

*Celebrating 17 Years of Flight Training  
1994-2011*



# LANGLEY FLYING SCHOOL

2011

COMMERCIAL PILOT  
GROUNDSCHOOL  
MANUAL

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# COURSE OUTLINE

## *General Information*

This course seeks to prepare its students to successfully write the Transport Canada written examination for the Commercial Pilot Licence. More than this, however, this course is first step for many in establishing themselves a career as professional pilots. The Commercial Pilot exercises far-reaching privileges and is at the very centre of a large and complex infrastructure designed to organize and make safe the daily movement of aircraft around the globe; with this great privilege, however, comes great responsibilities—every decision and every action made by the pilot entails the ultimate trust of life and security from paying passengers.

## *Evaluation*

Determination of Final Grade:

Review Quizzes (Eight)	40%
Final Examination	40%
Class Attendance and Participation	10%
Tutorial Attendance and Participation	10%

To be recommended to write the Transport Canada Commercial Pilot examination, students must attain a minimum course grade of 75%.

Additionally, before students can write the Final Examination, they must complete eight *Review Quizzes* (each quiz consisting of five to twenty multiple choice questions), to be written in class; the questions used in the Review Quizzes will be extracted from the study questions that appear at the end of each chapter. Passing mark on the Review Quizzes is 75%. The Review Quizzes may be written any time during the term for those students undertaking accelerated home study. Students are encouraged to submit completed study questions for review and correction by the instructor.

It is impossible to cover in class all of the material associated with the Transport Canada examination. How well a student does depends directly on his or her efforts in reading, studying at home, and asking questions in class. To get the full benefit of class discussions, students should complete the assigned readings prior to class.

Transport Canada requires that groundschool attendance for individual students be maintained at the school in a Pilot Training Record. Students pursuing accelerated home study must carefully record the times and dates when they study; these times and dates will then be transcribed onto their Pilot Training Record and used in place of class attendance times.

## *Required Equipment*

1. E6-B Flight Computer (or equivalent)
2. ICAO Chart Rule or Navigation Plotter
3. Douglas Protractor
4. Vancouver VFR Navigation Chart.
5. Vancouver VTA Navigation Chart
6. WAC E-15
7. Enroute Low Altitude Chart LO2.

*Required Texts*

David L. Parry

2010 *Langley Flying School Commercial Pilot Groundschool Manual* Langley: Langley Flying School, Inc

Sandy A. F.  
MacDonald

2000 *From the Ground Up* (Twenty-eighth Revised Edition) Ottawa: Aviation Publishers Co. Limited

Transport Canada

— *Aeronautical Information Manual* Ottawa: Minister of Supply and Services Canada

*Recommended Texts*

Canadian Forces Air  
Command

— *Air Command Weather Manual* Winnipeg: DND Canada

Kent Johnson and John  
Mullock

1996 *Aviation Weather Hazards of British Columbia and the Yukon* Kelowna: Source Graphics and Print Co. Ltd.

William K. Kershner

1994 *The Advanced Pilot's Flight Manual* (6th Edition) Ames: Iowa State University Press

Peter F. Lester

1995 *Aviation Weather* Englewood: Jeppesen Sanderson, Inc.

Richard L. Collins

1977 *Flying Safety* New York: Delacorte Press/Eleanor Friede

Gregory N. Brown and  
Mark J. Hold

1995 *The Turbine Pilot's Flight Manual* Ames: Iowa State University Press

Macarthur Job

1996 *Air Disaster* (Volumes 1 & 2) Fyshwick: Aerospace Publications Pty Ltd.

Michael J. Culhane

— *Commercial Pilot Written Test Book* Richmond: Accelerated Aviation Training

*Outline*

Section I LICENSING REQUIREMENTS

Readings: Parry, "Licensing Requirements."

Section II AIRFRAMES, ENGINES AND SYSTEMS—PART I

Readings: Macdonald, "The Aeroplane."  
Parry, "Airframes, Engines and Systems—Part I."

Section III AIRFRAMES, ENGINES AND SYSTEMS—PART II

Readings: MacDonald, "Aero Engines."  
Parry, "Airframes, Engines and Systems—Part II."

***Review Quiz #1: Licensing Requirements and Airframes, Engines and Systems.***

Section IV AERODYNAMICS AND THEORY OF FLIGHT

Readings: MacDonald, "Theory of Flight."  
Parry, "Aerodynamics and Theory of Flight."

Section V CANADIAN AVIATION REGULATIONS

Readings: Macdonald, "Aeronautical Rules & Facilities."  
Parry, "Canadian Aviation Regulations."

***Review Quiz #2: Aerodynamics, Theory of Flight and the Canadian Aviation Regulations.***

Section VI FLIGHT OPERATIONS

Readings: MacDonald, "Airmanship."  
Parry, "Flight Operations."

Section VII HUMAN FACTORS AND PILOT DECISION-MAKING

Readings: Parry, "Human Factors and Pilot Decision-Making."

***Review Quiz #3: Flight Operations—Part I (Airpersonship) and Human Factors and Pilot Decision-Making.***

Section VIII METEOROLOGY—PART I (GENERAL)

Readings: MacDonald, "Meteorology."  
Parry, "Meteorology—Part I."

