

Farmhall Aviation Training

<http://www.farmhall.ca>



Commercial Pilot Groundschool Template for Groundschool Schedule

The following table indicates the number of hours it is recommended be spent on each topic. Farmhall Aviation Training recommends 3 hour sessions (with a short break in the middle) if possible and the times associated with the topics allow for a number of sessions of this length.

<i>Topic</i>	<i>Hours</i>
Introduction	1
Theory of Flight	5
PPL Navigation Review	1.5
Navigation	7.5
Air Law	9
<i>Problem-Solving Session</i>	3
PPL Meteorology Review	3
Meteorology	9
Engines and Systems	6
Human Factors	6
Equipment	6
<i>Problem-Solving Session</i>	3
Flight Operations	6
Introduction to IFR Flight	3
IFR Approaches	6
<i>Problem-Solving Session</i>	3
Practice Examination	3
Total Time	81

It will be noted that the classroom time given in this table barely covers the 80 hours required by Transport Canada for the Commercial Pilot Groundschool. The required total is reached by the students working independently during the course, using the Farmhall Aviation Training workbooks, recording their study time and bringing questions and comments to the Problem-Solving Sessions. Some flight schools also offer special seminars (e.g., winter flying) that are counted towards the CPL groundschool.

Notes on the content of each session are given below and full presenter's notes are available from the Farmhall Aviation Training web site.

Introduction

The introductory session is an essential part of the course. In this session it is made clear to the students that they are the ones who will be doing the work: not the instructor. At the CPL level it is not sufficient

for them to attend the classes passively and then sit the examination; they are presumably experienced pilots and have to be active participants in the class. It is stressed that the Farmhall Aviation Training workbooks cover topics deeper than is strictly required for the examination and that the students are assumed to be sufficiently mature to use the material at the level suitable for themselves. The course structure is also outlined during this session.

Theory of Flight

This is a topic that is perhaps least well taught at the PPL level and the students may have some “unlearning” to do. Some of these misconceptions can be uncovered by using the Theory of Flight Threshold Knowledge test (from the Farmhall Aviation Training web site) and the instructor works with the students to lay a firmer foundation for the next level of detail.

Many students are allergic to this section of the course by the need to use some basic mathematics. Others see this as a challenge and it is important that the instructor be able to rise to the challenge of the engineers in the class while re-assuring those who cannot handle numbers.

PPL Navigation Review

There are small points of PPL navigation that many students have never fully understood. The Navigation Threshold Knowledge test (from the Farmhall Aviation Training web site) is used to determine what these are and the weaknesses found are addressed in this preliminary half-session.

Navigation

The teaching of the commercial navigation syllabus is covered as follows:

1. Introduction to the
 1. LO charts (using LO5/6)
 2. WACsConsideration of the issues introduced by conical and cylindrical projections.
2. VFR flight planning at a level beyond that covered in the PPL syllabus, assuming that flights will be longer than those attempted for the PPL and will take place in less perfect weather. This includes the reading of all three levels of NOTAM, the calculation of points of equal and no return and more detailed weather analysis insofar as it affects choice of route.
3. Navigation techniques (excluding the famous but fatuous open-and-closing and double angle methods but including the really useful (!) method of finding the sun's true bearing). This section also includes the correct format for giving PIREPs and VFR position reports.
4. Radio navigation concentrating on GPS techniques and introducing VOR and ADF navigation beyond flying directly to and from beacons.

Air Law

Air law can be one of the most difficult areas of the syllabus to teach, having the possibly deserved reputation for being immensely dull. Farmhall Aviation Training proposes teaching this topic through

student interaction with the CARs and other online documents while working a large number of more-or-less practical scenarios. The instructor's notes provided list these scenarios.

Problem-Solving Session

This is the first of several problem-solving sessions. The students have been encouraged to read the workbooks and bring issues and questions to this session. In case there is little such feedback, the instructor has additional material to hand but, once the ice is broken, it is rarely needed.

PPL Meteorology Review

Although the students will have studied meteorology for their PPL, for many it is only when they build personal experience of flying in less than perfect weather conditions without an instructor to help them make weather decisions that its importance becomes clear to them.

One topic that the Farmhall Aviation Training presenters find has often not been properly understood at the PPL level is the different lapse rates and their effects on stability.

In particular, this session covers weather products that may have changed since the student got his or her PPL. If that was a long time ago, then even the GFA may be new. Certainly the more recent changes such as 30 hour TAFs will be new to all but the freshest PPL pilots.

Meteorology

There are few genuinely new topics in the CPL meteorology syllabus (the main ones possibly being Icing and the Upper Air Charts). This gives the instructor the opportunity to consider a number of the extended weather products available from the USA and to run a number of scenario-based weather briefing sessions.

Engines and Systems

This topic covers the additional forms of engine that have to be studied for the CPL (diesels, turbines, etc.) and the additional systems (Oxygen, de-icing, etc.).

Human Factors

The understanding of human factors is critical for safe flying, particularly at the commercial level.

Since many of the topics are difficult or impossible to cast in multiple-choice form, the actual Transport Canada examination questions are likely to be simple. This gives the instructor of this part of the course the opportunity to work with the class to analyse a number of case studies (from the Human Factors Workbook) of cockpit and ATC voice recordings in the period leading up to various incidents. These are analysed using James Reason's multi-layer technique.

Another important part of this section of the course covers pilot decision making and the workbook includes a large number of scenarios where decisions need to be made.

Equipment

This section covers basic aircraft equipment, including radio equipment in much more depth than is done at PPL level. It also covers the operation of additional instruments such as Strike Finders.

Problem-Solving Session

This again provides the opportunity for the instructor to confirm that the students are working outside class on the stretch exercises in the workbooks.

Flight Operations

Flight Operations will have been taught as “airmanship” at PPL level. This section of the course takes the PPL knowledge to a deeper level, particularly in the areas of aircraft performance (building on the Theory of Flight sessions) and winter operations (including the CRFI).

Introduction to IFR Flight

Although this is a CPL rather than IFR course, the holder of a CPL is entitled to fly VFR over-the-top. This places him or her into the situation where, in an emergency trapped above (or even in!) cloud, the student will need to know at least a little about the IFR system. This session covers the various stages of an entire IFR flight to give the student some understanding of how the IFR system works.

IFR Approaches

Studying some IFR approaches (in much less detail than would be done for an IFR course) provides two advantages:

1. it gives the students another opportunity to think through the VOR and ADF displays at various positions relative to the ground stations, thus reinforcing the radio navigation aspect of the navigation sessions
2. it provides some knowledge of how to escape from being trapped on top of an undercast at a destination when flying VFR over-the-top

Problem-Solving Session

This final problem-solving session allows the students to bring any final questions or queries to the class for class discussion and resolution.

Practice Examination

Farmhall Aviation Training provides a sample examination that specifically concentrates on areas of the syllabus where experience shows that students tend to be weak. The sample examination therefore does not reflect what will be met on a Transport Canada examination and this therefore not a replacement for the excellent books of examination questions available from Aerotraining and Aeropublishers.

Following this examination, which is generally worked in groups within the class rather than as a formal examination, the students are encouraged to work one of the other examination books and then

book the Transport Canada examination before they begin to forget what they have learned.