

## First Year Flight Syllabus

### Fall 2018

NOTE: The requirements for the Commercial Pilot License include:

**Total Time:**

- 200 Hours Flight Time
- 100 Hours Pilot-In-Command (PIC)
- 20 Hours PIC Cross-Country

**Training Time** - must be recorded in Pilot Training Record:

**35 Hours Dual** (not including simulator time):

- 5 Hours Night, including 2 Hours Night Cross-Country
- 5 Hours Cross-Country (may include 2 Hours Night Cross-Country from above)
- 20 Hours Instrument (maximum 10 Hours in simulator)

**30 Hours Solo:**

- 5 Hours Night, with 10 takeoffs and landings
- 300 nm **Radius** Cross-Country, including 3 *Full Stop* Landings away from point of departure (ensure log book entry is correct)

### Category 1 Medical

**Remember: Your Transport Canada Written Exam and your Flight Test must occur within 12 months of the License Application.**



## **Commercial Aviation Diploma Program First Year Flight Syllabus**

The First year Commercial Aviation Diploma Program Flight Syllabus is based on a repetitive outline. Each week there is a Dual Mutual flight, a Mutual flight, and a Solo Simulator session. There is a fourth lesson each week that takes various forms. It may be Dual Mutual, Dual, Mutual, or Solo. The fourth lesson may be in a simulator or in an aircraft.

### **Dual (D)**

A lesson with one instructor and one student.

### **Dual Mutual (DM)**

A Dual Mutual flight consists of a lesson with one instructor working with two students. The students are to work as a team. The pre and post-flight activities are shared and the briefings are conducted together. The flight itself is arranged that one student will fly the first lesson while the other observes from the rear seat. During a stop the students will switch places and the lesson will continue.

### **Mutual (M)**

Similar to the Dual Mutual, but without an instructor. The students are to work as a team. The pre and post-flight briefings are conducted together. The flight itself is arranged that one student will fly the first lesson while the other observes from the right seat. During a stop the students will switch places and the lesson will continue.

### **Solo (S)**

Solo is one student working alone.

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## **Dual Simulator (DS)**

A simulator lesson with one instructor and one student.

## **Solo Simulator (SS)**

A simulator session with one student working alone.

# Marking Scale

Southern Interior Flight Centre Marking scale is taken from the Transport Canada Private and Commercial, Multi Engine, and Instrument Rating Flight Test Guides. These criteria assume no unusual circumstances. Consideration will be given to unavoidable deviations from the published criteria due to weather, traffic, or other situations beyond the reasonable control of the candidate.

When applying the 4-point scale, award the mark that best describes the weakest element(s) applicable to the candidate's performance. Remarks to support mark awards of 1 or 2 must link to a safety issue, a qualification standard, or an approved technique or procedure.

<b>4</b>	<p>Performance is well executed considering existing conditions:</p> <ul style="list-style-type: none"> <li>Aircraft handling is smooth and positive with a high level of precision.</li> <li>Technical skills indicate a thorough knowledge of procedures, aircraft systems, limitations and performance characteristics.</li> <li>Situational awareness is indicated by continuous anticipation and vigilance.</li> <li>Flight management skills are exemplary and threats are consistently anticipated, recognized and well managed.</li> <li>Safety margins are maintained through consistent and effective management of aircraft systems and mandated operational protocols.</li> </ul>
<b>3</b>	<p>Performance is observed to include minor errors:</p> <ul style="list-style-type: none"> <li>Aircraft handling with appropriate control input includes minor deviations.</li> <li>Technical skills indicate an adequate knowledge of procedures, aircraft systems, limitations and performance characteristics to successfully complete the task.</li> <li>Situational awareness is adequately maintained as candidate responds in a timely manner to cues and changes in the flight environment to maintain safety while achieving the aim of the sequence/item.</li> <li>Flight management skills are effective. Threats are anticipated and errors are recognized and recovered.</li> <li>Safety margins are maintained through effective use of aircraft systems and mandated operational protocols.</li> </ul>
<b>2</b>	<p>Performance is observed to include major errors:</p> <ul style="list-style-type: none"> <li>Aircraft handling is performed with major deviations and/or an occasional lack of stability, over/under control or abrupt control input.</li> <li>Technical skills reveal deficiencies either in depth of knowledge or comprehension of procedures, aircraft systems, limitations and performance characteristics that do not prevent the successful completion of the task.</li> <li>Situational awareness appears compromised as cues are missed or attended too late or the candidate takes more time than ideal to incorporate cues or changes into the operational plan.</li> <li>Flight management skills are not consistent. Instrument displays, aircraft warnings or automation serve to avert an undesired aircraft state by prompting or remedying threats and errors that are noticed late.</li> <li>Safety margins are not compromised, but poorly managed.</li> </ul>
<b>1</b>	<p>Performance is observed to include critical errors or the <i>Aim</i> of the test sequence/item is not achieved:</p> <ul style="list-style-type: none"> <li>Aircraft handling is performed with critical deviations and/or a lack of stability, rough use of controls or control of the aircraft is lost or in doubt.</li> <li>Technical skills reveal unacceptable levels of depth of knowledge or comprehension of procedures, aircraft systems, limitations and performance characteristics that prevent a successful completion of the task.</li> <li>Lapses in situational awareness occur due to a lack of appropriate scanning to maintain an accurate mental model of the situation or there is an inability to integrate the information available to develop and maintain an accurate mental model.</li> <li>Flight management skills are ineffective, indecisive or noncompliant with mandated published procedures and/or corrective countermeasures are not effective or applied.</li> <li>Safety margins are compromised or clearly reduced.</li> </ul>

# G1000 Course Outline

**Prerequisite:** Private Pilot's License or higher with current medical

**Required Ground School:** 5 Hours- VFR and IFR Transition

Instructor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Prerequisite:** Completion of the G1000 transition course

**Required Flight Training:** - 1.5 -hour aircraft checkout  
- 2 G1000 based VFR cross-country flights

Instructor Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Lesson 1-D**                      **Check on Type C-172S**                      **C-172S**  
**Dual 1.2 hours**                      **Not Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Instructor Signature:** \_\_\_\_\_

### **Aim**

The aim of this flight is to ensure that the student's flying skills are at Private Pilot standards before advancing to new skills in the Commercial syllabus. This flight also serves as a checkout in a C-172.

