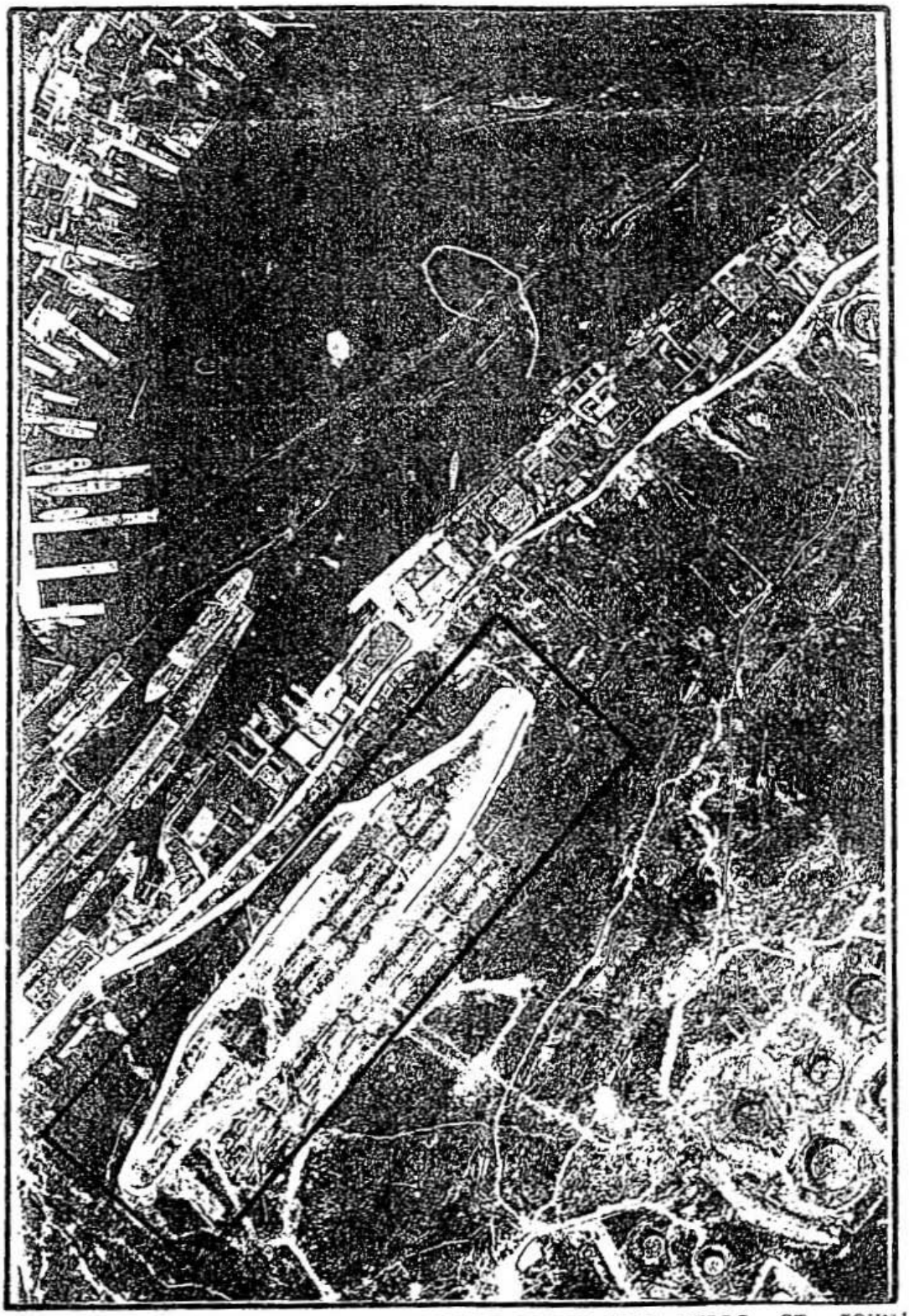


PLATE 17 CANADIAN NAVAL BARRACKS SOUTH SIDE HILLS, ST. JOHN'S
1948

Photograph Credit:
Government of NF & Labrador
Dept. of Environment & Lands
Air Photo and Map Library
Air Photo Collection

"care and maintenance." The latter term was used by the military to describe a base or station that was no longer needed as an operational facility but which was to be preserved so as to be available in case of some future need. The site may have been maintained by a minimum complement of personnel as occurred at the RCAF base at Botwood or closed completely and the personnel withdrawn as occurred at the coastal defense battery at Rigolet.

With the allies on the offensive and the threat of even a major raid eliminated, it was no longer necessary to maintain large numbers of defensive troops in Newfoundland. This fact coupled with the high demands for personnel in more active theaters of operations led both Canada and the United States to begin reducing the size of the garrison in the summer of 1943 (Dzcuban, 1959; Stacey, 1948; Douglas, 1986). The first withdrawals occurred among the infantry, anti-aircraft and coastal artillery troops. The defensive capability was not, however, reduced to zero. The coastal defense guns at Bell Island, Cape Spear, Outer Battery, Fort Amherst, Argentia and Harmon were maintained until the end of the war although at a reduced readiness level. Other coastal batteries at Rigolet, Point of Bay, Wisemans Head and Lewisporte were closed at the end of the shipping season in 1943 although the sites were kept in care and maintainence until the end of the war to permit rapid reactivation if that were to become necessary.

