

CHC Training Centre

Approved Check Pilot Course – Initial and Recurrent

Pre-course assignment (version 26)

There are three purposes to this pre-course assignment:

- a) to promote a common base-line of program-specific and technical knowledge;
- b) to highlight areas that may require particular emphasis during the course; and
- c) for candidates to become familiar with some of the maps and charts that will be used during the course.

You need to complete this assignment before the course starts. We will use your completed assignment during the course.

Please read these instructions carefully before completing the assignment.

If you hold a Canadian pilot licence, or are in the process of converting a licence from another country to a Canadian licence, base all your answers on Canadian regulations. On the other hand, if you do not hold a Canadian licence and are unlikely to obtain one in the near future, base all your answers on the regulations that apply in the place where you will be conducting flight tests.

Base all your answers on the type of aircraft, type of operation, and specific company for which you will be acting as a check pilot.

Make your answers as specific as possible. If there is a numerical answer, or a particular course of action for your aircraft, or your company, in the stated circumstances, state that number or course of action, not the general rule that produces the answer.

Do not guess at answers for equipment that you are not trained on (such as TCAS or GPS). Instead write “no training on.....”

If you do not have an instrument rating (either current or expired) then do not answer the IFR section. If you are not a helicopter pilot, do not answer questions about helicopters.

There are CAP plates and charts attached. They are similar to Jeppesen. For this assignment you may use Jeppesen plates instead, if you have them available. However, during the simulator portion of the course CAP charts will be used.

Make your answers brief and to the point. Please do not write essays. You could print this document and write in your answers, or you could use a computer. Either way you will need your answers in a form that can be used in the classroom during the course.

Your name: _____

Course start date: _____

Format: 2017 MAR 01

Do you hold a Canadian licence? _____

Do you have an instrument rating (either current or expired)? _____

State what your answers are based on:

National regulations (CARs or): _____

Aircraft type: _____

Category of this type for instrument procedures: _____

Company in which you will do most flight checks: _____

IFR procedures

Supplied references:

CAP CYXX airport plate

CAP CYXX Departures

CAP Abbotsford Seven Departure

CAP ILS Rwy 07

CAP CZBB RNAV RWY 30

Vancouver IFR terminal chart

Refer to the attached plates and charts. Your flight plan is CYXX 4000 feet HUH V23 YVR CZBB, with the alternate being CYVR. You are departing at around 1400 local time on a weekday.

1. What would you need to see in the CYXX TAF for it to be a valid alternate?

2. What is the minimum visibility for departure from CYXX on runway 25?

3. What is the minimum ceiling and visibility for a successful IFR return to CYXX?

4. If the ceiling is lower than this, can you still depart from CYXX. If so, under what conditions?

5. How must the aircraft be flown to ensure obstacle clearance until proceeding on course?

6. What combination of speed and climb rate would you use?

7. How far is HUH from CYXX?

8. What is the minimum sector altitude over the centre of CYXX?

9. How far east of CYXX is that altitude safe?

10. What are the MEA and MOCA on A16 between WC and AP?

11. How is the MOCA distinguished from the MEA on the chart?

12. When would you fly at the MOCA?

13. What is the nav radio frequency for YVR? When would you switch to this frequency westbound on V23?

14. If a VFR aircraft was also flying along V23 what weather minima should it observe?

15. Will ATC provide you with separation from the VFR aircraft?

16. If on V23 at 4000 feet, the TCAS told you to climb, what would you do?

17. At HUH you are cleared direct to WC for the RNAV RWY 30 approach to CZBB. What altitude can you descend to before WC?

18. After WC what altitudes, and when?

19. How would this approach differ if it was 0300 local instead of 1500 local?

20. Can you carry out a procedure turn for the RNAV RWY 30 approach?

21. What is the MDA on this approach? How is the missed approach point defined?

22. What is the highest obstacle shown on the chart?

23. What do you need to know about the runway lights?

24. Where is the FAF?

25. What minimum visibility, if any, must you have to continue on the approach beyond the FAF?

26. What combination of speed and rate of descent will you use from WC inbound?

27. The weather is very bad and you have to carry out a missed approach. Soon after turning to 139 ATC clears you to 3000 feet direct to YVR to hold West, inbound on the 260 degree radial. You turn towards YVR and see that the VOR needle is indicating 320. How do you enter the hold?

