

### Section 13.4: North Bay to Elliot Lake Cross Country

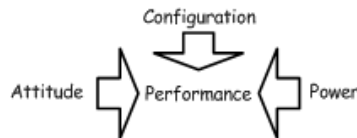
The following questions are based on a planned IFR flight in a pressurized, single engine piston aircraft from North Bay airport (CYYB N46 21 49 W79 25 22) to the Elliot Lake Municipal airport (CYEL N46 21 05 W82 33 41) via Sudbury, ON (CYSB N46 37 30 W80 47 56).

The plan is to depart at 0930Z joining V316 at the North Bay VOR (YYB 115.4) and to cruise at 16,000 feet along V316 from North Bay to Sudbury and then continue on V316 to Elliot Lake. Your planned alternate is Gore Bay (CYZE N45 53 07 W82 34 04) with direct routing at 6,000 feet.

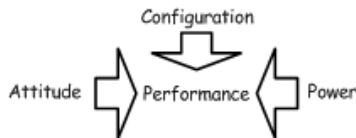
You may assume that the altimeter setting for the entire length of the flight is 29.92" Hg and that the following basic information is relevant to the flight:

FLIGHT PHASE	SPEED	FUEL CONSUMED / FUEL FLOW	WIND	TEMP
<b>START, TAXI &amp; TAKE-OFF</b>	Not applicable	2 USG	260/25 (per ATIS)	2°C
<b>CLIMB out of CYYB</b>	125 KIAS	See chart in appendix B5	Average 260/ 35 (per FD)	Not required
<b>CRUISE</b>	See chart in appendix B5 @ 65 % power	14 GPH	Average along route 270/ 66 (per FD)	-30°C (per FD)
<b>DESCENT</b>	173 KIAS	See chart in appendix B5	Average 260/20	Not required
<b>APPROACH @ CYEL</b>	110 KIAS	2 USG	260/15 (per UNICOM)	3°C
<b>MISSED APPROACH, CLIMB TO EN-ROUTE ALTITUDE OF 6,000 FEET &amp; CRUISE TO ALTERNATE</b>	Not required	8 USG	210/15	Not required
<b>APPROACH @ ALTERNATE</b>	110 KIAS	2 USG	210/12	Not required

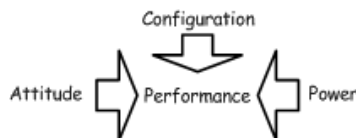
Approach plates and other supporting information for this question are contained in appendix B5.



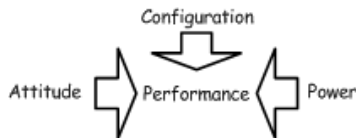
- 1) From the LO chart determine the total flight distance. NOTE: You should neglect the distance from the North Bay airport to the North Bay VOR (YYB 115.4) and the distance from the Elliot Lake NDB (YEL 276) for the approach.
  - a) 88 nm
  - b) 120 nm
  - c) 136 nm
  - d) 68 nm
  
- 2) What is the minimum flight plan altitude (MFPA) assuming you maintain this altitude for the entire cruise portion of the flight?
  - a) 3,700 feet
  - b) 4,500 feet
  - c) 4,000 feet
  - d) 6,000 feet
  
- 3) Calculate the en-route flight time. You may assume a steady climb from aerodrome elevation at North Bay followed by a steady descent from cruising altitude to the MSA 25nm at the Elliot Lake (YEL 276) beacon. Again, you should neglect the distance from the North Bay airport to the North Bay VOR (YYB 115.4) and the distance from the Elliot Lake NDB (YEL 276) for the approach.
  - a) 52 min
  - b) 62 min
  - c) 72 min
  - d) 76 min
  
- 4) Estimate the fuel burn for the flight from departure to destination and from destination to alternate in the event of a missed approach
  - a) 20 USG, 8 USG
  - b) 23 USG, 10 USG
  - c) 26 USG, 10 USG
  - d) 29 USG, 10 USG
  
- 5) Estimate the minimum fuel quantity legally required for the trip
  - a) 44 USG
  - b) 46 USG
  - c) 48 USG
  - d) 50 USG



