



CANADIANS ON RADAR
ROYAL CANADIAN AIR FORCE
1940 - 1945

George K. Grande

Sheila M. Linden

&

Horace R. Macaulay

FOREWORD

Looking back more than sixty years to the terrible days of the Second World War, Canadians have a tendency to assume that victory was inevitable. Of course, the Allies had to win, didn't they?

Well, no. The Allies almost lost. In 1940, after the fall of France, Britain and the Commonwealth were alone against a triumphant Nazi Germany. The United States was neutral until December 1941, the Soviet Union an unfriendly, but technically neutral, power. Even after Germany invaded the USSR in June 1941, even after the war spread into the Pacific, the Allies were fighting for survival for a long, difficult period.

What turned the tide? Great leadership, to be sure. The courage of soldiers, sailors and airmen, of course. But also technology, scientific wizardry, and the efforts of "boffins" in Britain, the United States and Canada. The scientists produced the high tech ideas and then the armed forces implemented them in action.

This book tells the all-but-unknown story of the Canadian role in the radar war. The Official History of the Royal Canadian Air Force understandably could only write about the squadrons, wings and groups Canada despatched around the world. Forgotten were the six to seven thousand radar specialists the RCAF raised and gave to the Royal Air Force. Dispersed in penny packets from North Africa to Malta, from Sicily and Italy to Northwest Europe, from the Murmansk Run to Australia, from Burma to Britain and "neutral" Turkey, the Canadian radar specialists provided at least half of the RAF's expertise in this critical, war-winning area.

These men played a disproportionate part in the Allied victories. Characteristically, Canadians knew nothing about them-until now. Based on letters, diaries, tape recordings and photographs, this book takes a giant step to filling a gap in our understanding of the radar war and of the RCAF contribution to that triumph.

I commend those who produced this fine record of their service, this tribute to their comrades who died in action or in Prisoner of War camps, and this story of Canadian achievement. It is a story that must not be forgotten.

J. L. Granatstein

(Historian J. L. Granatstein was Director and CEO of the Canadian War Museum from 1998-2000.)

ACKNOWLEDGEMENTS

In a work of this nature, it is almost foolhardy to pick and choose from among those who contributed in one way or another to the realization of “The Book” which was so long in conception - yes, difficult at times - and so satisfying at birth.

“The Book”, of course, would never have seen the light of day if it had not been for the tremendous enterprise of Bob Linden whose idea it was and who had the drive (and support) to see it through to its completion. This is really Bob’s book in every way.

Of all those old colleagues who met regularly in the Linden dining-room (complete with coffee and donuts), the one who deserves pride of place and special recognition must be ‘Red’ Macaulay for his constant and unflinching technical and common sense support. In addition to writing his own chapters, Red developed the standards specification, provided many personal photos and devoted countless hours supporting the other authors by preparing computer outputs of their essays at various stages.

The other members of this “Book Committee” were Bill Barrie, Alf Cassidy, Phil Campbell, Doug Gooderham, your editor George Grande, Fred Hunt, Bill McLachlan and our financial officer Julien Olson. We all worked well together - and apart - never doubting that our aim would be accomplished so that some 16-year-old fifty or more years from now, would be able to get some sense of what RCAF radar mechanics did in World War II in all sorts of circumstances and places throughout the world.

Others should also be mentioned here - all of them radar types, of course. They all contributed in their own way to making this history come alive. These were Jim Crowson, Doug Swanson and Ken Shoultz, who were heavily involved in producing our master index, a huge production job in itself. Finally, there was Bert MacGirr who created the inside pages of the covers in such a striking fashion. And Co-Editor Sheila Linden, you were always there with your red pencil and your golden touch.

The authors of each chapter are naturally the backbone of our common endeavour. We are all mutually grateful for their contributions which, readers will note, are in some cases one chapter on one theme and in others several chapters on several subjects.

Be that as it may, these stories are the core of our history, each written in the writer’s own style and with his own perspective. Let us repeat their names for the generations to follow. There could easily have been more: Bill Barrie, Phil Campbell, Alf Cassidy, Doug Gooderham, Fred Hunt, Bob Linden, Red Macaulay, Bill McLachlan, Rus Robinson, Jack Whitehead and Dick Batch. Many of the chapters also contain personal anecdotes of many other radar colleagues which makes them authors too.

Binding all these together saw the inner sanctum of the book, the mini-Editorial board- Sheila, Bob, Red and George- some of us very computer-wise, and others of us quite the opposite. We are a non-

profit organization formed with only one purpose in mind- to get our story out to post-secondary educational libraries throughout the land. We had no government support and but one silent benefactor.