### **Required Reading**

Flight Training Manual

Part 2 – Exercises 11 through 24

C-172S Pilot Operating Handbook

### **Preflight Briefing**

Type Checkout – As Required

### **Flight Sequences**

1. Aircraft Preflight Inspection
2. Use of Aircraft Check List
3. Soft/Short Field Takeoffs & Landings at CYLW
4. Steep Turns, Slow Flight
5. 1st flight for the G1000 checkout

### **Notes:**

**Lesson 2-D**                      **Check on Type C-172N**                      **C-172N**  
**Dual 1.2 hours**                      **Not Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Instructor Signature:** \_\_\_\_\_

### **Aim**

The aim of this flight is to ensure that the student's flying skills are at Private Pilot standards before advancing to new skills in the Commercial syllabus. This flight also serves as a checkout in a C-172N.

### **Required Reading**

Flight Training Manual

Part 2 - Exercises 11 through 24

C-152 Pilot Operating Handbook

### **Preflight Briefing**

Type Checkout – As Required

### **Flight Sequences**

1. Aircraft Preflight Inspection
2. Use of Aircraft Check List
3. Soft/Short Field Takeoffs & Landings at CYLW
4. Stalls, Spins, Spiral Dives

### **Notes:**

**Aim**

The aim of this session is to review and practice basic full panel instrument flying, and flying a “U” track pattern using Rate 1 turns and timed legs.

**Required Reading**

Flight Training Manual  
Part 2 - Exercise 24

**Preflight Briefing**

The “T” Scan and Rate 1 Turns

**The instructor will show the student how to start and set up the Frasca 131 for solo use.**

**Flight Sequences**

1. Straight and Level Flight
2. Rate 1 Turns
3. Climbs and Descents
4. Climbing and Descending Turns/Rate 1 Turns
5. Partial Panel Straight and Level – Various Airspeeds
6. Partial Panel Timed Turns
7. Partial Panel Climbing and Descending – Various Airspeeds and Rates

**Notes:**



**Aim**

The aim of this flight is to review flight planning, cross-country procedures and mountain flying techniques.

**Required Reading**

Flight Training Manual  
Part 2 - Exercise 23  
Mountain Flying

**Preflight Briefing**

Navigation and Mountain Flying Techniques  
*NOTE:* Each student is required to do a detailed flight plan, weight & balance, and weather assessment.

**Flight Sequences**

First Student: CYLW-CYRV  
Second Student: CYRV-CYLW

1. Flight Planning
2. File Flight Plan
3. Soft Field Takeoff
4. Open Flight Plan & Departure Procedures
5. Set Heading Procedures
6. Enroute Procedures
7. Soft Field Landing
8. Close Flight Plan
9. Review of Completed Navigation Log
10. 2<sup>nd</sup> flight G1000 checkout

**Remember – Cross-Country Survival Gear**

**Notes:**

**Aim**

The aim of this flight is to review flight planning, cross-country procedures and mountain flying techniques.

**Required Reading**

Flight Training Manual  
Part 2 - Exercise 23  
Mountain Flying

**Preflight Briefing**

Navigation and Mountain Flying Techniques

*NOTE:* Each student is required to do a detailed flight plan, weight & balance, and weather assessment.

**Flight Sequences**

First Student: CYLW-CYRV

Second Student: CYRV-CYLW

1. Flight Planning
2. File Flight Plan
3. Soft Field Takeoff
4. Open Flight Plan & Departure Procedures
5. Set Heading Procedures
6. Enroute Procedures
7. Soft Field Landing
8. Close Flight Plan
9. Review of Completed Navigation Log

**Remember – Cross-Country Survival Gear**

**Notes:**

**Aim**

The aim of this flight is to improve the student's partial panel instrument flying skills.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 24

**Flight Sequences**

1. Straight and Level Flight / Various Airspeeds
2. Climbing and Descending / Various Airspeeds
3. Rate 1 Turns / Climbing & Descending
4. Partial Panel Straight and Level – Various Airspeeds
5. Partial Panel Turns
6. Partial Panel Climbing and Descending – Various Airspeeds and Rates

**Do not log solo simulator sessions  
in your PTR or personal log book.**

**Notes: can use instrument patterns found in Appendix A**

**Lesson 7-D**  
**Dual 1.5 hours**  
**Date Completed:** \_\_\_\_\_  
**Instructor Signature:** \_\_\_\_\_

**Night Flying**

**C-172**  
**Not Mutual**  
**Night**

**Aim**

The aim of this flight is to introduce the student to night flying.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 25

**Preflight Briefing**

Night Flying Techniques and Requirements

**Flight Sequences**

1. Circuits at CYLW
2. Landing Light Failure
3. PAPI Failure

**Bring your flashlight.**

**Notes:**

**Aim**

The aim of this flight is to review flight planning, cross-country procedures, mountain flying techniques and uncontrolled aerodrome procedures.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 23  
Mountain Flying

**Preflight Briefing**

Set Heading Procedures  
Uncontrolled Aerodrome Procedures  
*NOTE:* Each student is required to do a detailed flight plan, weight & balance, and weather assessment.

**Flight Sequences**

First Student: CYLW – CAU3 – CZGF  
Second Student: CZGF – CAU3 – CYLW  
1. Flight Planning, File Flight Plan, Open Flight Plan  
2. Soft Field Takeoff  
3. Set Heading Procedures  
4. Enroute Procedures  
5. Soft Field Landing  
6. Close Flight Plan  
7. 3<sup>rd</sup> Flight G1000 checkout

**Remember – Cross-Country Survival Gear**

**\*\*\*MAKE SURE YOU RECEIVE A WEATHER BRIEFING\*\*\***

**Notes:**

### **Aim**

The aim of this flight is to review flight planning, cross-country procedures, mountain flying techniques and uncontrolled aerodrome procedures.

### **Required Reading**

Flight Training Manual  
Part 2 – Exercise 23  
Mountain Flying

### **Preflight Briefing**

Set Heading Procedures  
Uncontrolled Aerodrome Procedures  
*NOTE:* Each student is required to do a detailed flight plan, weight & balance, and weather assessment.