For the Navy the war in the North Atlantic continued unabated until the unconditional surrender of Germany on May 8, 1945 (Hadley, 1986:295). The constant submarine threat produced an ever-increasing demand for escorts. Canadian naval strength in St. John's and American strength at Argentia actually increased until the end of the war as additional ships were assigned for anti-submarine warfare. While there were small increases in the number of shore based personnel at these bases, the greatest increases were in ships' crews. These increases however, made only minimal demands on the shore bases facilities. While assigned to Newfoundland bases crews spent the major portion of their time at sea and when in port were billeted aboard ship.

The number of escorts stationed at St. John's steadily increased throughout the war from 60 in June 1943 to a final total of 89 in May 1945 (Tucker, 1952:203). To accommodate this ever increasing number of ships the base at St. John's underwent a second year long building program beginning in the summer of 1943 (Tucker, 1952:200-201). The existing facilities were expanded and upgraded and a second 250 bed hospital was built adjacent to the existing civilian hospital on Topsail Road. The final addition was a new barracks complex on the South Side Hills overlooking the repair shop, stores and tactical training center at the south end of the harbour (Tucker, 1952:203a).

The airfields at Gander, Goose Bay and Torbay, and the seaplane base at Botwood were operated by St. John's based No. 1 Group (RCAF No. 1 Group Daily Diary, 1941-1945). Gander and Torbay were used until the end of the war by maritime patrol bombers. Because of the acquisition of more efficient land based aircraft and the switch from the Catalina flying boat to the amphibious Canso aircraft a seaplane base at Botwood was no longer necessary. Because the Cansos could use the runways at Gander the RCAF was able to consolidate operations at one year round facility. Neither the costs saved nor the effectiveness gained were insignificant The civilian flying boat operations continued for the seasons of 1944 and 1945. As a result Botwood ceased to be used by operational squadrons after the close of the 1943 flying season. The base was placed in care and maintenance until the end of the war (RCAF Botwood Daily Diary, 1943).

Both Gander and Goose Bay had a large USAAF base and a smaller RAFFC contingent in addition to the Canadian air force and army bases. The main operations at both airfields were trans Atlantic ferrying and transport operations although both continued to support Canadian maritime patrol bombers engaged in the Battle of the Atlantic. Ferry operations continued until the end of the war with the movement eastward of medium and heavy bombers from North America. The transport operations on the other hand were

predominantly by four-engine long range transports and converted bombers flying VIPs and priority cargos on round trip Atlantic crossings. The majority of these flights were by USAAF aircraft although some operations were carried out by the RCAF and RAFFC.

The United States Navy operated twin engine long range maritime patrol bombers from Argentia to the end of the war. On the naval side there was an increase in the numbers of anti submarine escorts and escort carriers until the end of the war in much the same manner as the build up in Canadian Navy escorts at St. John's.

THE POST WAR MILITARY LANDSCAPE, JUNE 1945 - SEPTEMBER 1946

With the surrender of Germany in May 1945 military operations in Newfoundland immediately began to wind down. The last RCAF squadron returned to Canada by mid August. The Newfoundland Escort Force was disbanded and the escorts returned to Canada and the United Kingdom by the middle of July. The Canadian and American infantry, coastal defense artillery and anti-aircraft artillery were withdrawn and the sites abandoned. The American bases at Pepperrell, Argentia, Fort MacAndrew and Harmon remained although at reduced strength. The same was true for the American bases subleased from Canada at Goose Bay and Gander.

Number 1 Group was disbanded and the base at Kennas Hill closed. However, Canada maintained its air bases at Gander, Torbay and Goose Bay to continue operational functions at the airports. The radar stations at Brig Harbour, Fogo Island, Elliston Ridge, Cape Spear, St. Brides, Allan's Island and Port aux Basques all closed within four months of the end of the war. The electronic equipment and portable material was removed by the military and the buildings were soon removed from the sites and integrated in to the local communities as building materials. Within a few years the only remaining vestiges of the radar stations were concrete platforms, foundations and debris (1949 air photos).

The Canadian Army abandoned Botwood, Lewisporte and Gander in June 1945 and by September only administrative personnel remained at St. John's. The coastal defense positions at Signal Hill, Outer Battery, Fort Amherst, Cape Spear along with the previously vacated sites at Rigolet, Lewisporte, Wisemans Point and Point of Bay were abandoned and the lands returned to the Newfoundland Government. Within a few years the temporary wooden buildings had been removed for building materials although concrete bunkers remain to this day as relic features.

The end of the war eliminated the need for Canadian naval bases in Newfoundland. The scattered installations that made up the base at St. John's along with the other stations which had been built

solely for anti-submarine escort operations were no longer necessary. Within weeks all escort vessels had been withdrawn from St. John's and the shore base reduced to a minium complement to oversee the closure and disposal of facilities. In June 1946 the Canadian Naval base facilities in St. John's along with the stations at Bay Bulls, Botwood and Harbour Grace which had closed in September 1945, were turned over to Newfoundland (Tucker, 1952:498).