Readers may - or may not - be surprised to know that the average age of all our authors together with Editor George Grande, Co-Editor Sheila Linden and Technical Editor Red Macaulay, is 79.5 years. We are certainly not free of afflictions but, with our wives' and friends' support, we have truly persevered and made out of this small part of our retirement a tribute to our hitherto silent World War II Canadian radar contribution, to add to Canada's military annals.

TABLE OF CONTENTS

Chapter I	Policies and Politics in RCAF Radar - World War II <i>R. F. Linden</i>
Chapter II	The First of the Six Thousand <i>W. H. Barrie</i>
Chapter III	Wartime Training of RCAF Radar Technicians in Canada <i>J. R. Robinson</i>
Chapter IV	The North Atlantic Region <i>D. Gooderham</i>
Chapter V	The Arctic Convoys <i>H. R. Macaulay</i>
Chapter VI	Malta - The George Cross Island <i>R. F. Linden</i>
Chapter VII	The War in the Desert <i>R. F. Linden</i>
Chapter VIII	The Italian Campaign - The Invasion of the South of France - 1943 - 1945 <i>R. F. Linden</i>
Chapter IX	RCAF/ RAF "Civilian" Radar Technicians in Turkey 1943 - 1945 <i>R. F. Linden</i>
Chapter X	Airborne Interception Radar <i>H. R. Macaulay</i>
Chapter XI	Ground Controlled Interception Radars <i>H. R. Macaulay</i>
Chapter XII	60 Signals Group, Fighter Command, Royal Air Force <i>J. R. Robinson</i>
Chapter XIII	OBOE <i>A. Cassidy</i>
Chapter XIV	EUREKA and Radar Beacons <i>F. R. Hunt</i>
Chapter XV	Glider- Borne Radar <i>F. R. Hunt</i>
Chapter XVI	GEE and LORAN <i>W. P. Campbell</i>
Chapter XVII	H2S and ASV <i>W. P. Campbell</i>
Chapter XVIII	South East Asia <i>D. Gooderham</i>
Chapter XIX	South Pacific, Guadalcanal, New Guinea, Fiji, New Zealand, Australia <i>R. F. Linden</i>
Chapter XX	Canadians on Radar in Canada <i>W. McLachlan</i>
Chapter XXI	Ground Controlled Approach Radar <i>J. P. Whitehead</i>

Introduction

A compelling reason for compiling the histories of a small group of Royal Canadian Air Force radar technical officers and technicians lies in the mandate given to the authors of the Official History of the Royal Canadian Air Force. As explained in Volume III, "The Crucible of War", the mandate of the Official History is limited to RCAF Squadrons and higher RCAF formations. Its constraining mandate resulted in the Official History being applicable **to only twenty five percent** of the 93,844 RCAF personnel who served overseas during WW II.

Over the past twenty years there have been many unrelated enquiries and some submissions to the Department of National Defence, History Directorate, by those who served in the Royal Canadian Air Force as radar technicians and radar technical officers. They were concerned, as they reached their late Fifties and early Sixties, that the story of their contribution to the Allied cause in World War II would never be recorded in any official publication.

In July 1990, the History Directorate advised "Our mandate is to publish the history of the RCAF, but not necessarily of Canadians serving with the RAF."....."In the official history, however, the remarkable work of Canadian radar personnel will not receive the detailed attention that it really deserves." (1)

The Official History of the Royal Canadian Air Force, explains that "..... a substantial majority of the 93,844 RCAF personnel who served overseas between 1940 and 1945 did not serve in Canadian squadrons:"....."Their stories are not to be found here."...."To write them would be to write the entire history of the air war, a multi-volume task quite beyond the financial and human resources of this directorate." (2)

BUT TO COMPLETELY IGNORE THEM HAS, AND WILL, DENY CANADA'S FUTURE GENERATIONS ALL KNOWLEDGE OF THEIR EXISTENCE AND THE NATIONAL PRIDE OF THOSE WHO SERVED AND SACRIFICED DURING THE ALLIED ARMED FORCES' DARKEST DAYS DURING WORLD WAR II.

For example, the 1940 - 1943 history of the Desert war in Africa and the 1943 - 1945 history of the Italian campaign is limited, in the Official History, to the activities of 417 Squadron, a mere **12 fighter aircraft and about 200 men.**

1) Letter from W.A.B. Douglas, Director, Directorate of History, Department of National Defence, to R.F. Linden, (file 13325-500/L (D Hist) 16 July 1990.

2) Volume 3, "The Crucible of War, 1939 - 1945" published 1994.

For example there is no mention:

-of the siege and devastation of Malta where four of the five radar stations were under the command of RCAF officers.

-of the Africa Corps capture of Tobruk where the RCAF commanding officer of the Radar station destroyed the secret equipment and escaped by sea.

-that the mobile radar which was on station at H hour-2, D-Day for the invasions on the beachheads at Syracuse, Sicily; Salerno, Italy; Anzio, Italy and St Tropez, France, was under the command of an RCAF Officer.