### **Flight Sequences**

First Student: CYLW – CAU3 – CZGF  
Second Student: CZGF – CAU3 – CYLW  
1. Flight Planning, File Flight Plan, Open Flight Plan  
2. Soft Field Takeoff  
3. Set Heading Procedures  
4. Enroute Procedures  
5. Soft Field Landing  
6. Close Flight Plan

### **Remember – Cross-Country Survival Gear**

\*\*\*MAKE SURE YOU RECEIVE A WEATHER  
BRIEFING\*\*\*

### **Notes:**

**Lesson 10-SS**                      **Partial Panel**  
**Solo 1.0 hours**  
**Date Completed:** \_\_\_\_\_  
**Student Signature:** \_\_\_\_\_

**Frasca 131**  
**Not Mutual**  
**Day**

**Aim**

The aim of this session is to improve the student's partial panel instrument flying skills.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

**Preflight Briefing**

Instrument Flying

**Flight Sequences**

1. Straight and Level Flight / Various Airspeeds
2. Climbing and Descending / Various Airspeeds
3. Rate 1 Turns / Climbing & Descending
4. Partial Panel Straight and Level – Various Airspeeds
5. Partial Panel Turns
6. Partial Panel Climbing and Descending – Various Airspeeds and Rates

**Notes:**

**Lesson 11-S**                      **Night Flying**  
**Solo 1.5 hours**  
**Date Completed:** \_\_\_\_\_  
**Student Signature:** \_\_\_\_\_

**C-172**  
**Not Mutual**  
**Night**

**Aim**

The aim of this flight is to practice basic night flying techniques including emergency procedures.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 25

**Flight Sequences**

1. Circuits at CYLW (ONLY at CYLW)
2. Landing Light Failure
3. PAPI Failure
4. Emergencies

**Bring your flashlight.**

**Notes:**



**Lesson 12-DM**      **Introduction to VOR**      **C-172S**  
**Dual 1.2 hours**      **CYLW-CZAM**      **Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Instructor Signature:** \_\_\_\_\_ **0.8 hr Hood**

### **Aim**

The aim of this lesson is to refine basic instrument flying skills, and to introduce the student to VOR navigation.

### **Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

### **Preflight Briefing**

Aircraft Documents  
VOR Introduction

### **Flight Sequences**

First Student: CYLW – CZAM

Second Student: CZAM – CYLW

1. Climbs and descending turns to predetermined altitudes and headings (Appendix A)
2. Unusual Attitudes Both Full and Partial Panel
3. Partial Panel Straight and Level – Various Airspeeds
4. Partial Panel Turns
5. Partial Panel Climbing and Descending – Various Airspeeds and Rates
6. VOR Navigation

### **Notes:**

**Aim**

The aim of this lesson is to refine basic instrument flying skills, and to practice VOR navigation.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

**Preflight Briefing**

Aircraft Documents  
VOR Navigation

**Flight Sequences**

First Student: CYLW – CZAM

Second Student: CZAM – CYLW

1. Climbing and descending turns to predetermined altitudes and headings (Appendix A)
2. Climbing and Descending – Various Airspeeds and Rates
3. Unusual Attitudes Both Full and Partial Panel
4. Partial Panel Straight and Level – Various Airspeeds
5. Partial Panel Turns
6. Partial Panel Climbing and Descending – Various Airspeeds and Rates
7. VOR Navigation

**Remember: Your partner is the safety pilot. Ensure he/she is looking outside while you are on the instruments.**

**Notes:**

**Aim**

The aim of this session is to improve the student's partial panel instrument flying skills.

**Required Reading**

Flight Training Manual  
Part 2 –Exercise 24

**Preflight Briefing**

Instrument Flying

**Flight Sequences**

1. Straight and Level Flight / Various Airspeeds
2. Climbing and Descending / Various Airspeeds
3. Rate 1 Turns / Climbing & Descending
4. Partial Panel Straight and Level – Various Airspeeds
5. Partial Panel Turns
6. Partial Panel Climbing and Descending – Various Airspeeds and Rates

**Notes:**

**Lesson 15-D**      **Night Flying-CYVK**  
**Dual 1.5 hrs**  
**Date Completed:** \_\_\_\_\_  
**Instructor Signature:** \_\_\_\_\_

**C-172**  
**Not Mutual**  
**Night**

**Aim**

The aim of this flight is to review basic night flying techniques including emergency procedures.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 25

Canada Flight Supplement – CYVK Night VFR Procedures

**Preflight Briefing**

Emergency Procedures at Night

**Flight Sequences**

1. Circuits at CYVK
2. Emergency Procedures

**Bring your flashlight.**

**Notes:**

**Aim**

The aim of this lesson is to refine basic instrument flying skills, and to introduce the student to ADF navigation.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

**Preflight Briefing**

Rate 1 Turns  
ADF Orientation, Tracking and Intercepts

**Flight Sequences**

First Student: CYLW – CYYF  
Second Student: CYYF – CYLW

1. Pattern A (Appendix A)
2. Pattern B (Appendix A)
3. Climbs and Descents
4. Climbing and Descending Turns to predetermined headings and altitudes (Appendix A)
5. ADF Orientation, Tracking, and Intercepts

**Notes:**

**Lesson 17-M**                      **ADF Navigation**                      **C-172S**  
**Solo 1.2 hours**                      **CYLW-CYYF**                      **Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Student Signature:** \_\_\_\_\_ **1.4 hrs X-C**

### **Aim**

The aim of this flight is to review flying on instruments, and to review the ADF.

### **Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

### **Flight Sequences**

First Student: CYLW – CYYF

Second Student: CYYF – CYLW

1. Straight and Level
2. Rate 1 Turns
3. Climbs and Descents
4. Climbing and Descending Turns to predetermined altitudes and headings (Appendix A)
5. Review ADF Orientation, Tracking and Intercepts

**Remember: Your partner is the safety pilot. Ensure he/she is looking outside while you are on the instruments.**

### **Notes:**

**Aim**

The aim of this session is to practice radio navigation using VOR, including basic orientation and tracking TO and FROM the station.

**Flight Sequence**

Depart YXX airport, Rwy 07, climb to 3000' ASL, heading 070°M.

1. Tune, identify and test the HUH VOR 113.0 MHz
2. Set up to track TO the VOR on the 070° Radial
3. On station passage, set up to track FROM the VOR on the 270 Radial
4. Tune, identify and test the YVR VOR 115.9 MHz
5. Track TO the VOR on 080 Radial and then intercept the 070 Radial
6. When over the YVR VOR track FROM the VOR on the 190 Radial
7. Tune, identify and test the YYJ VOR 113.7 MHz
8. Track to the VOR on the 360 Radial

If no difficulty was found with this exercise, try using a wind of 090° / 15 kts

**Notes:**

**Aim**

The aim of this flight is to practice basic night flying techniques.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 25

**Flight Sequences**

1. Circuits at CYLW (ONLY at CYLW)
2. Landing Light Failure
3. PAPI Failure
4. Emergency Procedures

**Bring your flashlight.**

**Notes:**



**Lesson 20-DM**  
**Dual 1.2 hours**  
**Date Completed:** \_\_\_\_\_  
**Instructor Signature:** \_\_\_\_\_

**GPS Navigation**  
**CYLW-CYCG**

**C-172S**  
**Mutual**  
**Day**  
**0.8 Hood**

### **Aim**

The aim of the flight is to review instrument flying skills while introducing basic uses of the Global Positioning Satellite System.