At St. John's the only facility maintained by the Canadian Government for military purposes was the former naval base at Buckmasters Field which was maintained as a joint services headquarters for the administrative staff of all three services in St. John's. The two hospitals were transferred to Newfoundland and integrated into the country's health system. Many of the other buildings were sold for commercial premises. The temporary buildings were gradually torn down for their building materials or to make way for new construction. The South Side Hills barracks complex was removed in the late 1940's and the maintainence shops were taken over for civilian ship repair. The wireless station at the Goulds remained for a number of years but was eventually replaced by another more modern site south of Windsor Lake. The recreation camp at Fourth Pond in the Goulds was sold for civilian use. The airport at Torbay was transferred to the Canadian Department of

Transport in 1945 and thereafter remained in operation as a civilian airport. Not all military activity ceased however: the USAF at Pepperrell used a portion of the former Canadian base for transport operation associated with the American military bases in the North West Atlantic. However after Newfoundland joined Canada the RCAF facility on the east side was reactivated.

After the initial surge of returning combat aircraft from Europe in the summer and early fall of 1945 the United States, Canada and the United Kingdom reduced their contingents at Gander and in March 1946 they pulled out altogether and all facilities at Gander and Botwood were sold to Newfoundland for one million dollars (Bridle, 1974:1418). Botwood continued to be used as a base for trans Atlantic flying boats until the end of the 1946 flying season when flying boats were replaced on the Atlantic routes. They were supplanted by the large number of surplus land planes with trans Atlantic range.

At the end of the war Gander finally assumed the role that had been envisioned in 1935 when the airport had first been planned; that of a refuelling and technical stop for trans-Atlantic aircraft. To accommodate the changing role of Gander many of the barracks and administrative buildings abandoned by the military were modified into apartments for the civilian staff who operated the

airport and other buildings were converted for commercial and civic purposes and served as the town until the present town site was constructed in 1952.

After the war Goose Bay remained a military airfield with separate Canadian and American bases maintained on opposite sides of the runways. The major function of the airfield was a continuation of the wartime role of supporting trans-Atlantic flight.

Most of the far flung communications and radar stations were closed during either the last year of the war or in the first year of peace. All the RCAF radar and American stations were closed and the temporary buildings dismantled. By 1949 only scrap metal and concrete foundations remained as the salvageable building materials were incorporated into the local economy (1949 Air Photos). The long lines communications network was maintained and the relay stations automated. The FM transmitter/ receiver station at Table Mountain was transferred to the civilian telecommunications company which operated the site as part of the country's telephone network. It subsequently served for many years as the main telephone link to the mainland until it was finally superceded by microwave technology. The airstrip at Buchans was abandoned by Canada but continued to be used by civilian aircraft particularly those operated by the Buchans Mining Company. It is still in use today by light sport aircraft.

The United States closed the communications site at Wesleyville and automated the navigation beacon. The beacon has been upgraded over the years and today a civilian navigation beacon for trans Atlantic flight is operational near the original site. The station at Cape Harrison on the Labrador coast remained operational into the 1960's as a component of the United States trans ocean navigation network as did the LORAN stations at Twillingate, Battle Harbour, Port aux Basques and Cape Bonavista.

As would have been expected, most of the operational units departed at the end of the war. But the trans Atlantic air age was now firmly established and the American defense commitments in Europe required the continued maintenance of operational bases in Newfoundland to cement the air links to Europe. This became especially important as relations between the Soviet Union and the Western Democracies led by the United States continued to deteriorate. American leadership of NATO and the Cold War with the Soviet Union would be the stimulation for a military expansion in the 1950's that saw extensive construction on the bases and the establishment of another generation of far flung radar and communication stations throughout the province.

CHAPTER VI

SUMMARY AND CONCLUSION

In 1939 there was no military presence in Newfoundland and the cultural landscape contained virtually no military artifacts except for the fortifications at St. John's and Placentia, all of which dated from the 18th and early 19th centuries. Throughout history the military had played an important role in developing the landscape of Newfoundland. The country had played host to a permanent garrison in St. John's for nearly 200 years and during the 17th and 18th centuries had been the scene of numerous battles between the British Empire and France as they struggled for control of the New World. However, because of the changing geopolitics of the North Atlantic world, Newfoundland had not hosted an Imperial Garrison since 1870 (Stacey,1936). The almost complete lack of a military presence on the landscape was to change in 1940 when Canada, the United States and to a lesser extent, the United Kingdom decided, for reasons having to do with their own national security and strategic interests, to develop a series of military bases and stations throughout the country. In fact the United States had unilaterally drafted plans to occupy and protect the country to deny its use to Germany and to facilitate the defense of the Western

Hemisphere (Watson, 1950:477). These were decisions and events over which Newfoundland had little control but which resulted in a major transformation of the landscape as the military initiated a construction boom unprecedented in Newfoundland history.