Instrument Criteria

(This section looks at instrument flight in a greater depth than is required for the line pilot. The purpose of this area of study is to give the check pilot a greater appreciation of some of the obstacle clearances and safety implications when pilots do not follow procedures. Most of this material would not be suitable for oral questions during a proficiency check.)

Supplied reference: TP 308

Make your answers brief and to the point.

1. The rules in TP308 for constructing instrument procedures supply a satisfactory level of vertical protection. What things does this assume about a) aircraft performance, b) Aircraft systems, c) NAVAIDs, d) pilot operations? (TP308 para 201)

2. What is the minimum climb gradient used in missed approach and normal departure procedure design gradient in feet per NM? If you follow that gradient for any particular straight out departure, how high will you be and what obstacle clearance will you have after 1 mile? (TP308 Vol 1 para 203, para 1200)

3. At the usual departure and missed approach speeds what rate of climb in feet per minute would produce the required climb gradient from the previous question?

4. For a turning departure, what is the minimum altitude that designer assumes you will turn at (TP308 para 1203)?

5. For an approach, how much clearance is provided in the Minimum Sector Altitude (TP308 para 221)?

6. What is optimum glide path angle on a precision instrument approach (TP308 Vol 3 para 2.5)?

7. How wide is the “no transgression zone” between parallel instrument approaches? (TP308 Vol 3 Appendix 3 para 4.3)

8. Are aircraft on the ground considered as obstacles when designing instrument approaches? (TP308 Vol 3 para 2.3)

9. What will the designer do to mitigate the presence of obstacles when designing instrument approaches? (TP308 Vol 3 para 2.4)

10. What is the obstacle clearance between the IAF and IF and what is this segment called? (TP308 para 214 fig 2-1-4)

11. What is the obstacle clearance in a procedure turn? (TP308 para 230-233)

12. What does the obstacle clearance reduce to during the intermediate segment of the approach? (TP308 para 214 fig 2-1-4)

13. What is the obstacle clearance in the final segment? (TP308 para 230-233)

14. Where does the designer consider a missed approach must be initiated? (TP308 Vol 1 para 270)

15. What is the obstacle clearance provided in the visual part of a circling approach (TP308 Vol 1 para 260)

16. What is the circling radius from the threshold for category A and category D aircraft? (TP308 Vol 1 para 260)?

17. On an LNAV approach what distance either side of course is considered for obstacle clearance at the landing threshold point (LTP)? (TP308 Vol 2 para 7.2.4)

18. What is the optimum non-precision final approach descent gradient, and the maximum (TP308 Vol 1 para 252)

19. What would be your normal approach speed in your aircraft, and what rate of descent would these gradients require?

20. How does the designer use lighting systems to reduce the visibility requirement on instrument approaches? (TP308 Vol 1 Chapter 3 Table 3-2)?

21. The actual vertical path provided by Baro-VNAV is influenced by temperature variations. What conditions would make the effective glidepath lower than normal? (TP308 Vol 2 para 7.3.1)

22. What is the primary obstacle clearance en-route in a non-mountainous area? (TP308 Vol 1 para 1720)

HELICOPTER ONLY

1. What is the premise that helicopter-only procedures are based on? (TP308 Vol 5 para 100)

2. Why is an approach to a heliport different to an approach to a runway? (TP308 Vol 2 para 8.1.3)

3. What are the two speed limitations used in helicopter-only RNAV procedures? (TP308 Vol 2 para 8.1.2b)

4. What is the optimum descent gradient in helicopter procedures, recommended maximum, and the maximum that may be authorized? What rate of descent would these give at 90 knots? (TP308 Vol 5 para 110)

AIRSPACE CLASSES

Supplied references: none

1. What is the most important operational difference between Class D and Class E airspace?

2. In what classes of airspace will ATC provide separation between VFR and IFR traffic?

3. What are your VFR weather minima at 800 feet in Class E airspace?

4. What are your VFR weather minima at 500 feet in Class G airspace?

5. What are the operational differences between Class G and Class E airspace?

6. What are your VFR weather minima at 2500 feet agl crossing an airway?

REGULATIONS

See Canadian Aviation Regulations and Standards, or appropriate regulations for other countries.