### **Preflight Briefing**

GPS Introduction

### **Flight Sequence**

First Student: CYLW – CYCG

Second Student: CYCG – CYLW

1. Flight Planning, File Flight Plan, Open Flight Plan
2. Departure Procedures
3. Set Heading Procedures
4. Enroute Procedures
5. Tracking Using the GPS
6. Using the GPS Functions 'Nearest' Airport, VOR, ADF, Waypoints, Direct

### **Notes:**

**Lesson 21-M**                      **GPS Navigation**                      **C-172S**  
**Solo 1.2 hours**                      **CYLW-CYCG**                      **Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Student Signature:** \_\_\_\_\_ **1.2 hrs X-C**

### **Aim**

The aim of the flight is to review instrument flying skills, and to practice basic navigation using the Global Positioning Satellite System.

### **Preflight Briefing**

GPS Navigation

### **Flight Sequence**

First Student: CYLW – CYCG

Second Student: CYCG – CYLW

1. Flight Planning, File Flight Plan, Open Flight Plan
2. Departure Procedures
3. Set Heading Procedures
4. Enroute Procedures
5. Tracking Using the GPS
6. Using the GPS Functions 'Nearest' Airport, VOR, ADF, Waypoints, Direct

**Remember: Your partner is the safety pilot. Ensure he/she is looking outside while you are on the instruments.**

**Notes:**

**Aim**

The aim of this session is to practice ADF navigation by tracking to various non-directional beacons.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 24

**Flight Sequences**

Starting from the Abbotsford Airport (IXX), tune, identify and test the NDB stations listed below and fly direct to each station in sequence:

1. Tune WC (332 KHz)
2. Tune VR (266 KHz)
3. Tune AP (378 KHz)
4. Tune MB (293 KHz)

For increased challenge add wind of 145° / 20kts. Now make sure to track directly to the station and do not follow a “curve of pursuit” – in other words, account for wind drift while homing to the stations.

**Notes:**

**Lesson 23-D**      **Night Cross-Country**      **C-172**  
**Dual 2.0 hours**      **CZAM – CYYF**      **Not Mutual**  
**Date Completed:** \_\_\_\_\_      **Night**  
**Instructor Signature:** \_\_\_\_\_      **2.0 hrs X-C**

### **Aim**

The aim of this flight is to learn basic night cross-country flying techniques.

### **Required Reading**

Flight Training Manual

Part 2 - Exercises 23 & 25

Canada Flight Supplement – CZAM & CYYF

### **Preflight Briefing**

Navigation

Uncontrolled Aerodrome Procedures

### **Flight Sequence**

CYLW – CZAM / CZAM – CYYF / CYYF – CYLW

1. Flight Planning, File Flight Plan, Open Flight Plan
2. Departure Procedures
3. Set Heading Procedures
4. Enroute Procedures

**Check NOTAMs to verify that the runways are open, and that all required lights are serviceable.**

**Remember your survival gear and flashlight!**

For the night rating, a total of 5 hours dual is required, including 2 hours cross-country. Ensure that this flight gives you the dual requirements.

**Notes:**

**Lesson 24-DM**      **Mid-Semester Flight Test**      **C-172**  
**Dual 1.2 hours**      **CYLW-CZAM**      **Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Instructor Signature:** \_\_\_\_\_ **0.4 Hood**  
**Student Signature:** \_\_\_\_\_ **0.4 hrs X-C**  
**Student Name:** \_\_\_\_\_  
**Mark** \_\_\_\_\_ **/76** \_\_\_\_\_ **%**

**Aim**

The aim of this flight is to check the student's progress to ensure that a strong foundation is in place before advancing to more difficult exercises. The marks from this Flight Test will contribute to the semester grade for the Flight Lab. A passing grade is required on this flight before proceeding on to Lesson 28-DM. See pages 4 & 5 for a description of the Marking Scale.

**Required Reading**

Transport Canada Flight Test Guide – Commercial Pilot License – TP 26545E  
 Plan a Trip CYLW - CZAM - CZAM - CYWL

<b>Flight Sequences</b>		<b>Marks</b>
1. Preflight - Flight Data Sheet	1 2 3 4	_____
2. Weather Assessment	1 2 3 4	_____
3. VFR Navigation Log	1 2 3 4	_____
4. Documents	1 2 3 4	_____
5. Aircraft Preflight Inspection	1 2 3 4	_____
6. Emergency Procedures	1 2 3 4	_____
7. Short Field Takeoff	1 2 3 4	_____
8. Departure Procedures	1 2 3 4	_____
9. Enroute Procedures	1 2 3 4	_____
10. Diversion	1 2 3 4	_____
11. Straight & lvl – Various Speeds	1 2 3 4	_____
12. Climb & Decent – Various	1 2 3 4	_____
13. Unusual Attitudes	1 2 3 4	_____
14. Partial Panel Timed Turns	1 2 3 4	_____
15. Partial Panel Unusual Attds	1 2 3 4	_____
16. Steep Turns	1 2 3 4	_____
17. Slow Flight	1 2 3 4	_____
18. Forced Approach	1 2 3 4	_____
19. Soft Field Landing	1 2 3 4	_____
<b>Total:</b>	_____ <b>/76</b>	_____ <b>%</b>

**Notes:**

**Aim**

The aim of this flight is to review instrument flying skills, and ADF navigation.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 24

**Flight Sequences**

CYLW – CYKA, via the B5 Airway

1. Flight Planning
2. File Flight Plan
3. Enroute Procedures
4. Straight and Level
5. Rate 1 Turns
6. Climbs and Descents
7. Climbing and Descending Turns
8. ADF Orientation, Tracking, and Intercepts

This flight can be completed without going to Kamloops

**Remember: Your partner is the safety pilot. Ensure he/she is looking outside while you are on the instruments.**

**Notes:**

**Aim**

The aim of this session is to review instrument flying skills, and to review VOR and ADF navigation.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 24

**Flight Sequences**

1. Straight and Level
2. Rate 1 Turns
3. Climbs and Descents
4. Climbing and Descending Turns
5. Review ADF & VOR Orientation, Tracking and Intercepts

**Notes:**

**Aim**

The aim of this flight is to practice basic night flying techniques including emergency procedures.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 25

**Flight Sequences**

5. Circuits at CYLW (ONLY at CYLW)

6. Landing Light Failure

7. PAPI Failure

8. Emergencies

**Bring your flashlight.**

**Notes:**



**Lesson 28-DM GPS and VOR Navigation C-172S**  
**Dual 1.2 hours CYLW-CYDC Mutual**  
**Date Completed: \_\_\_\_\_ Day**  
**Instructor Signature: \_\_\_\_\_ 0.6 hrs Hood**  
**0.4 hrs X-C**

**Aim**

The aim of this flight is to plan a cross-country trip using GPS navigation.