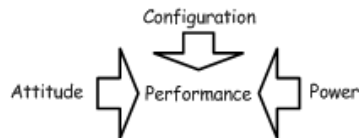
- 6) What are the minimum requirements for Gore Bay to be filed as an IFR alternate?
- 800 – 1 ½
  - 800 – 2
  - 900 – 1 ½
  - 800 – 2 ½
- 7) When departing from runway 26 at North Bay, using the North Bay One SID, then the minimum visibility for departure would be \_\_\_\_\_ and a minimum initial climb rate of approximately \_\_\_\_\_ would be required
- ½ sm, 200 fpm
  - ½ sm, 333 fpm
  - ½ sm, 417 fpm
  - ¼ sm, 200 fpm
- 8) Imagine that when approaching Sudbury, you are instructed to hold at the Sudbury VOR (YSB 112.3) in order to for ATC to resolve a traffic conflict. The holding clearance is as follows.
- "C-GWJG is cleared to hold west of the Sudbury VOR, inbound on the 269° radial, all turns left. Expect further clearance ....."*
- In order to enter the hold, a \_\_\_\_\_ entry would be most appropriate and in the absence of any further requests, you would call \_\_\_\_\_
- Direct, when first crossing over the Sudbury VOR
  - Parallel, when established over the hold – i.e. when crossing over the Sudbury VOR for the second time
  - Offset, when established over the hold – i.e. when crossing over the Sudbury VOR for the second time
  - Offset, when first crossing over the Sudbury VOR
- 9) In the hold, the length of the \_\_\_\_\_ leg is required to be \_\_\_\_\_ and a maximum speed of \_\_\_\_\_ would be allowable unless otherwise cleared
- Outbound, one minute and 30 seconds, 265 KIAS
  - Inbound, one minute and 30 seconds, 265 KIAS
  - Outbound, one minute; 175 KIAS
  - Outbound, one minute and 30 seconds, 230 KIAS
- 10) When overhead the Sudbury VOR (112.3) your DME would read approximately \_\_\_\_\_ from the Sudbury DME
- 0 nm
  - 2.5 nm
  - 3.5 nm
  - 4.5 nm



- 11) Assume that you are 65 nm back from the Elliot Lake NDB when cleared for the approach, what will be the minimum altitude restrictions from this point to the missed approach point?
- 3,100 ft; 2,800 ft; 2,300 ft; 1,700 ft
  - 4,000 ft; 3,100 ft; 2,800 ft; 2,600 ft; 1,700 ft
  - 3,500 ft; 3,100 ft; 2,800 ft; 2,600 ft; 1,700 ft
  - 4,000 ft; 3,500 ft; 2,800 ft; 1,400 ft
- 12) What will be your approximate time to the missed approach point at Elliot Lake?
- 1:48
  - 1:30
  - 1:20
  - 1:10
- 13) What rate of descent will be required when descending from the FAF at the minimum crossing altitude to the MDA before reaching the MAP?
- 700 fpm
  - 600 fpm
  - 630 fpm
  - 675 fpm
- 14) Why is this approach labeled "NDB A" and not associated with a particular runway?
- Because the final approach path is insufficiently aligned with the runway centerline
  - Because descent gradient from the final approach fix to the runway is too high for a normal descent for landing to be accomplished
  - Because this approach can also be accomplished using GPS
  - Both answers a) and b) above apply
- 15) In the event that a missed approach becomes necessary you would "Climb to 2800 track 123°. Then RIGHT turn direct to 'YEL' NDB" and in the event of no further communication from ATC, you would:
- Enter the hold at the 'YEL' NDB, holding an inbound track of 123°
  - Route directly to your filed alternate from overhead the 'YEL' NDB as this will provide you with the required obstacle clearance
  - Enter the hold at the 'YEL' NDB, holding on your inbound track
  - None of the above



- 16) Imagine now that when you are cleared for the approach at Elliot Lake. The Elliot Lake altimeter setting is unavailable but ATC does provide you with the Gore Bay altimeter setting of 29.94. Given this information, the MDA for the approach into Elliot Lake will be:
- 614 feet
  - 1,700 feet
  - 744 feet
  - 1,830 feet
- 17) Given the wind strength and direction, a landing on runway 30 at Elliot Lake would be most appropriate. If you were in a left downwind position, circling to land on runway 30 and you were to lose visual reference then your safest course of action would be to:
- Fly the approach path in reverse as closely as possible
  - Turn directly towards the missed approach path and continue with the missed approach as published
  - Maintain your circling track and descend slowly in an attempt to break out of the cloud
  - Turn towards the center of the aerodrome and follow the published missed approach as closely as possible
- 18) Imagine now that you are entering the hold at the Elliot Lake NDB at an altitude of 2,800 feet as required by the published missed approach procedure. You call entering the hold and ATC responds by clearing you to your alternate at Gore Bay. Given this clearance, you should:
- Route directly to Gore Bay from overhead the Elliot Lake beacon (YEL 276) climbing to your flight planned altitude en-route
  - Shuttle climb to 3,000 feet before routing to Gore Bay from overhead the Elliot Lake (YEL 276) beacon
  - Shuttle climb to 4,000 feet before routing to Gore Bay from overhead the Elliot lake (YEL 276) beacon
  - Shuttle climb to 6,000 feet before routing to Gore Bay from overhead the Elliot Lake (YEL 276) beacon
- 19) What is the minimum IFR altitude for the flight segment from Elliot Lake to Gore Bay and what is it based on?
- 3,000 feet as indicated by the MSA 25 nm on the Elliot Lake NDB A approach plate
  - 4,500 feet decreasing to 4,100 feet as indicated by the relevant area minimum altitudes
  - 2,800 feet as indicated by the routing to the Gore Bay NDB (YZE 245) on the Elliot Lake NDB A approach plate
  - 6,000 feet as dictated by the area minimum altitude and the correct altitude for your direction of flight