<http://www.tc.gc.ca/eng/civilaviation/opssvs/management-services-reference-centre-menu-113.htm>

<http://www.tc.gc.ca/eng/acts-regulations/regulations-sor96-433.htm>

<http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-433/FullText.html#s-401.01>

<http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-433/FullText.html#s-700.01>

CAR Standard 421.40, 46, 48, 49

CAR 401.05

CAR 703.88, 704.108, 705.106

1. What is the relationship between the CARs and the Standards?

2. Which section of the regulations covers personnel licensing?

3. In broad terms, how is this split into sub-sections?

4. What criteria must the pilot meet if you plan to issue an instrument rating should his proficiency check be successful?

5. What criteria must the pilot meet if you plan to issue a type rating should his proficiency check be successful?

6. Which section of the regulations covers commercial operations?

7. In broad terms, how is this split into sub-sections?

8. What must a pilot have in order to be qualified to conduct a commercial flight as pilot-in-command?

9. If a pilot is granted an instrument rating following a flight test completed on 15 May 2015, when will the currency expire, assuming the pilot has no further IFR flights?

10. If a pilot is granted an instrument rating following a flight test completed on 15 May 2015, and he then regularly flies IFR, when will the currency expire?

11. If a flight test cannot happen for some good reason, can the PPC validity be extended? If so, by who, and for how long?

Operational Standards

Reference: Your Company Operations Manual

This section should all be covered in your Company Operations Manual or other company manuals. Instead of writing out answers you could bring your manual, or excerpts from it, with the relevant places marked so you can refer to them quickly. You will still be expected to give a brief verbal description in class.

1. Briefly describe the system of Operational Control System in your operation. Who has the authority to decide whether a flight leaves? ([724.15 helicopter](#) or similar appropriate standard is a regulatory reference, but your Company Operations Manual should be a better place to look).
-

2. Briefly describe your company system of weight and balance (or mass and balance) control. Who is responsible? Again [724.32](#) or similar is a regulatory reference, but it should be in your Company Operations Manual.
-

3. Who calculates the performance requirements for a flight on your type of aircraft in your company? Briefly describe how this done. Again [704.44-50](#) or similar is a regulatory reference, but it should be in your Company Operations Manual.
-

4. Can you fly your type of aircraft in your company without navigation lights? How about without an anti-collision light? Please read the precise reference where a pilot would find that information, and bring a copy or excerpt to the class. Again [605](#) and [704.62-70](#) or similar is a regulatory reference, but it should be in your Company Operations Manual.
-

ACP manual

Reference available on-line:

<http://www.tc.gc.ca/eng/civilaviation/publications/tp6533-menu-1003.htm>

(ACP manual 4.1)

1. To become an approved check pilot, how many hours pilot-in-command must you have?

2. How many hours instrument time?

3. What knowledge must you demonstrate?

4. What experience?

5. What skill?

(ACP manual 6.27)

6. When briefing candidates before a check flight, what would you brief in the area of candidate error management?

(ACP manual 5.13)

7. State a good practice in the area of problem definition/diagnosis

Flight test Guide

Refer to the “Pilot Proficiency Check and Aircraft Type Rating Guide” [Helicopter or Aeroplane as appropriate]

Reference available on-line:

Helicopter: <http://www.tc.gc.ca/eng/civilaviation/publications/tp14728-menu-516.htm>

Aeroplane: <http://www.tc.gc.ca/eng/civilaviation/publications/tp14727-menu-2709.htm>

1. If the candidate was not performing well, and you saw that the problem was in situational awareness, how would you determine, in general terms, the dividing line between a 1 or a 2?

-
2. From page 14 onwards there are a series of flight test exercises (Technical Knowledge, Flight Planning, etc, etc). Some of these list specific numerical performance criteria for particular exercises. For example, in steep turns one of the criteria is “maintain the bank angle of 45 degrees within plus or minus 10 degrees..”. Go through all these exercises, pick out all the specific numerical criteria, and make a consolidated list that would be useful as an aid to briefing candidates before a check flight. Please do not just make a repetitive list for each exercise, but a summary where differences in the tolerances for various phases of flight are obvious. Use only those exercises and criteria that would apply to the flight tests that you will conduct.

The End