**Preflight Briefing:**

GPS Navigation

**Flight Sequence:**

Student 1: CYLW – CYDC (Direct)

Student 2: CYDC - Keremeos - CYYF - CYLW

1. Flight Planning
2. File Flight Plan
3. Soft Field Takeoff
4. Open Flight Plan
5. Enroute Procedures
6. VOR Intercept and Tracking
7. Soft Field Landing
8. Close Flight Plan

**Remember – Cross-Country Survival Gear**

**\*\*Make sure you receive a thorough weather briefing\*\***

**Notes:**

**Lesson 29-M**                      **GPS Navigation**                      **C-172S**  
**Solo 1.2 hours**                      **CYLW-CAD5**                      **Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Student Signature:** \_\_\_\_\_ **1.2 hrs X-C**

**Aim**

The aim of this flight is to plan a cross-country trip using GPS navigation.

**Preflight Briefing**

GPS Navigation

**Flight Sequence**

Student 1: CYLW - CAD5 (Merritt)

Student 2: CAD5 - CYLW

1. Flight Planning
2. File Flight Plan
3. Soft Field Takeoff
4. Open Flight Plan
5. Enroute Procedures
6. Soft Field Landing
7. Close Flight Plan

**Remember – Cross-Country Survival Gear**

**\*\*Make sure you receive a thorough weather briefing\*\***

**Notes:**

**Lesson 30-SS**      **Instrument Review**      **Frasca 131**  
**Solo 1.0 hours**      **Not Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Student Signature:** \_\_\_\_\_

**Aim**

The aim of this session is to review instrument flying skills, and to review ADF and VOR navigation.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

**Flight Sequences**

1. Straight and Level
2. Rate 1 Turns
3. Climbs and Descents
4. Climbing and Descending Turns
5. ADF & VOR Orientation, Tracking and Intercepts

**Notes:**

**Aim**

The aim of this session is to review and practice full and partial panel instrument flying, and to review ADF and VOR navigation.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

**Preflight Briefing**

Instrument Flying

**Flight Sequences**

1. Straight and Level Flight / Various Airspeeds
2. Climbing and Descending / Various Airspeeds
3. Rate 1 Turns / Climbing & Descending
4. Partial Panel Straight and Level – Various Airspeeds
5. Partial Panel Turns
6. Partial Panel Climbing and Descending – Various Airspeeds and Rates
7. ADF
8. VOR

**Notes:**

**Lesson 32-D Precision Approaches**  
**Dual 1.2 hours**  
**Date Completed:** \_\_\_\_\_  
**Instructor Signature:** \_\_\_\_\_

**C-172**  
**Not Mutual**  
**Day**

### **Aim**

The aim of this flight is to introduce the student to precision approaches.

### **Required Reading**

Flight Training Manual

Part 2 – Exercise 24

Transport Canada Guidance Notes for Power-Off Accuracy Approaches (Edition 1 – September 2005)

### **Preflight Briefing**

Precision Approaches

### **Flight Sequences**

1. Short Field Takeoff
2. Soft Field Takeoff
3. Precision Approach

### **Notes:**

**Lesson 33-M**      **Precision Approaches**  
**Solo 1.2 hours**  
**Date Completed:** \_\_\_\_\_  
**Student Signature:** \_\_\_\_\_

**C-172**  
**Mutual**  
**Day**

**Aim**

The aim of this flight is to practice precision approaches.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 24

Transport Canada Guidance Notes for Power-Off Accuracy Approaches (Edition 1 – September 2005)

**Preflight Briefing**

Precision Approaches

**Flight Sequences**

1. Short Field Takeoff
2. Soft Field Takeoff
3. Precision Approach

**Notes :**

**Aim**

The aim of this session is to practice radio navigation by intercepting radials to and from various VOR stations.

**Required Reading**

Flight Training Manual  
Part 2 – Air Exercises 24

**Flight Sequences** – Set up the simulator for CYVR

1. Tune, identify and test the YVR VOR/DME (115.90 MHz). Takeoff and climb to 1000' ASL, and then intercept the 070° radial FROM the station.
2. Upon reaching 23 DME from the YVR VOR, tune, identify and test the HUH VOR/DME (113.0 MHz), then track TO the station on the 345° radial.
3. Upon station passage over HUH VOR, intercept and track FROM the station on the 230° radial to the BUICK intersection (23 DME from HUH).
4. Tune, identify and test the YVR VOR/DME (115.9 MHz) and track TO the station on the 157° radial.
5. Once over YVR VOR/DME (115.9 MHz), track FROM the station on the 312° radial.
6. Upon reaching 14 DME the CYVR airport should be in sight. Land at the Vancouver International Airport.

**Notes:**

**Aim**

The aim of this flight is to review your progress in ADF and VOR navigation skills.

**Reference**

Transport Canada Flight Test Guides - Private and Commercial Pilot Licenses - Aeroplane

**Flight Sequences**

1. ADF Tuning – Tune, Identify and Test All Beacons
2. ADF Tracking – TO & FROM Beacon
3. ADF Orientation – Find Bearing TO & FROM Beacon
4. VOR - Correctly Set Up VOR Receiver
5. VOR Tracking – TO & FROM Station, Wind Correction
6. VOR Orientation
7. VOR Radial Interception
8. Maintain Scan to Commercial Limits, and Prepare for Following Legs

**Notes:**



**Lesson 36-DM**      **Instrument/Forced**      **C-172**  
**Dual 1.2 hours**      **CYLW-CZAM**      **Mutual**  
**Date Completed:** \_\_\_\_\_      **Day**  
**Instructor Signature:** \_\_\_\_\_      **0.8 Hood**

**Aim**

The aim of this flight is to review partial panel instrument procedures, and also to practice forced approaches.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 21 & 24

**Preflight Briefing**

Partial Panel

**Flight Sequences**

First Student: CYLW – CZAM

Second Student: CZAM – CYLW

1. Straight and Level Flight – Partial Panel
2. Climbing and Descending – Partial Panel
3. Timed Turns – Partial Panel
4. Forced Approach

**Notes:**

**Lesson 37-M**      **Instrument/Forced**      **C-172**  
**Solo 1.2 hours**      **CYLW-CZAM**      **Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Student Signature:** \_\_\_\_\_ **1.2 hrs X-C**

### **Aim**

The aim of this flight is to review partial panel instrument procedures, and also to practice forced approaches.