- 20) When outbound from Elliot Lake to Gore Bay, your RMI would indicate \_\_\_\_\_ if the ADF was tuned to the Elliot Lake NDB (276)
- 188°
  - 359°
  - 008°
  - 179°
- 21) En-route to Gore Bay, ATC advises you that the ceiling at Gore Bay is now 700 feet with a visibility of 2 ½ statute miles. Under these circumstances\_\_\_\_\_
- You should continue to Gore Bay and fly the approach
  - You should reroute for an alternate which is above alternate minimums
  - You should return to North Bay for landing
  - You may attempt the approach but may not continue beyond the final approach fix if the weather remains below minimums
- 22) What are the hazards associated with descending below the MEA in a situation where the minimum IFR altitude is below the MEA?
- Descending below the MEA is a violation of the CARs and you will be subject to enforcement action by Transport Canada
  - There is a potential for loss of communications and navaid reception. This means that you may stray out of the protected area and may lose obstacle clearance.
  - There are no extra hazards associated with descending to the minimum IFR altitude since it is permitted by the rules
  - You will lose all obstacle clearance provided by the MEA and might hit an obstacle

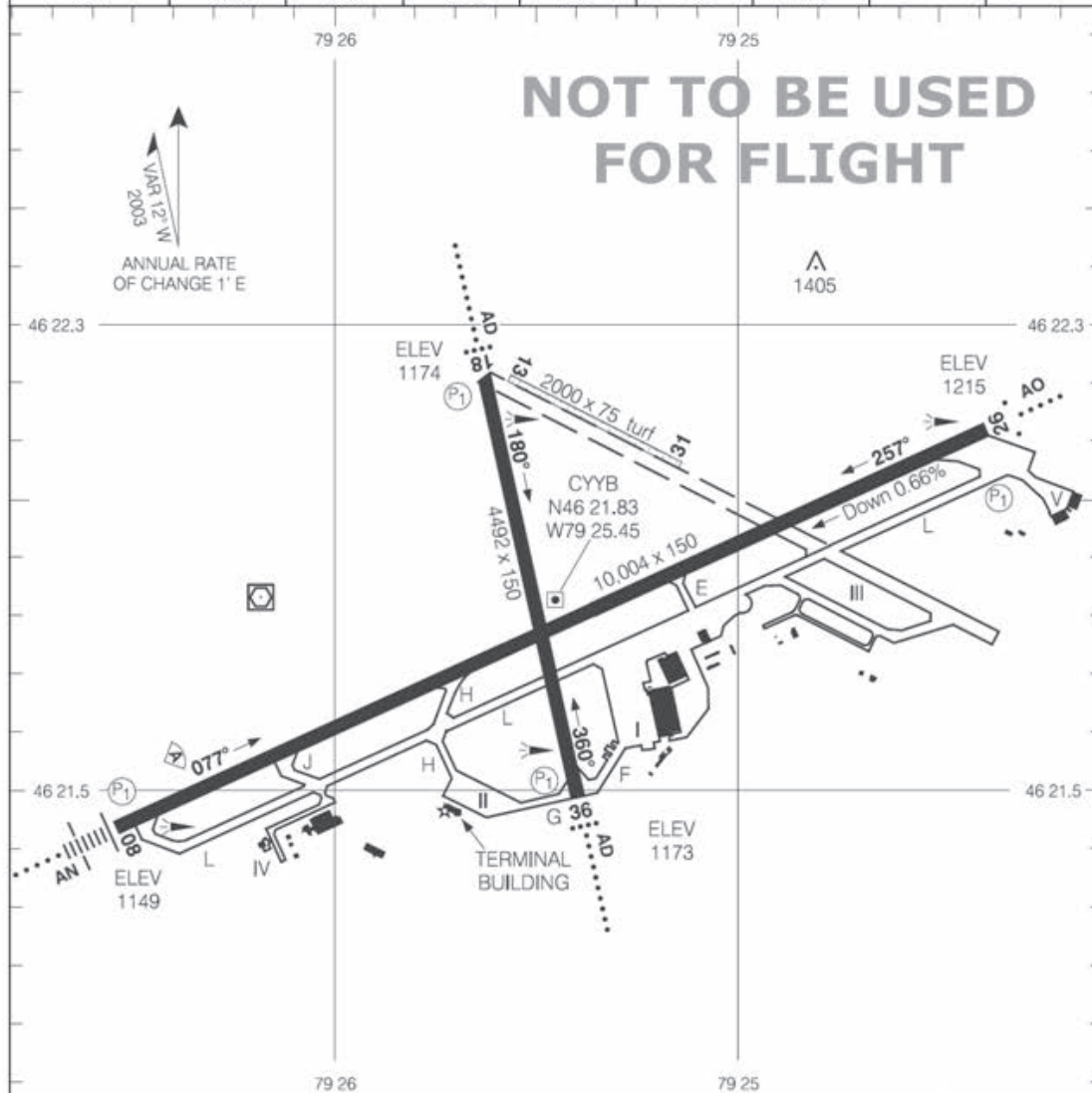


INTENTIONALLY LEFT BLANK

AERODROME CHART

NORTH BAY, ON  
CYYB

ATIS - 124.9 AWOS - 124.9		RADIO - 118.3 TFC - 118.3					CTR Toronto - 127.25	
DECL DIST	08	26	13	31	18	36		
TORA	10004	10004	2000	2000	4492	4492		
TODA	10988	10988	2000	2000	5476	5476		
ASDA	10004	10004	2000	2000	4492	4492		