Other researchers addressing the economic and cultural landscape of the Province since 1939 have referred to the great impact of the military on shaping the province (Steward, 1974; Brown, 1985; Neary, 1986). The changes throughout Newfoundland were widespread and rapid. For example in 1939 there were approximately 50,000 people receiving government assistance and no defense related employment (Mackenzie, 1986: 30). When defense construction peaked in the fall of 1942 a total of 19,752 men were employed on defense-related projects alone (NLPA PU G8/5). Between 1941 and 1945 there was also a significant improvement in the state of government finances. For the first time since the Commission of Government came to power in 1934 revenue exceeded expenditures. This allowed Newfoundland to provide war loans to the United Kingdom, pay off its accumulated debt and actually build up a budgetary surplus. Total revenues from 1940 to 1945 were $133.5 million while expenditures amounted to only $116.6 million. This compares with the preceding five year totals of $53.9 million in revenue and $64 million in expenditures, for a deficit of $10.1 million. Between 1940 and 1945 the United States spent $113.5

million (US) on military bases stations and infastructure while Canada spent $65.1 million (Can.). This total military expenditure of $178.6 million was $62 million greater than the total expenditures of the Newfoundland Government during the same period (Dzcuban, 1959:168; United States Navy, 1979:14; Bridle, 1974:1417). These military expenditures played a great part in a three fold increase in annual government revenues, which rose from $11.2 million in 1939 to $33.3 million in 1945. These increases allowed expenditures to rise from $15.3 million in 1939 to $26.3 million in 1945 (Neary, 1986:363).

The immediate effects of the post-1940 military occupation of Newfoundland and Labrador on the cultural landscape were dramatic and in many cases long-lasting. Today there are many relics remaining in the landscape. Relics can be of two types, those features or forms which have survived but have lost their function and those which have survived by acquiring a new function. Today some former military features have survived only as relics. Others have survived as functional relics either because they have taken on a new function or continue their original function in the civilian economy. Former military features on today's landscape range from the abandoned concrete coastal gun emplacements at the Outer Battery, Fort Amherst and Cape Spear near St. John's to the airports at Torbay, Stephenville, Goose Bay and Argentia. Of the original

bases and stations none are presently used solely for military purposes and only Goose Bay and Argentia have maintained a continuous military presence (Table 1). Most of the substantial assets have been integrated into the social capital of the province and have played an important role in the development of the province over the last 53 years. The impacts on the landscape go far beyond the simple physical changes brought about solely by the military. The physical, social, economic and cultural landscapes also underwent tremendous change as a direct and indirect result of the economic boom created by defense construction and maintainence employment.

The military landscape in Newfoundland and Labrador evolved from the necessity and desperation borne of wartime needs. Geography and geopolitics were the primary reasons the military forces of three nations came to Newfoundland. In the three years from July 1940 to July 1943 they completed a massive building program of bases, stations and supporting communication and transportation infrastructure. Military personnel poured in from Canada, the United States, and to a lesser extent the United Kingdom, often before the necessary infastructure was in place.

Of all the military developments it was the bases that had the greatest impact on the landscape. The stations were smaller, usually intended for a single function and constructed of wooden