### **Required Reading**

Flight Training Manual  
Part 2 – Exercises 21 & 24

### **Preflight Briefing**

Partial Panel

### **Flight Sequences**

First Student: CYLW – CZAM

Second Student: CZAM – CYLW

1. Straight and Level Flight – Partial Panel
2. Climbing and Descending – Partial Panel
3. Timed Turns – Partial Panel
4. Forced Approaches

**Remember: Your partner is the safety pilot. Ensure he/she is looking outside while you are on the instruments.**

**Notes:**

**Aim**

The aim of this flight is to practice ADF and VOR orientation, tracking and intercepts.

**Required Reading**

Flight Training Manual

Part 2 – Exercise 24

**Flight Sequences**

Start in Abbotsford (IXX) with wind of 360/17. Use XX NDB, WC NDB and AP NDB. Set up VOR for HUH and YVR.

1. Takeoff and climb runway heading to 3,000' ASL
2. Turn right to heading of 180, intercept the 060 radial to the HUH VOR
3. After VOR passage track outbound on the 230 radial from the station
4. Once established on the 230 radial, intercept and track to the HUH VOR on the 180 radial
5. After station passage tune in XX NDB and track inbound on a track of 030
6. After crossing XX NDB, intercept and track outbound on a track of 330
7. Once established on this track, tune in WC NDB, intercept and track inbound on a track of 210
8. After crossing WC NDB, intercept and track outbound on a track of 130
9. Tune in XX NDB and track inbound on a track of 060

**Notes:**

**Aim**

The aim of this flight is to practice all types of takeoffs and landings.

**Required Reading**

Flight Training Manual

Part 2 – Exercises 16, 17 & 18

**Flight Sequences**

1. Normal Takeoffs and Landings
2. Soft Field Takeoffs and Landings
3. Short Field Takeoffs and Landings

**Notes:**

**Aim**

The aim of this flight is to practice instrument flying and to review upper air exercises.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

**Preflight Briefing**

Unusual Attitudes – Full Panel

**Flight Sequences**

1. Straight and Level Flight / Various Speeds
2. Climbing and Descending Turns / Various Speeds & Rates
3. Unusual Attitudes
4. Steep Turns – Including Minimum Radius Turns
5. Slow Flight
6. Slips
7. Precautionary Landing

**Land in Vernon to Switch Pilots**

**Notes:**

**Lesson 41-M Instrument/Upper Air Review C-172S**  
**Solo 1.2 hours Mutual**  
**Date Completed: \_\_\_\_\_ Day**  
**Student Signature: \_\_\_\_\_**

### **Aim**

The aim of this flight is to practice basic instrument flying, and review ADF & VOR navigation as well as precautionary landings.

### **Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

### **Flight Sequences**

1. Straight and Level Flight / Various Speeds
2. Climbing and Descending Turns / Various Speeds & Rates
3. ADF & VOR Review
4. Steep Turns – Including Minimum Radius Turns
5. Slow Flight
6. Slips
7. Precautionary Landing

### **Land in Vernon to Switch Pilots**

**Remember: Your partner is the safety pilot. Ensure he/she is looking outside while you are on the instruments.**

### **Notes:**

**Lesson 42-SS      ADF & VOR Review      Frasca 131**  
**Solo 1.0 hours      Not Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Student Signature:** \_\_\_\_\_

**Aim**

The aim of this session is to review instrument flying procedures, and to review ADF and VOR navigation.

**Required Reading**

Flight Training Manual  
Part 2 – Exercise 24

**Flight Sequences**

1. Straight and Level Flight
2. Rate 1 Turns
3. Climbs and Descents
4. Climbing and Descending Turns
5. ADF & VOR Orientation, Tracking and Intercepts

**Notes:**

**Lesson 43-D**                      **Upper Air Review**  
**Dual 1.2 hours**  
**Date Completed:** \_\_\_\_\_  
**Instructor Signature:** \_\_\_\_\_

**C-172**  
**Not Mutual**  
**Day**

**Aim**

The aim of this flight is to review upper air exercises, with the focus on spins and spiral dives.

**Required Reading**

Flight Training Manual  
Part 2 – Exercises 13 & 14

**Preflight Briefing**

Spin and Spiral Dive – Entry and Recovery

**Flight Sequences**

1. Steep Turns
2. Slow Flight
3. Stalls
4. Spins
5. Spiral Dives
6. Slips
7. Circuits

**Ensure airplane is in the utility category for this flight!**

**Notes:**



**Lesson 44-DM    Precautionary and Forced  
Dual 1.2 hours  
Date Completed: \_\_\_\_\_  
Instructor Signature: \_\_\_\_\_**

**C-172  
Mutual  
Day**

**Aim**

The aim of this flight is to review precautionary landings and forced approaches.

**Required Reading**

Flight Training Manual

Part 2 – Exercises 21 & 22

C-172 Pilot Operating Handbook – Emergency Procedures

**Preflight Briefing**

Precautionary Landings and Forced Approaches

Illusions Created by Drift

**Flight Sequences**

1. Forced Approaches
2. Precautionary Landings
3. Emergency Procedures
4. Illusions Created by Drift
5. CYVK – Uncontrolled Aerodrome Procedures

**Switch Pilots in Vernon**

**Notes:**

**Aim**

The aim of this flight is to review precautionary landings and forced approaches.

**Required Reading**

Flight Training Manual

Part 2 – Exercises 21 & 22

C-172 Pilot Operating Handbook – Emergency Procedures

**Preflight Briefing**

Precautionary Landings and Forced Approaches

**Flight Sequences**

1. Forced Approaches
2. Precautionary Landings
3. Emergency Procedures
4. CYVK – Uncontrolled Aerodrome Procedures

**Switch Pilots in Vernon**

**Notes:**

**Lesson 46-SS**      **ADF and VOR**  
**Solo 1.0 hours**  
**Date Completed:** \_\_\_\_\_  
**Student Signature:** \_\_\_\_\_

**Frasca 131**  
**Not Mutual**  
**Day**

**Aim**

The aim of this flight is to practice instrument flying using partial panel, and review ADF and VOR navigation.

