



THE DE HAVILLAND CANADA DHC-1

*Chipmunk*





THE DE HAVILLAND CANADA

DHC-1

*Chipmunk*

THE POOR  
MAN'S SPITFIRE



HUGH SHIELDS ROD BROWN JOSE GONCALVES ROD BLIEVERS

**S B G B**  
PUBLISHING



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Sitting at dispersal and looking like so many diminutive Spitfires, Chipmunks of the Royal Danish Air Force (RDAF) soak up the sun in this well composed rare colour photo taken at RDAF Flyveskolen, Værløse in 1977. This was the last day of service for the Chipmunk in the RDAF. P-140 later became OY-ATR, P-142 is now OY-ALL. (Alf Blume)

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FRONT COVER PHOTOS: Main: de Havilland Canada company demonstrator CF-FHY. (CASM) Bottom left: Canadian built 1950 DHC-1B-2-S3 bearing service number 18011. (Wayne Kerr) Middle: UK built T.Mk.10 bearing service number WP 803. (Alf Blume) Bottom right: Portuguese built T.Mk.20 bearing service number 1316 with a Lycoming engine. (J. Goncalves)

FRONT END PAPER: Wearing early Royal Canadian Air Force (RCAF) Stations codes, a flight of five Chipmunks are seen over typical Canadian countryside in March of 1955. Left to right: DA-008, DA-188, DA-186, DA-183 and DA-173 (CFJIC PL 87476)

BACK END PAPER: Company demonstrator CF-FHY with test flight staff in front of hangers at Downsview in February of 1955 (CASM 1481)

HALF TITLE PAGE: Issued service no. 18035 when taken on strength by the RCAF in the spring of 1956, DHC serial no. 173-211 is now registered as CF-POW and resides in Hamilton, Ontario as part of the Canadian Warplane Heritage Museum's (CWHM) extensive flying collection. (Eric Dumigan)

TITLE PAGE: Framed by a cloudless sky, WP 924 banks to port in this timeless photo from Chipmeet. Focus of this annual late May gathering of Chipmunks in Belgium is safety first, followed by fun, fellowship, formation flying, food and all things Chipmunk. (Alf Blume)

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# PREFACE

THIS BOOK IS SOMEWHAT DIFFERENT than the usual aviation work in that it contains contributions from four individual authors, all either Chipmunk owners, pilots or both. Based in Canada, the UK, Portugal and Australia, their unique perspectives on the history of the Chipmunk combine to produce a book with international scope. As such, items including spelling ie. (aluminum versus aluminium), variations in the format of dates, punctuation and grammar naturally vary and no attempt has been made to standardize these colloquial differences. If at times this leads to confusion we apologise, hope the reader embraces these geographic variations and enjoys this history of the de Havilland Canada DHC-1 Chipmunk, an aircraft with a truly international story.



RCAF Chipmunks 18025 and 18027 in formation during acceptance flights in March of 1956. Designated as the DHC-1B-2-S5, sixty would be taken on strength by the RCAF, supplementing the three DHC-1A-1 and fifty DHC-1B-2-S3 aircraft ordered between 1948 and 1952. (CASM 7657)



# The Chipmunk in Canada

HUGH SHIELDS





DHC-1B-2-S5 RCAF serial no. 18067 (205-243) in a vertical dive during acceptance flights out of Downsview in August 1956. Flown by DHC Test Pilot George Neal, this aircraft was received by Test Flight on August 17th, was signed off as fit for release to the customer on August 23rd and accepted by the RCAF on September 7th. The Chipmunk airframe was dive tested during certification to over 260 mph+ with no evidence of structural failure or control flutter but was placarded to a maximum of 200 mph (174 knots) in order to avoid engine overspeed damage. (DHC/Bombardier 7823)



# FOREWORD

## FOR THE DHC-1 IN CANADA



DHC Test Pilot George Neal circa 1948. (CASM 9874)

**THE STORY OF THE CANADIAN CHIPMUNK** has finally been recorded for all to enjoy. The writer, Hugh Shields has brought together facts, photos and scads of information which leads the reader from the birth of an idea to the beautiful DHC-1 Chipmunk, including the men involved in bringing it about in the lean times after the war and the hurdles they had to deal with.

Hugh owns and flies his own Chipmunk in St. Thomas Ontario, delighting in showing it to young and old pilots and pilots to be. His affection for the Chipmunk prompted him to really search out and record the Canadian story behind the success of this, the first design for de Havilland Canada.

I was privileged to have played a part in the early development flying of the prototype Chipmunk, demonstrating, and now owning one, so I share Hugh's love for this aircraft and its history. Reading this story brings back many pleasant memories of both the aeroplane and the men I worked with to make this dream come true. Well done Hugh!