MILITARY BASES 1940-1993

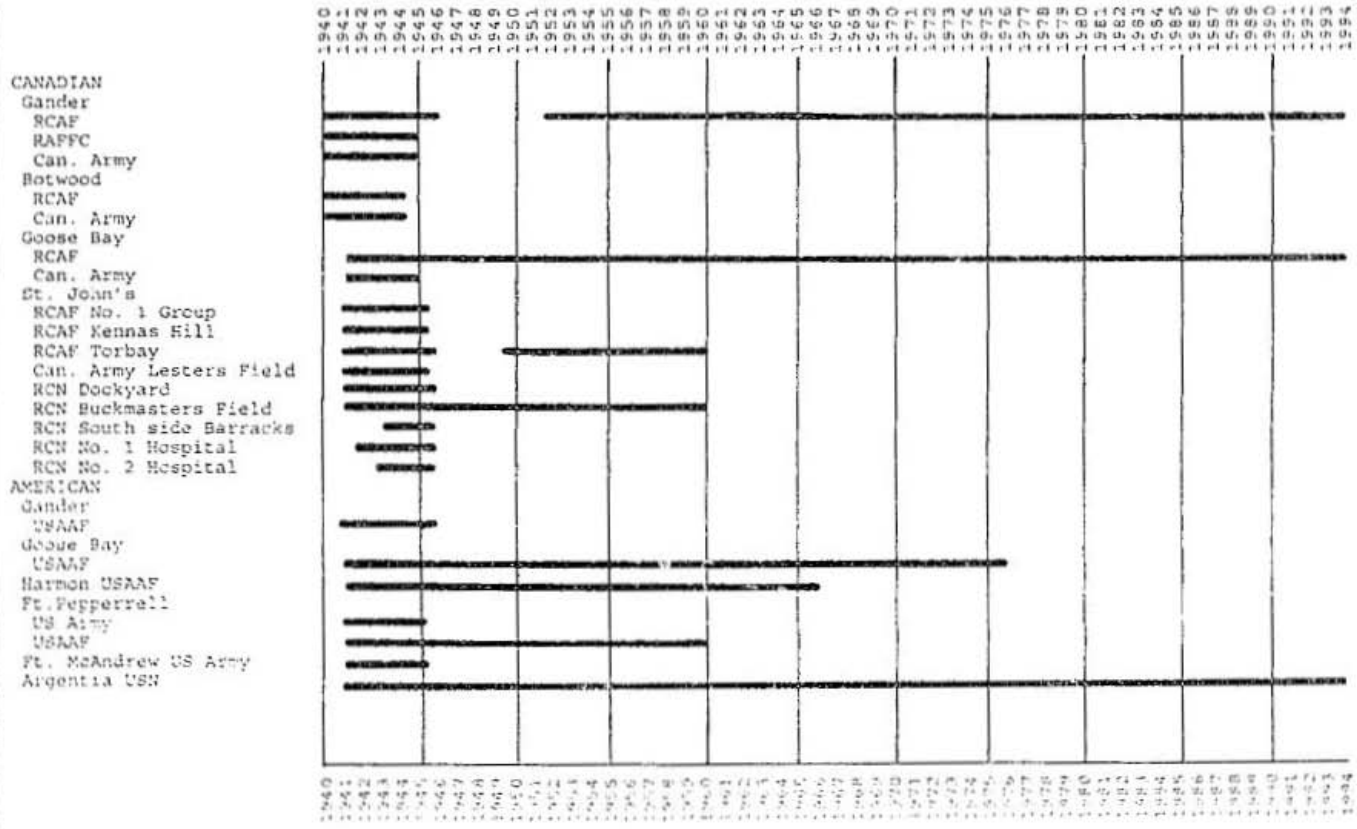


TABLE 1

frame buildings that were designed for temporary use. The life expectancy of a station was often limited by technology (Table 2). The bases were constructed with a large number of permanent buildings that have endured over time, and this permitted the bases to be transformed for other uses once the military withdrew. This is particularly true of the American bases which were built to a very high standard.

The facilities transferred from the military when the war ended, enabled Newfoundland to make tremendous gains in social capital. The infrastructure that was added, at little cost to the country, hastened development and improved the quality of the lives of its citizens. Two complete hospitals in St. John's and one each in Botwood, Gander and Lewisporte were incorporated into the health care system. Well developed and fully operational airports at Torbay, Harmon, Goose Bay, Argentia and a greatly enhanced airport at Gander eventually made their way into the civilian aviation network. With the exception of Argentia, which was decommissioned in 1973, they form the nucleus of the province's aviation landscape.

With the exception of Goose Bay, all of the Canadian and American bases were constructed within the existing cultural landscape. Fort Pepperrell, Harmon, Argentia, Fort MacAndrew and