LDA	10004	10004	2000	2000	4492	4492		



Source of Canadian Civil Aeronautical Data: © 2015 NAV CANADA All rights reserved

RUNWAY LEVEL OF SERVICE	
RVO	LVO
RWY 08: RVR 1200 RWY 26: (1/2 sm)	NOT AUTHORIZED
TAKE-OFF MINIMA	
Rwys 08, 18, 26, 36: 1/2 Rwys 13, 31: NOT ASSESSED	



AERODROME CHART  
EFF 13 NOV 14

CYYB

USED WITH PERMISSION OF NAV CANADA

INTENTIONALLY LEFT BLANK

SID (VECTOR)  
**NORTH BAY ONE DEP** (CYYB1.)

NORTH BAY, ON  
 CYYB

### Departure Route Description

Unless otherwise assigned by ATC

- Rwy 08:** Climb on heading **077°** or as assigned for radar vectors to filed/assigned route. Maintain **4000'** ASL.
- Rwy 18:** Climb on heading **180°** or as assigned for radar vectors to filed/assigned route. Maintain **4000'** ASL.
- Rwy 26:** Climb on heading **257°** or as assigned for radar vectors to filed/assigned route. Maintain **4000'** ASL.
- Rwy 36:** Climb on heading **360°** or as assigned for radar vectors to filed/assigned route. Maintain **4000'** ASL.

---

### Communications Failure

On recognition of communication failure 10 minutes or less after take-off and IFR weather conditions, proceed as follows:

1. Select transponder code 7600;
2. 5 minutes after selecting 7600 proceed directly on course and climb to flight planned altitude.

**NOTE:** If communications failure occurs more than 10 minutes after take-off, comply with appropriate procedures for Communications Failure en-route.

**NOT TO BE USED  
 FOR FLIGHT**

Source of Canadian Civil Aeronautical Data: © 2015 NAV CANADA All rights reserved