**Required Reading**

Flight Training Manual  
Part 2 – Air Exercises 24

**Preflight Briefing**

Partial Panel  
ADF & VOR – Orientation, Tracking, and Intercepts

**Flight Sequences**

1. Straight and Level Flight – Partial Panel
2. Climbing and Descending – Partial Panel
3. Timed Turns – Partial Panel
4. VOR – Orientation, Tracking, and Intercepts
5. ADF – Orientation, Tracking, and Intercepts

**Notes:**

**Aim**

The aim of this flight is to review upper air exercises.

**Required Reading**

Flight Training Manual

Part 2 – Exercises 9, 11, 12, 15-18

**Preflight Briefing**

Transport Canada Flight Test Guide Private and Commercial Pilot Licenses

**Flight Sequences**

1. Steep Turns
2. Stalls
3. Slow Flight
4. Slips
5. Circuits

**Notes:**

**Lesson 48-D End Semester Flight Test C-172S**  
**Dual 1.2 hours Not Mutual**  
**Date Completed: \_\_\_\_\_ Day**  
**Instructor Signature: \_\_\_\_\_ 0.4 Hood**  
**Student Signature: \_\_\_\_\_ 0.4 hrs X-C**  
**Student Name: \_\_\_\_\_**  
**Mark \_\_\_\_\_/80 \_\_\_\_\_ %**

**Aim**

The aim of this flight is to assess the student's flying progress for the semester. The results of this flight test will contribute substantially to the Semester Flight Lab mark. See pages 4 & 5 for a description of the Marking Scale. Students scoring less than 60% will be required to complete additional training and take a second Flight Test.

**Required Reading**

Transport Canada Flight Test Guides - Private and Commercial Pilot Licenses  
 Plan a Trip CYLW - CZAM - CZAM - CYWL

<b>Flight Sequences</b>		<b>Marks</b>
1. Preflight - Flight Data Sheet	1 2 3 4	_____
2. Weather Assessment	1 2 3 4	_____
3. VFR Navigation Log	1 2 3 4	_____
4. Documents	1 2 3 4	_____
5. Aircraft Preflight Inspection	1 2 3 4	_____
6. Emergency Procedures	1 2 3 4	_____
7. Soft Field Takeoff	1 2 3 4	_____
8. Departure Procedures	1 2 3 4	_____
9. Enroute Procedures	1 2 3 4	_____
10. Diversion Procedures	1 2 3 4	_____
11. Inst. Straight & Level Various	1 2 3 4	_____
12. Climb & Decent Various	1 2 3 4	_____
13. Unusual Att – Full Panel	1 2 3 4	_____
14. Unusual Att – Partial Panel	1 2 3 4	_____
15. Timed Turns Partial Panel	1 2 3 4	_____
16. ADF Track To and From	1 2 3 4	_____
17. VOR Track To and From	1 2 3 4	_____
18. Stalls	1 2 3 4	_____
19. Forced Approach	1 2 3 4	_____
20. Short Field Landing	1 2 3 4	_____
Total	_____ %	_____ /80

**Notes:**

**Lesson 49-DS End Semester Simulator Test Frasca 131**  
**Dual 1.0 hours** **Not Mutual**  
**Date Completed:** \_\_\_\_\_ **Day**  
**Instructor Signature:** \_\_\_\_\_ **1.0 Sim**  
**Student Signature:** \_\_\_\_\_  
**Student Name:** \_\_\_\_\_  
**Mark** \_\_\_\_\_ **/40** \_\_\_\_\_ **%**

**Aim**

The aim of this flight is to assess the student’s flying progress in ADF and VOR navigation skills. Marks from this Progress Check will contribute to the semester grade for the Flight Lab. See pages 4 & 5 for a description of the Marking Scale. Students scoring less than 60% will be required to complete additional training and take a second Flight Test.

**Required Reading**

Transport Canada Flight Test Guide Private and Commercial Pilot Licenses

**Flight Sequences**

		Marks
1.	Tune, Identify, Test All Stations 1 2 3 4	_____
2.	ADF Tracking TO & FROM 1 2 3 4	_____
3.	Orient Find BRG TO & FROM 1 2 3 4	_____
4.	VOR Correct Setting of VOR 1 2 3 4	_____
5.	Track TO & FROM, Wind 1 2 3 4	_____
6.	Orientation 1 2 3 4	_____
7.	Intercepting Radials 1 2 3 4	_____
8.	Scan, Commercial Limits 1 2 3 4	_____
9.	ADF Theory 1 2 3 4	_____
10.	VOR Theory 1 2 3 4	_____
	Total: _____ % _____/40	

**Notes:**

**Happy Holidays**

# Appendix A

## EXERCISE 24

### Climbs, Descents and Turns to Predetermined Altitudes and Headings

- (1) DEMONSTRATION — *Climbs and Turns to Predetermined Altitudes and Headings (Climb 1,000 feet and turn 360°)*
  - (a) Change airspeed to climbing airspeed in straight and level flight.
  - (b) When the clock second hand indicates the starting time (12, 3, 6, or 9), change pitch, bank, and power simultaneously. Enter a standard rate climbing turn (3° per second and 500 feet per minute).
  - (c) Control bank as in timed turns, checking heading every 15 seconds after the first 30 seconds.
  - (d) Control pitch as in rate climbs, checking altitude every 15 seconds after the first 30 seconds.
  - (e) Consider lag in heading and altitude. Maintain lag throughout the manoeuvre.
  - (f) Roll out on correct heading and level off on correct altitude, regardless of time.
- (2) DEMONSTRATION — *Descents and Turns to Predetermined Altitudes and Headings (Descend 1,000 feet and turn 360°)*
  - (a) Change airspeed to descending airspeed in straight and level flight.
  - (b) Make a descending turn paralleling procedures outlined above for climb.
- (3) STUDENT PRACTICE  
Make climbs, descents and turns to altitudes and headings:
  - (a) With all available instruments.
  - (b) Without the heading indicator and attitude indicator.