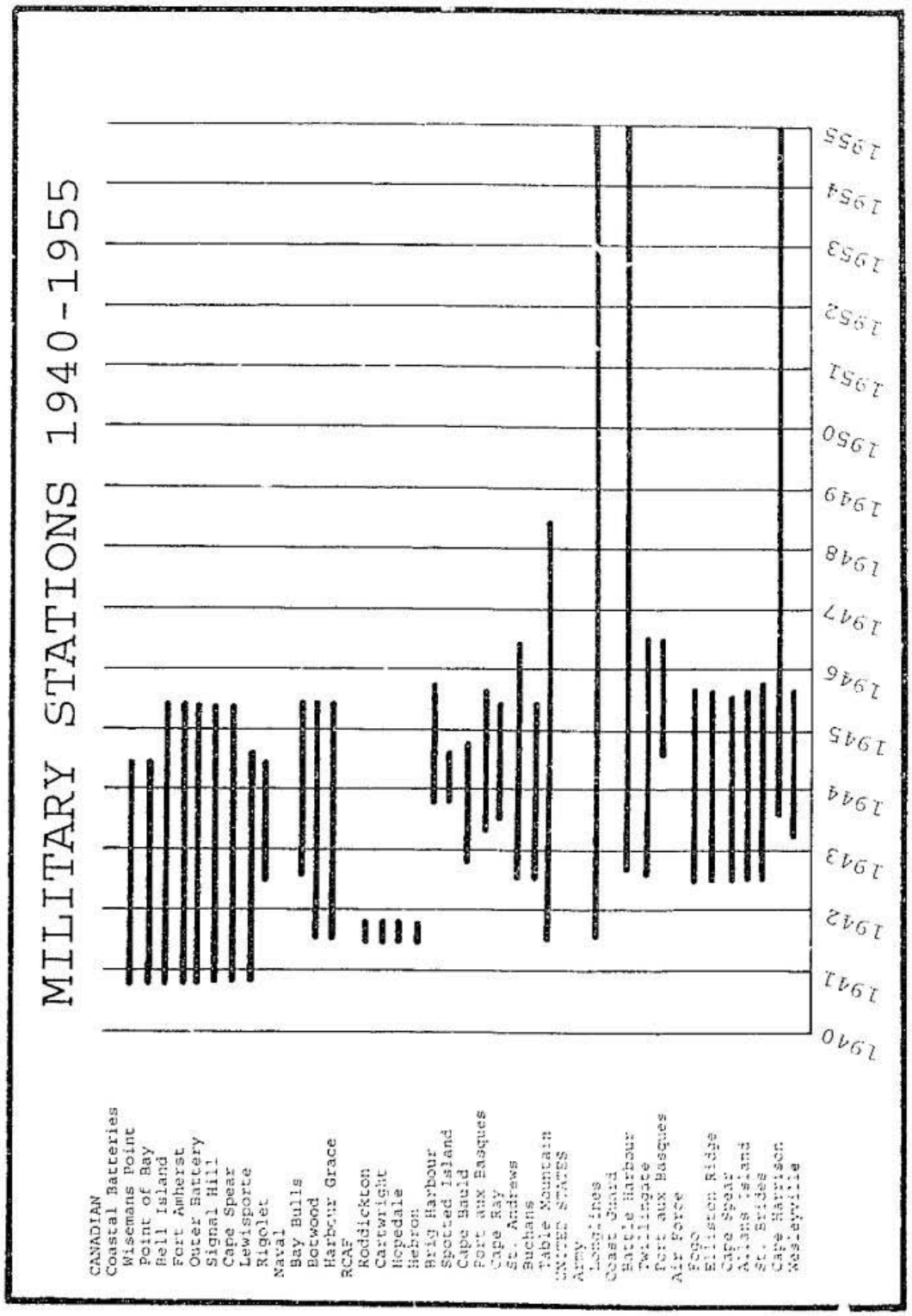

MILITARY STATIONS 1940-1955
CANADIAN
Coastal Batteries
Wisemans Point
Point of Bay
Bell Island
Fort Amherst
Outer Battery
Signal Hill
Cape Spear
Lewisporte
Rigolet
Naval
Bay Bulls
Botwood
Harbour Grace
RCAF
Roddickton
Cartwright
Hopedale
Hebron
Brig Harbour
Spotted Island
Cape Bauld
Fort aux Basques
Cape Ray
St. Andrews
Buchans
Table Mountain
UNITED STATES
Army
Longlines
Coast Guard
Battle Harbour
Twillingate
Fort aux Basques
Air Force
Fogo
Ellistion Ridge
Cape Spear
Atlantic Island
St. Brides
Cape Harrison
Wesleyville
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955

TABLE 2

Torbay airport were all constructed on lands that, for the most part, were cleared and in agricultural use. Private property was expropriated and the inhabitants moved to nearby communities. Among the base sites only that of Fort Pepperrell had an earlier 20th century military association. It had served as the training ground for the Newfoundland Regiment before it went overseas in the First World War. Among the stations, only the battery at Fort Amherst had been used during World War One. The site of the American dock at the Inner Battery had previously been used for commercial shipping and since the withdrawal of the military in 1960 has once again returned to this commercial role.

At the time it was taken over by the military, Argentia was a deep-water port with a rail line connection to the main line of the Newfoundland Railway. The Navy's use was only a continuation of the function established years earlier by the railroad and steamship services and the existence of well developed facilities was one of the major factors underlying the Navy's choice of the site for a base.

Gander and Botwood were air bases established in 1935 by the British Air Ministry predominantly for civilian trans Atlantic flight. From the time that they were taken over by the military in 1940 and until they were relinquished back to civilian control in 1946 their function, although expanded considerably, continued to be the same. Although Botwood was overtaken by technology and closed

at the end of the 1946 flying season Gander continues as the only international airport in Newfoundland serving both domestic and international trans Atlantic traffic.

At Botwood the ramp and breakwater to Killock Island along with a small building which serves as a museum remain today. The ramp serves as part of the street network for the town and the breakwater as a shelter for small boats. The naval hospital continues to function as a municipal facility but the former naval pier is a derelict feature on the waterfront landscape.

Gander took on new prominence in 1946 as it became the main civilian airport in the Western Atlantic for trans-Atlantic propeller aircraft. For the next 15 years it was the most important airport on the western side of the Atlantic for refueliing and maintainence of aircraft on trans Atlantic flights. The importance of the airport declined in the late 1950's with the introduction of long range jet aircraft. Today the airport is Newfoundland's only international airport with its main runways substantially lengthened to accommodate the heavier jets with their higher landing speeds.

At Gander few of the original wartime buildings survive today. Only the RAFFC hangars on the east side of the field, the Canadian Army drill hall and the former American power plant on the west side of the runways remain. Hangar 13, originally built for

RCAF patrol bombers, was used by Transport Canada as a maintainence garage until it was torn down in 1986. Since the early 1950's, Gander has hosted a Canadian military base on the west side of the runways. The main administration building is the former USAAF hospital.

Goose Bay is the only base without a previous human landscape, having been carved out of a virgin lichen forest in 1941-42. The military landscape has endured to the present day. The function of the landscape has remained fundamentally unaltered although its form has changed over the years in response to the continual upgrading which has been necessitated by changes in the framework of military requirements.

Not surprisingly the largest concentration of military artifacts are to be found within St. John's and environs. The wharf and maintainence shops of the Bay Bulls marine railway remain today and have been used since 1945 to support fishing and coastal trade vessels. At Buckmasters Field only the recreation center remains and still serves the same function. The old naval store buildings at the west end of the harbour continued to stand until the late 1970's when they were demolished to permit a road widening project. The Southside barracks complex was removed shortly after the end of the War. The former naval fuel storage tanks on the Southside Hills were sold to Imperial Oil in 1946 which has

maintained them in their original function. The naval hospitals remained in use as medical facilities until the 1960's when the Topsail Road Hospital was converted to a college. It was finally torn down in the early 1980's. The facilities on the army base at Lester's Field had mostly been demolished by the end of the 1940's. The only buildings which survive today are those on Blackmarsh Road which are currently in use by Purity Factories as part of their bakery. The concrete coastal defense gun emplacements at the Outer Battery, Fort Amherst, Argentia, Bell Island, Point of Bay and Wisemans Head remain today as derelict relic features. The only such facility that has escaped the consequences of neglect is the Cape Spear battery which has been preserved as one of the main exhibits in the Cape Spear National Park.