**NORTH BAY ONE DEP** (CYYB1.)

CYYB

EFF 24 JUL 14

USED WITH PERMISSION OF NAV CANADA

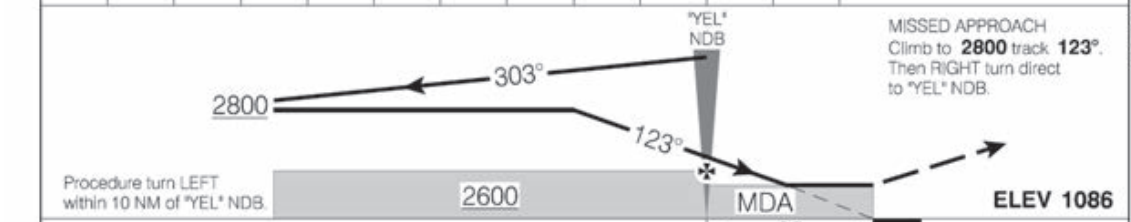
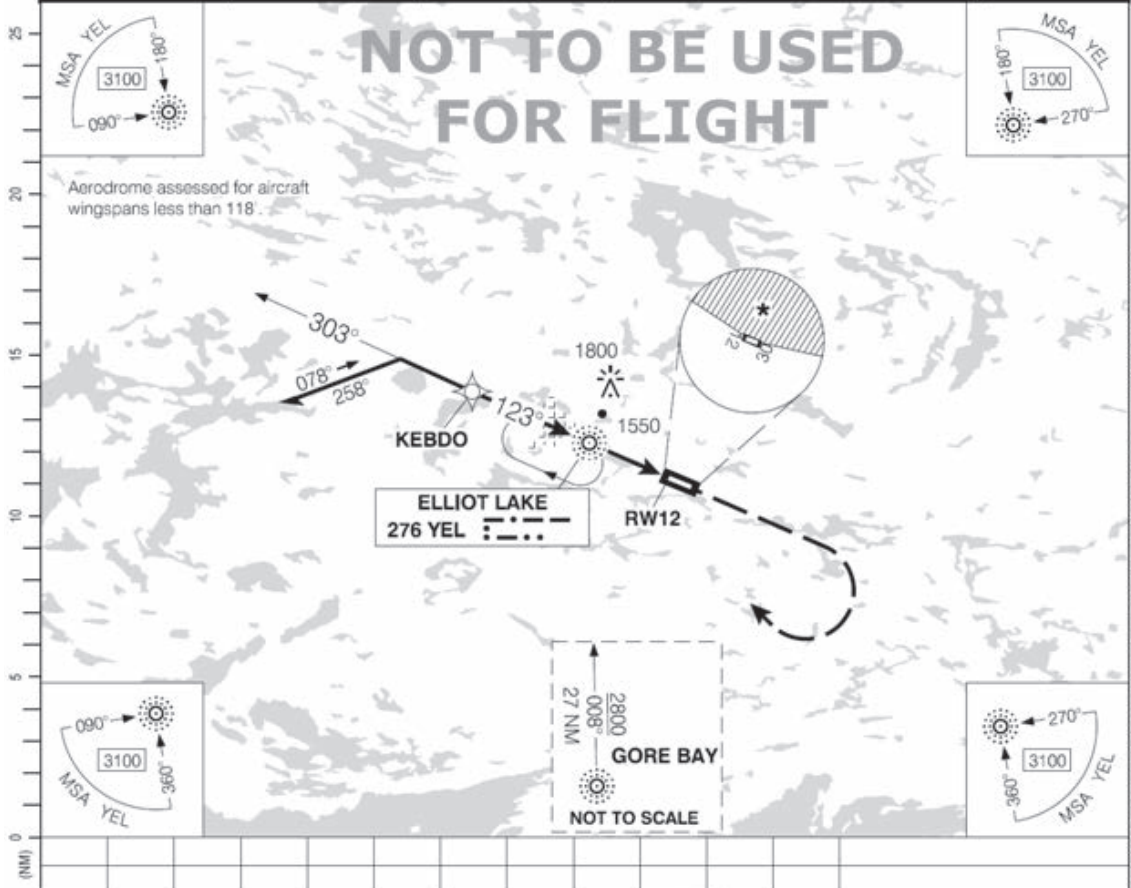
INTENTIONALLY LEFT BLANK



INTENTIONALLY LEFT BLANK

NDB A (GNSS) ELLIOT LAKE MUNICIPALITY, ON  
CYEL  
462106N 0823340W VAR 9°W

	CTR Toronto - 135.4	UNICOM - 123.0 (AU)	ARCAL 123.0(K)*
		<b>ATF</b>	LIGHTING: REFER TO AD CHART
SAFE ALT 100 NM <b>3500</b>	NDB YEL <b>276</b>	APCH CRS <b>123°</b>	MIN ALT YEL <b>2600</b>
			LDA REFER TO AD CHART



RASS: When using CYZE add 130'.	CATEGORY	A	B	C	D
	CIRCLING	*	1700	(614)	2
*YEL* NDB to MAP 2.7 NM					
	Knots	ft/min	Min:Sec		
	70		2:19		
	90		1:48		
	110		1:28		
	130		1:15		
	150		1:05		