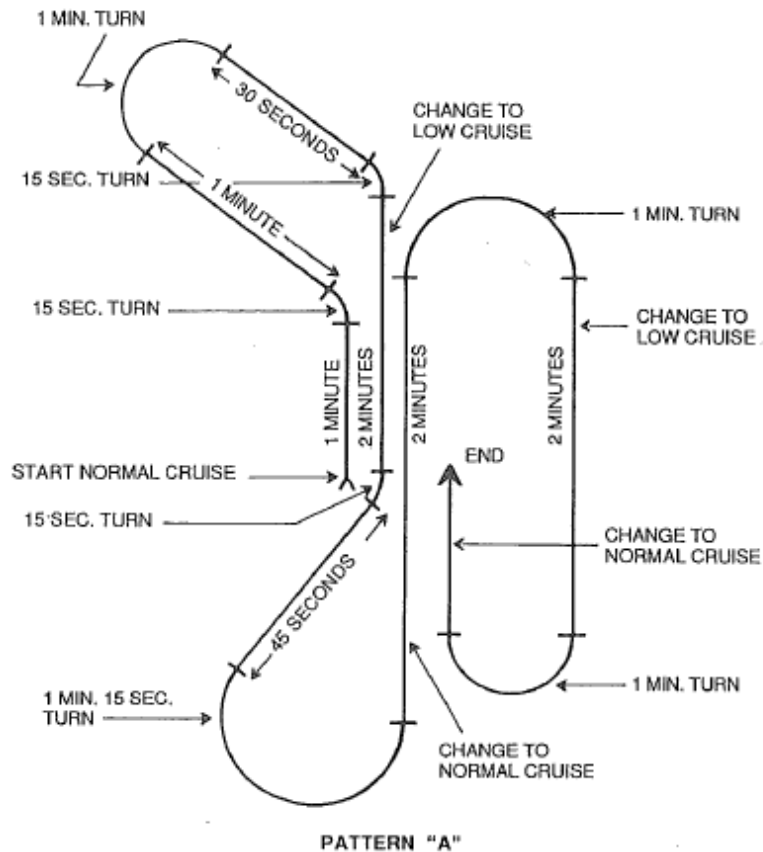
### Pattern "A"

The purpose of both Pattern "A" and Pattern "B" is to further develop the pilot's ability to control the aircraft without deliberate thought. These patterns help prepare the student for the holding patterns and procedure turns flown during radio navigation. Initial practice should be on cardinal headings for simplification; however, as proficiency increases the student should be able to accomplish the patterns on any heading. The instructor may make various changes in the patterns, or the patterns may be flown over a navigational facility, correcting for drift on each leg.



## EXERCISE 24

- (1) *Brief Student Thoroughly Prior to the Flight, and Provide Pattern "A" in a Form Suitable for Easy Reference in the Aircraft.*
- (2) *Performance of Manoeuvre in the Aircraft*
  - (a) This manoeuvre should be performed first with all available instruments, then on partial panel.
  - (b) Start Pattern "A" and demonstrate through the first three turns, then have the student continue.



## EXERCISE 24

- (c) Timing should start when the clock second hand is on a cardinal point, preferably the 12 o'clock position.
- (d) The timing for this pattern is consecutive in that the time for each leg is started when control pressure is applied to recover from the preceding turn.
- (e) After recovery from turns, allow sufficient time for the compass card to stop oscillating, then note the heading and correct if necessary. An exception is the 30-second leg. If you note an error in heading here, compensate for it by lengthening or shortening the time allotted for the next turn.
- (f) The turn needle and magnetic compass must be observed closely at all times. To correct a heading, use a timed turn (for small heading changes, use a half standard rate turn).
- (g) An efficient cross-check is required during airspeed changes so that corrections may be applied immediately.

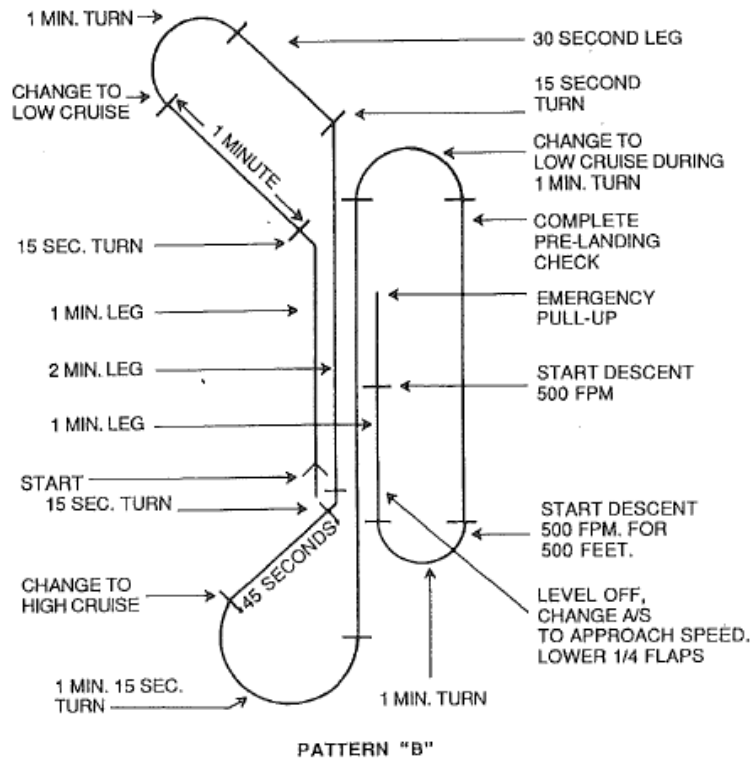
### Pattern "B"

- (1) *Brief Student Thoroughly Prior to the Flight, and Provide Pattern "B" in a Form Suitable for Easy Reference in the Aircraft.*
- (2) *Performance of Manoeuvre in the Aircraft*
  - (a) Do not demonstrate unless absolutely necessary.
  - (b) All available instruments are used.
  - (c) Roll out on headings regardless of time.
  - (d) When changing airspeed in turns, simultaneously change bank and power; also pitch if applicable.
  - (e) The descending final turn is made at a rate of 500 feet per minute.
  - (f) The final descent is made to a minimum altitude set by the instructor, or until the time expires, whichever comes first.
  - (g) The emergency pull-up is made as normal go-around procedure, climbing to the original altitude.

### Radar Approach (PAR)

- (1) *Brief Student Thoroughly Prior to Flight*
- (2) DEMONSTRATION
  - (a) Position the aircraft on a downwind leg and on interphone simulate the initial call-up, the surveillance radar controller, and the final controller.

EXERCISE 24



- (b) The student reads back all headings and altitudes given, and acknowledges all other transmissions except when instructed otherwise by the final approach controller.
- (c) Perform the pre-landing check on the downwind leg. Change airspeed to initial approach airspeed and set flaps as appropriate.
- (d) Make all heading changes in the pattern with a standard rate turn.
- (e) Turn to base leg and complete the final cockpit check.