The American bases at Pepperrell, Argentia, Fort McAndrew, Harmon and Goose Bay are readily discernible on the landscape as separate entities differing from the surrounding landscape by virtue of their architecture, size, and the layout of the buildings. Having obtained 99 year leases on these sites the Americans constructed high quality permanent buildings, which were carefully maintained well into the 1960's. Gander was the only wartime American base that was not expanded and operated as a military facility in the post-war years. The base facilities leased from Canada had been hurriedly built mainly using wooden frame construction that was not

designed to survive for long in the Newfoundland climate. Given the existing airfields at Argentia, Harmon, Goose Bay and Torbay, the first two under American military control, there was no need for a fifth base at Gander that would have to be shared with civilian traffic.

In the 1950's the United States expanded its bases in Newfoundland in response to the geopolitics of the Cold War. All bases were active in support of naval and particularly air operations in the North Atlantic and underwent considerable expansion and modifications to the original 1940's infrastructure. However by the beginning of the 1960's advances in technology combined with changing geopolitics negated the need for an extensive American military presence in Newfoundland. In 1961 Pepperrell Air Force Base became the first of the bases to close. The land was returned to Canada, and the buildings and assets were divided between the Provincial and Federal Governments. The Canadian military moved from their quarters at Buckmasters Field into some of the vacant buildings at Fort Pepperrell which are still occupied by the Canadian forces posted to Canadian Forces Station St. John's. The hospital, housing units, heavy equipment garages and laundry continue to fulfill their original functions under new ownership. Other buildings are used for Federal and Provincial Government offices and storage.

In 1966 Harmon Air Force Base at Stephenville became the second of the bases to close. In this case too, the assets and infastructure were transferred to Canada (Plate 18). Since then the Federal Department of Transport has operated the airport. The buildings which are not required for the function of the airport have been transferred to the provincial government and integrated into the provincial infrastructure. Like Pepperrell, although the base has been closed for 27 years, the landscape is relatively unchanged. The only current vestiges of military use on the former base is the infrequent stopover by military aircraft and the armory which houses a company of the Royal Newfoundland Regiment, Canadian Army Reserve.

At Argentia the original naval base on the north side was abandoned by the United States in 1973 and leased to Newfoundland, although a reoccupation clause in the sublease allows the Americans to reactivate the site on 24 hours notice. The present United States Navy Base is located on the site of the former Fort MacAndrew which the Navy acquired from the USAF in the early 1950's. This base is scheduled for closure in 1994 at which time the land and the infrastructure will be returned to the Governments of Canada and Newfoundland and Labrador as has occurred with all the previous base closings.