George Neal  
Chief Test Pilot DHC (ret)



RCAF serial no. 18019 soars over the majestic Canadian Rockies west of RCAF Station Claresholm in October of 1955. Declared surplus in 1971, this aircraft currently resides in Quebec, Canada as CF-CYN. (CFJIC PL 91104)



# INTRODUCTION

DE HAVILLAND CANADA'S DHC-1 'CHIPMUNK' first graced Canadian skies over Downsview, Ontario on May 22nd, 1946. The inaugural flight was a significant achievement for the Canadian subsidiary of parent company de Havilland England, and few in attendance that day could possibly have imagined what a storied future lay in wait for this new design. Additional aviation icons such as the DHC-2 Beaver, DHC-3 Otter, DHC-4 Caribou, DHC-5 Buffalo and DHC-6 Twin Otter would soon spring from the fertile minds of de Havilland Canada's design team but this is the Chipmunk's story.

Given the success of these later models it is no small wonder that the DHC-1 found itself undeservedly overshadowed. As a Chipmunk owner and pilot I could find precious little published material on the type, and certainly nothing in the form of a comprehensive history on its birth, development and service here in Canada. To rectify this situation I entertained the alarming thought of writing just such a book. Having spent two years completing a ground up restoration of my own aircraft, I had on occasion asked UK Chipmunk 'guru' Rod Brown for his opinion. When informed in late 2005 of my desire to write a book, he replied that my project "was very timely indeed" as he too was considering putting something together, and that perhaps we could join forces along with others to publish a 'tome' that does justice to the type. Agreeing on content we went to work, this is the result.

A book such as this does not come together without some effort, an element of luck and the generous contributions of others. Illustrations truly are 'worth a thousand words' and words alone cannot thank those who assisted in providing the rare, and in some cases previously unpublished photos and material found herein.

Firstly thanks to Lance Kessler and Don Band of de Havilland/Bombardier for getting the ball rolling by opening the door to their corporate photo collection at Downsview, and Paul Cabot, curator at the Toronto Aerospace Museum (TAM), now the Canadian Air and Space Museum (CASM) for giving me free reign in the back rooms. In Ottawa, Janet Lacroix at the Canadian Forces Joint Imagery Centre (CFJIC), Major Matt Joost at the Directorate of History and Heritage (DHH) and Ian Leslie at the National Aviation Museum (NAM) for steering me in the right direction. Also to Linda Coban at the Canadian National Exhibition (CNE), Toronto, Chad Martin at Canadian Warplane Heritage (CWHM), Hamilton, and Jim Palmer at Transport Canada (TC), many thanks. As to research, Fred Hotson, Larry Milberry, Patrick Martin, John Griffin and Wally Feydenchuk, all Canadian aviation authors whose previous works made my task much lighter. To aviation photographer Eric Dumigan for providing pictures, especially those of the 60th anniversary weekend at Downsview in May 2006, thank-you. Also, thanks to Mike Ody for his research, Andrew Cline for photos, Gord McNulty for making available his and his father's priceless collection of Chipmunk photographs, and to Dax Wilkinson from Red Canoe National Heritage Brands for use of the 60th anniversary logo. To Norm Merrin who passed away during the 60th anniversary weekend, a special thank you. Norm was a noted illustrator who worked at de Havilland Canada for many years producing some of their more memorable exploded view images of DHC aircraft. To mark the 60th, Norm produced the drawing of a "composite" Chipmunk while undergoing medical treatment in the hospital. From there he often called to make sure in his fastidious way that work being done met his exacting self imposed standards for accuracy. He is missed by family and friends.

With respect to personal contributions, thanks goes out to former DHC President and Chief Test Pilot Russ Bannock, and former DHC Test Pilot George Neal for their time, access to their flying logs and personal insights into the Canadian company. Both Russ and George are inductees in Canada's Aviation Hall of Fame. Also, to Bob Fassold and Ron Holden, for sharing their thoughts on the flying qualities of the Chipmunk. All of the above gentlemen are former RCAF pilots. Regarding involvement, George Neal deserves special mention. 'Sharp as a tack', a wealth of information and still flying his Chipmunk more than 62 years after his first Chipmunk check ride with in Russ in 1947, George was kind enough to tolerate my constant calls with requests

for information, rare photos and confirmation that I was headed in the right direction. Many an enjoyable afternoon was spent over lunch at his favourite deli debating the accuracy of my work and whether I would allow him to pay the bill. Without his help my contribution to the Chipmunk story would have been greatly diminished.