***Review Quiz #4: Meteorology—Part I (General).***

Section IX METEOROLOGY—PART II (ACTIVE WEATHER)

Readings: MacDonald, "Meteorology."  
Parry, "Meteorology—Part II."

***Review Quiz #5: Meteorology—Part I (Active Weather).***

Section X WEATHER INFORMATION

Readings: MacDonald, same as above.  
Parry, "Weather Information."

***Review Quiz #6: Meteorology—Part II (Weather Information).***

Section XI      NAVIGATION

Readings:      MacDonald, "Air Navigation."  
                      Parry, "Navigation."

***Review Quiz #7: Navigation.***

Section XII      RADIO NAVIGATION

Readings:      MacDonald, "Radio Navigation."  
                      Parry, "Radio Navigation."

Section XIII     FLIGHT INSTRUMENTS.

Readings:      Parry, "Flight Instrument"

***Review Quiz #8: Radio Navigation and Flight Instruments.***

***FINAL EXAM***

# Acknowledgements

The profession of piloting an aircraft is the ultimate profession of risk management. This manual will hopefully provide the necessary initial training and knowledge that will enable students to become informed risk managers.

They say the early years in a child's life are crucial to the development of character in later life. We think the same applies to Commercial Pilot Students. Many of our Commercial Pilot graduates go on to fly big, fast, and high-flying aircraft—we get to see them work and learn during their first early steps as baby pilots. This is our pleasure.

I will take this opportunity to thank the many people who have contributed to my own understanding of both flying and education, and those who have contributed to that collection of Instructors and Students that is called Langley Flying School. Going back to the late 1970s, I am personally indebted to University of Calgary Professors Al Olmsted, Dole Hatt, and Albert Heinrich who made great effort to implant curiosity into the minds of their young undergraduate students. I am also personally indebted to the many Flight Instructors I have had the pleasure of working with in my role as “student”—which of course for any good instructor is a never-ending role—Lenora Crane, Gordon Jones, Mac Arbuthnot, Wayne Wolshyn, Jo Harris, Heather Baile, Jamie Roth, John Laing, Donn Richardson, Paul Tinevez, Mark Adam, and Jim Krause. With respect to aircraft maintenance engineering and airworthiness, I am grateful for the efforts and assistance over the years by Don and Loraine Nikkel of Valley Aero Engines Ltd., and Joel H. Schoenberger, Wendy Boyes, and Simon Mears of Transport Canada's Maintenance and Manufacturing. In the end, one measure of life's satisfaction is the quality of people you work with.

Langley Flying School is but a mere collection of dedicated and hardworking individuals who, motivated by the love of flying (surely not of money!), have spent many hours contributing to the system of flight training operations that has evolved over the years—Kevin Williams, Michel Rouch, Sheldon Pohl (now a Boeing 737 Pilot with *Westjet*), Heather Wolf (now Boeing 747 Pilot with *EVA Airways*), Jarrod Burgess (now corporate jet pilot in Oklahoma), Nick van Empel (now an *Air Canada* pilot), Ron Reynolds, Corey Dyer, Dave Beales, Jessica Hamstra (now a *Air Canada Jazz* pilot), Rita Methorst, David Woollam (now a Twin Otter Training Captain in the Maldives), Bob Brown, Dave Page (now a King Air medevac pilot with *Wabusk Air*), Tom Larkin, Brandon Dreyer (now a Boeing 727 pilot with *Kelowna Flightcraft*), Adam O'Sullivan, Patrice Gagnon (now a *Air Canada Jazz* pilot), Adam Katagiri, Peter Waddington, Ben Orłowski (now a Saab 340 pilot with *Pacific Coastal Airlines*), Ryan Gahan (now a Beech 1900 Captain with *Pacific Coastal Airlines*), Cullen Worth (now a Twin Otter Captain in the Maldives), Philip Craig (now a Beech 1900 Captain with *Pacific Coastal Airlines*), and Justin Chung (now a Saab 340 pilot with *Pacific Coastal Airlines*), Rod Giesbretcht, Naomi Jones, Hoowan Nam, Nam Vu, Mayank (Mike) Mittal, Beda Grunder, and Leon Bresler.

I always say that teaching flying is a wonderful profession that is rich in excitement, satisfaction, success and challenge. It truly is an honour to teach people how to fly. The pleasures of the job, however, originate from hearts and minds of students. Pilot students are never forced to come to school, and it is wonderful to work with such a highly motivated bunch. For all who obtain their pilot licence, their experience at Langley Flying School will hopefully serve as the first step in a wonderful adventure that will last a lifetime—for those who complete the Commercial Pilot Program, it will hopefully be the first step in an exciting and rewarding career. For young professional pilots, the movement up the experience ladder—hours flown—is a long grind. Enjoy each step and the experiences you acquire there. Keep your eyes on the prize, as they say.

As I tell people whenever I have the opportunity, I still have the same sense of excitement and anticipation that I had on my first flight lesson at High River Airport on January 15th, 1987. As any old pilot will tell you, sentiments such as these do not fade with time.

Special thanks to Elizabeth (Betty) Parry, for her career role as editor adviser, and Mother. The *Field of Dreams* that is Langley Flying School is shared with Ken Parry, my Father, whose dreams of flight were born “wide-eyed” on Sea Island back in the 1930s.

David Parry  
Langley, B.C.