LEGEND PLATE 18

1 St. George's Bay
2 Stephenville
3 Aircraft Parking
4 Fuel Storage
5 Housing
6 Stephenville Pond

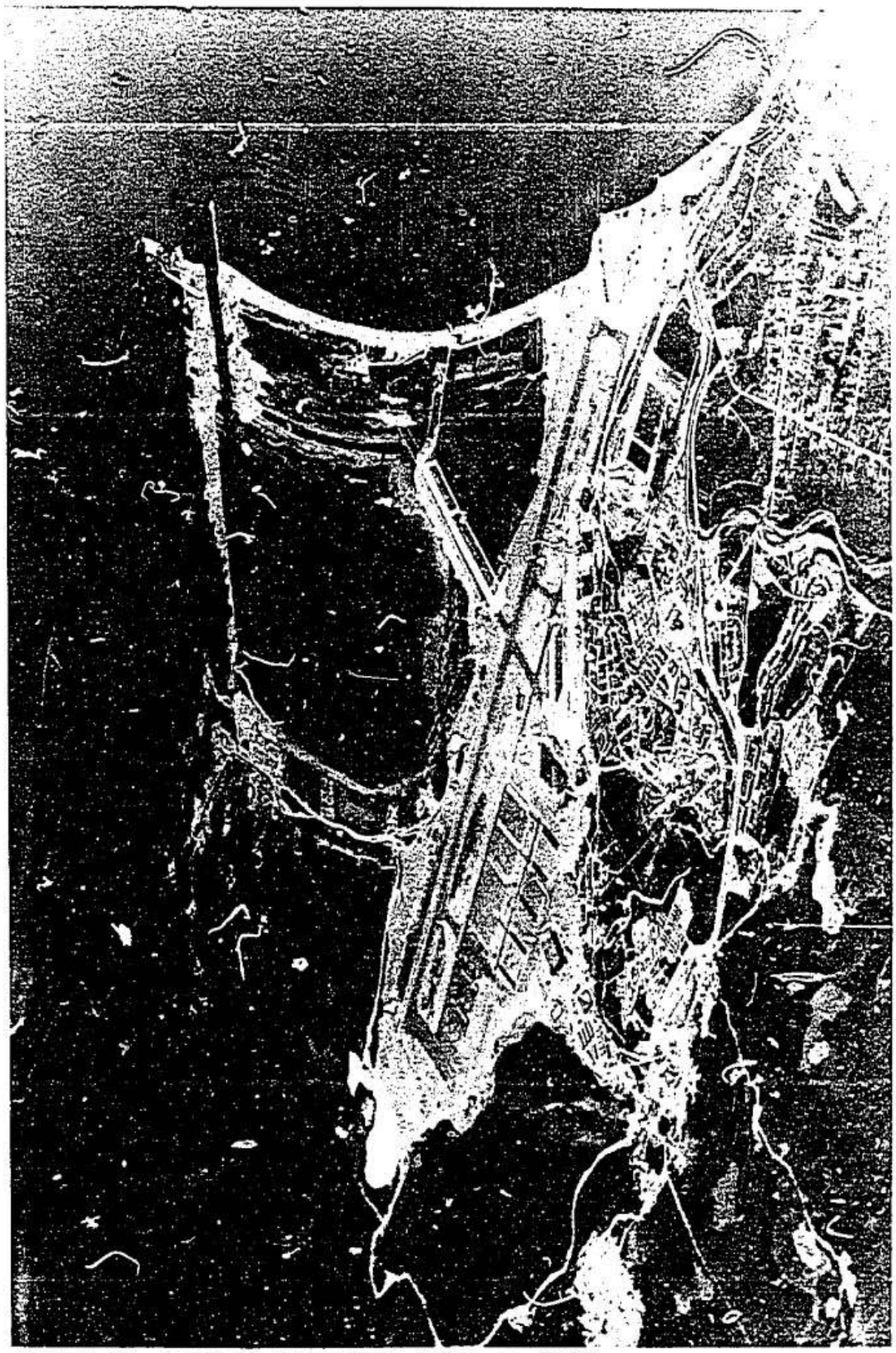


PLATE 18 HARMON AIR FORCE BASE ca.1955

The USAF Base at Goose Bay was extensively rebuilt in the 1950's and 1960's along with the runways, but was closed in 1976 and returned to the Canadian Armed Forces with the expiry of the lease (Plate 15). The latter moved into the better built and equipped buildings of the former American base and closed their base on the north side of the runway. The buildings and land were then transferred to the federal and provincial governments. Subsequently some of the buildings were sold to private interests. Only the large hangars, warehouses, stadium, curling club and recreation center remain. Many of the smaller buildings have not survived because of their age and wood frame construction. The Canadian Armed Forces have continued to operate the former USAF base as their base and the facility has been used extensively since 1976 for low level flight training by the air forces of NATO.

Because of their size and longevity the various bases have had the greatest impact on the landscape. There are, however, other facilities and infrastructure that have also had a large impact on the landscape but because of their very nature they are not readily identifiable to the untrained eye as having originated in the military landscape. The roads, navigational beacons, LORAN, port facilities, airports and communication systems were all integrated into the country's social capital at little or no cost and all played an important role in the post-war development of the country.

It is clear that the military landscape established during 36 months of intensive construction between 1940 to 1943 continues to have a significant impact on the landscape of the province. The military landscape has proved not to be ephemeral but has survived both physically and functionally to the present. Today relics of the 1950's, 1960's and 1970's are scattered throughout Newfoundland and Labrador as reminders of the province's military geography of the twentieth century.

This thesis has set out to reconstruct the military developments of the war years and show their impact on the landscape. It is believed this will provide a basis for understanding the impact of the military on the present landscape and serve as a basis for other studies on the role of the military in Newfoundland.

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- RCAF Station Torbay
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- No. 10 (BR) Squadron
- No. 125 Squadron
- No. 126 Squadron

No. 129 Squadron
No. 130 Squadron
No. 14 Radio Detachment St. John's
No. 17 Radio Detachment Torbay
No. 19 Radio Detachment Gander
No. 29 Radio Detachment Goose Bay
No. 30 Radio Detachment Cape Bauld
No. 32 Radio Detachment Port aux Basques
No. 36 Radio Detachment Spotted Islands
No. 37 Radio Detachment Brig Harbour
No. 40 Radio Detachment Allan Island
No. 41 Radio Detachment St. Brides
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PERSONAL COMMUNICATIONS

William Chafe; Mr. Chafe moved to Gander in 1936 as a youth. where his father worked at the Airport both during construction and during operations. Upon completion of his education he obtained employment at the airport as an electricians helper. Until his retirement in the late 1970's he was employed at the airport in a variety of positions with government and the aviation industry and resided in Gander until his death in 1989. Mr. Chafe provided information to the author during numerous conversations during 1985, 1986 and 1987.

Frank Day; A life long resident of St. John's, Mr. Day worked for the American military at Fort Pepperrell during the Second World War and experienced the military buildup in the Northeast Avalon first hand. Mr. Day provided information to the author during numerous conversations during 1992 and 1993.

Jack James; Mr. James moved to Gander in 1936 to work on the construction of the airport. He worked at the airport in various capacities until retiring in 1984, the last 20 years as Airport General Manager. Mr. James passed away in the early 1990's. He

provided information to the author during conversations in the summer of 1982 and 1983.

Col. A. F. Merewether; Col. Merewether (USAAF Retired) was the Commanding Officer, from late 1942 to 1946, of the USAAF's 8th Weather Region which included Newfoundland and Labrador. Col. Merewether provided information to the author in an exchange of letters during 1988 and 1989.

William Parrott Sr.; During the Second World War Mr. Parrott served as a Flight Lieutenant in the RCAF. He flew in the Newfoundland area in 1943 before spending the last two years of the war in Coastal Command flying anti-submarine missions in the vicinity of the United Kingdom. He provided the author with information during numerous conversations in 1992 and 1993.

Lester Shea; Mr. Shea was employed by the International Power and Paper Company as a Woods Operations Manager in the Benton-Indian Bay area in the mid-1930's. Mr. Shea, because of his local knowledge of the area escorted the Air Ministry officials during their site selection survey for Gander Airport. Mr. Shea passed away in the mid-1980's. He provided the author with information during numerous conversations in 1979 and 1980.