NDB A (GNSS) CYEL  
EFF 20 AUG 15

USED WITH PERMISSION OF NAV CANADA

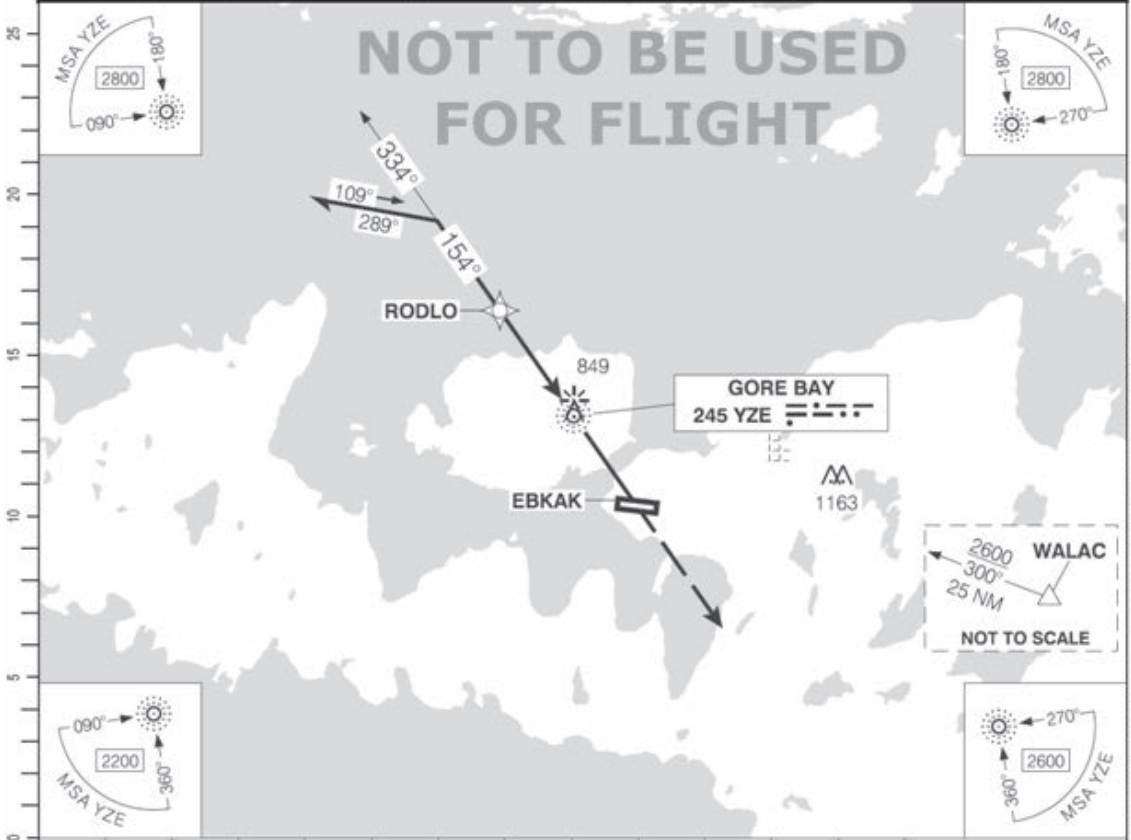
Source of Canadian Civil Aeronautical Data: © 2015 NAV CANADA All rights reserved

INTENTIONALLY LEFT BLANK

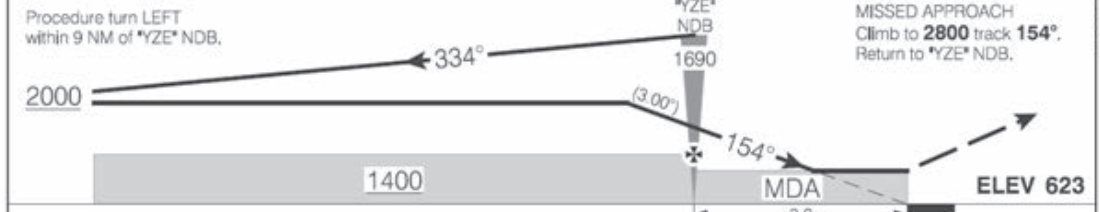
**NDB A (GNSS)**

GORE BAY-MANITOULIN, ON  
CYZE  
455303N 0823406W VAR 9°W

AWOS - 128.72	CTR Toronto - 135.4	UNICOM - 122.8		ARCAL 122.8(K)
SAFE ALT 100 NM <b>3500</b>		NDB YZE <b>245</b>	APCH CRS <b>154°</b>	MIN ALT YZE <b>1400</b>
		ATF		LDA REFER TO AD CHART
LIGHTING: REFER TO AD CHART				