It is the aim of the authors of this series of essays that they will supplement Volume III of the Official History of the RCAF. This void in our Canadian Military annals was caused by the limited financial and human resources available to the History Directorate in the research and writing of Volume III of the Official History. This should not in any way detract from the significant contribution made by the authors of the Official History.

These stories are about a significant and particular sector of those of the RCAF who served overseas with the RAF and other Allied Air Forces. As the authors of Volume III observed, to give a complete picture of this group would necessitate the writing of the entire history of the air war. However, it is considered that this series is sufficiently broad in scope to provide an illuminated sketch which, to some extent, will provide some balance to Volume III of the Official History.

In a contract between the Canadian and British Governments, apart from the British Commonwealth Air Training Plan, from June 1940 to April 1943, the RCAF recruited and the RAF trained five thousand radar technicians and officers for service in the RAF. It is not overstating the role played by these radar technicians to say that their contribution in every theatre of the war was a fundamental, if not a critical contribution to ultimate victory. Their services in installing, maintaining and operating this sensitive and most secret equipment were pivotal in all phases of World War II: the Battle of the Atlantic, the ceaseless bombing of Germany and its satellites, the land battles in North Africa, Burma, Italy and North-West Europe, Singapore, Tobruk, Guadalcanal and in all the theatres across the world where the RAF, the Commonwealth and Allied Air Forces were called upon to serve.

Apart from gross numbers, there is neither information nor detail about the overseas service of these RCAF radar officers and airmen in either the archives of the Department of National Defence or in the National Archives. It is small wonder in that the Minister of National Defence for Air, the Honourable C.G.Power, stated to the House of Commons in June 1943: "I do not know of any class we have sent over who are more under the Royal Air Force.

They are mixed up everywhere; they are not on Canadian squadrons. I do not know who is in charge of them."... "They are R.C.A.F. They wear R.C.A.F. uniforms, but their careers are dictated by the R.A.F."(1)

(1.) *Hansard p. 3378 Vol IV 1943, June 7.*

The history of their service is only contained in their personal records which are not available for historical scrutiny. Without nominal roles or records we had to seek members of this aging group. We corresponded with over seven hundred people who replied to the articles and advertisements seeking out the WW II RCAF Tech/radar officers and airmen. Advertisements and articles were placed in daily newspapers, alumni, professional and seniors' magazines. Also the Air Force Telecommunications Association, the Canadian Legion, the Air Force Association, and other veterans' organizations were a great help by including articles in their publications and newsletters. Thus, over four hundred of this group have contributed information, anecdotes and stories about their WW II RCAF careers. These range from a few sheets of handwritten foolscap to 30 - 50 typewritten pages. A few have sent audio tapes several of which were up to 2½ hours in length.

The vast majority of these accounts have not, of course, been used in our limited book. They will, however, be retained and placed in an appropriate museum or archive for future generations to examine and delight in. At least that is the fond hope of the authors of the present chronicle.

The main stories were verified by examining the RAF Operations Record Book of the applicable unit or squadron. These records are held at Public Records Office, Kew, Richmond, Surrey, England. In the latter stages we were fortunate to chance upon The Second World War, 1939 - 1945, Royal Air Force Signals Volumes. Some thirteen volumes of the Royal Air Force Signals (History) were issued as numbered Air Ministry documents with confidential or secret security classifications in the post-war era. These documents were finally declassified in 1975.

There were over six thousand RCAF radar officers and technicians who served overseas in every theatre of war throughout WW II. If there should be a motto for these books it was expressed well by Jack Phillips of Oakville, ON, who stated "I didn't win the war but I was there."

The first in this series of books was "Radar Officers of the Royal Canadian Air Force 1940 - 1946" by J.R. Robinson and F.G. Grahame.

The second was "Canadians on Radar in South East Asia 1941 - 1945" by Angus Hamilton. The saga of the seven hundred and twenty three RCAF radar officers and airmen radar technicians who served with the RAF, Commonwealth and Allied Air Forces in South East Asia in World War II.

This present book is a series of essays about the experiences of some of the RCAF radar technical officers and airmen technicians who served in theatres in WW II inadequately covered by the Official History. It is by no means a complete list. A complete list is impossible from the records available some fifty years later.

It is concerned with the global war: The South Pacific, Malaysia and Singapore, Burma and China, The Desert War before and after the Victory at El Alamein, The Siege of Malta, The Italian Campaign including the landings at Syracuse, Salerno, Anzio and St Tropez, The preparation for D-Day and D-Day landings in Normandy, The North-West Europe campaign, Iceland and even Russia.

Our book is intended as a sampler to inspire future generations to dig and search further into their heritage. It is a guide, a sketch, a broad picture to show Canadian sacrifices and contributions not mentioned in the Official History.