It would be a gross oversight if I did not mention the name of Ian Fyfe. A competent commercial pilot with a keen “editors” eye, Ian volunteered considerable amounts of his valuable time to proof the entire work numerous times. As his introduction to powered flight came in the backseat of an Air Experience Flight (AEF) Chipmunk at the tender age of fifteen, he is duly qualified.

To my good friend Donald Patterson for accompanying me on the multiple 600 km mid winter trips made to the various archives in Ottawa. For his questionable research abilities, talent for spilling coffee at every opportunity, and boundless enthusiasm for all things aviation, I am forever grateful.

To my parents, both of whom worked on the ill fated Avro Arrow, who peaked my interest in aviation at an early age by taking me to see the RCAF Golden Hawks on a perfect summer day in 1963, and finally, a sincere and heartfelt thanks to my wife Joanne and to my children Scott, Alex and Katherine. Without their constant encouragement, understanding and support this book would not have been possible.

Hugh Shields

July 2009



Author's aircraft seen wearing RCAF Station Centralia unit code DA and non standard service number 173 (second half of DHC issued build number 135-173) while on a training flight out of Trenton in March of 1955. (CFJIC PL 130124)



## CHAPTER ONE

# SETTING THE SCENE

*“No compromise with the requirements of a sociable touring aeroplane was allowed.”*

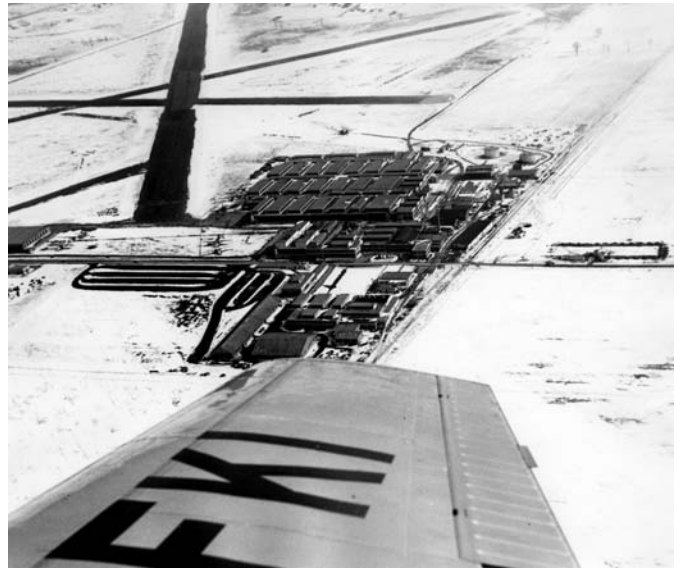
“The de Havilland Aircraft of Canada” 1947

IN ORDER TO TELL THE STORY of the DHC-1, one must first attempt to paint a picture of the time frame involved. Once the reader clearly understands the prevailing atmosphere of the day, the various forces at play and the hurdles cleared, can they begin to fully appreciate what a success story this little aircraft became. Seeing its start in 1939, the Second World War (WWII) was a tumultuous period in human affairs. Lasting more than five long years, bitter conflict in the European theatre finally ended on May 8th, 1945. Hostilities in the Far East raged for a number of months yet before drawing to an abrupt close on August 15th. At this same time, a post war Canada was once again getting acquainted with the less urgent pace of civilian life. Armed services were demobilizing, those in uniform were returning home from overseas in large numbers, and the country's military factory production was quickly shrinking to pre war levels.

**1945**

### SETTING THE SCENE

In this environment, prospects for the aircraft industry looked both exciting and grim. WWII had ushered in a new era with respect to both aircraft development and production. Procurement during the 1939-1945 period had been ramped up to a fevered pitch with all manner of new and exotic designs being introduced. Winning concepts were pressed into mass production resulting in hundreds of thousands of aircraft being built. As the primary trainer of allied aircrew under the British Commonwealth Air Training Plan (BCATP), Canada had seen over 130,000 Air Force personnel pass through her schools during this period. Such was the country's contribution to aircrew training and aircraft production that US President Roosevelt had called Canada “The Aerodrome of Democracy”. This effort had required vast resources including large numbers of aircraft, however by mid 1945



Looking south, a late 1940's aerial view captures de Havilland Canada's home field at Downsview, Toronto. The flight test department's hangar sits alone east of the main production facilities. (George Neal)



A DH82C Tiger, the Canadian version of de Havilland's highly successful Tiger Moth sits in front of DHC's hangar at Downsview. By 1946 this popular 'ab initio' trainer was fast becoming obsolete in the eyes of the company and its customers. (de Havilland/Bombardier 5705)