	12.2	11	10	9	8	7	6	5	4.2	3	2	1.4	DIST FROM EBKAK
	4560	4180	3860	3540	3220	2900	2580	2270	<b>2000</b>	1630	1310	1120	ALT (3.00° APCH PATH)



CATEGORY	A		B		C		D	
	CIRCLING							
	<b>1120</b>	(507)	1½		<b>1220</b>	(607)	2	

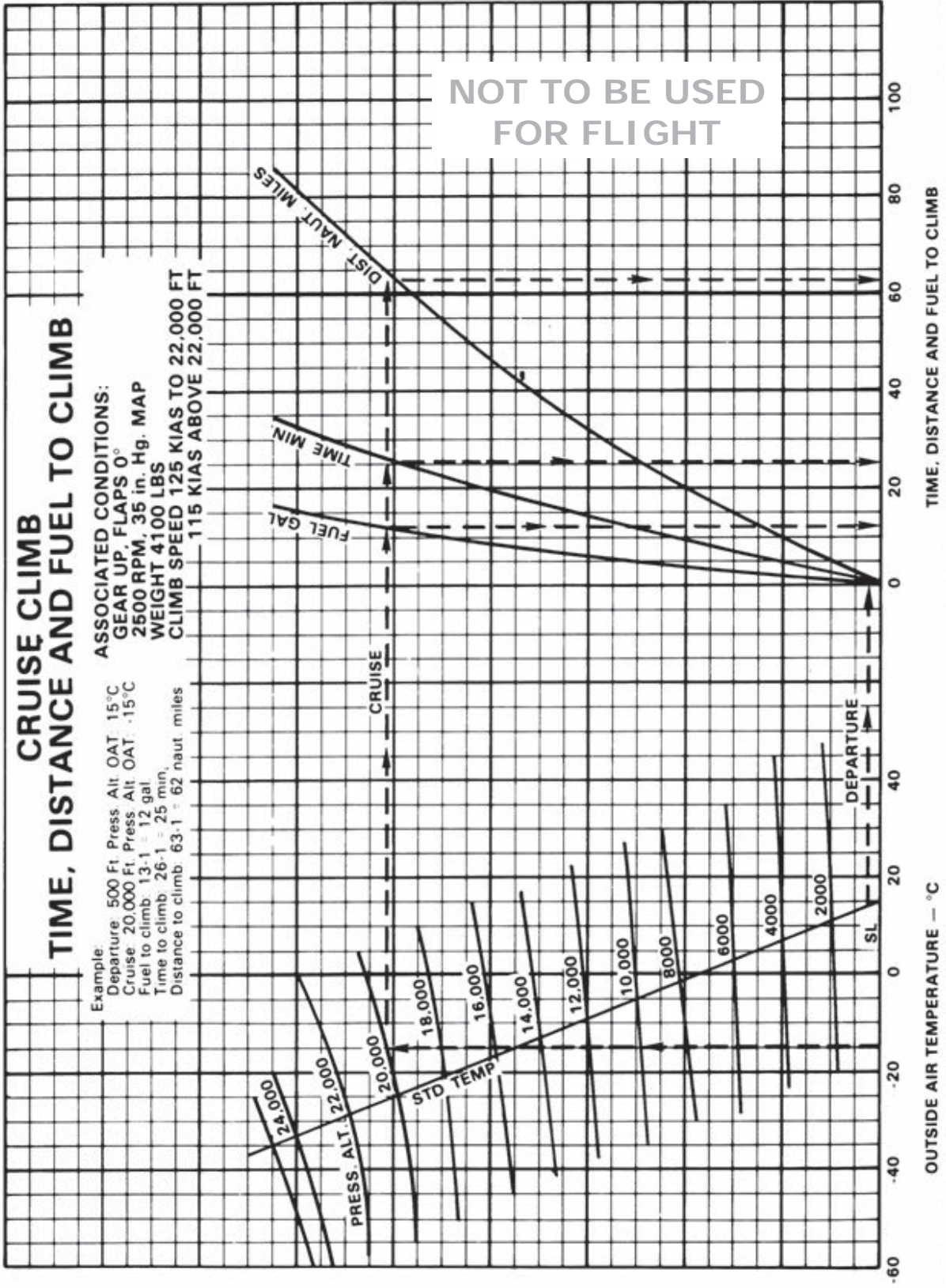
*YZE* NDB to MAP 3.2 NM		
Knots	ft/min	Min:Sec
70	370	2:44
90	480	2:08
110	580	1:45
130	690	1:29
150	800	1:17

**NDB A (GNSS)**  
EFF 24 JUL 14

CYZE

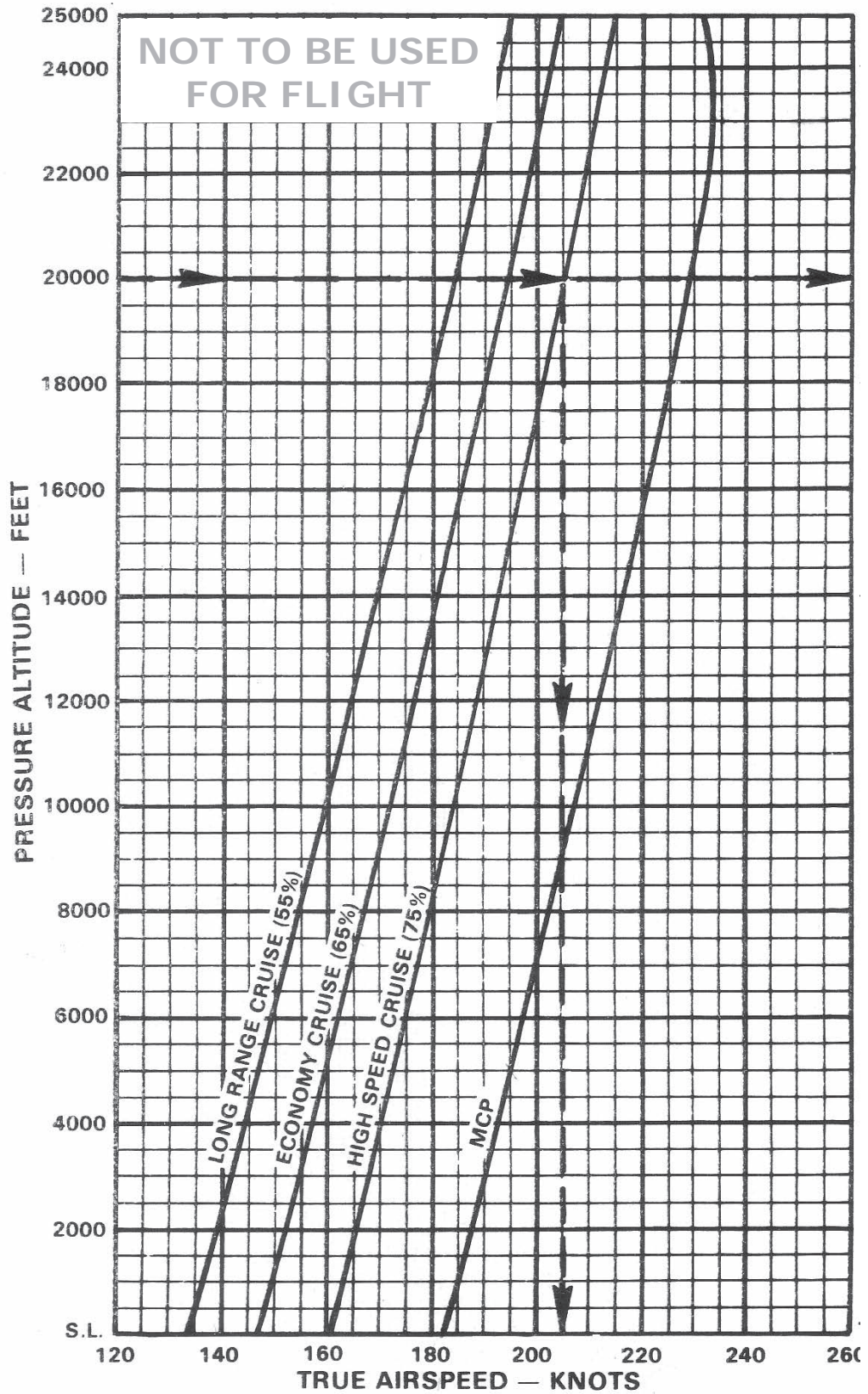
USED WITH PERMISSION OF NAV CANADA

INTENTIONALLY LEFT BLANK



INTENTIONALLY LEFT BLANK

# CRUISE SPEED VS. ALTITUDE



INTENTIONALLY LEFT BLANK



INTENTIONALLY LEFT BLANK

Section 13.4: North Bay to Elliot Lake

Question Number	Answer
1	c
2	c
3	b
4	b
5	a
6	d
7	b
8	d
9	b
10	b
11	c

Question Number	Answer
12	c
13	d
14	b
15	a
16	d
17	d
18	a
19	c
20	c
21	a
22	b