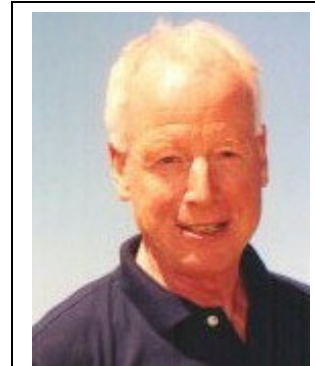


Canadian cargo flights in BC

Here's a round-robin of Canadian cargo flights---they are not 'proper' cargo flights, more of an excuse to tour BC, but great fun I think you'll agree. I've included a running commentary of my own experience flying each sector (flown in Aug-Sep 2009).

I've tried to make it all as realistic as possible; you'll need to do some flight planning as well and get your weather & winds, calculate fuel loads and V-speeds and get clearances (where appropriate) before each departure. It's mixed IFR and VFR flying. In summer it should be straightforward, but as winter sets in it'll get progressively more difficult, and there are some airfields you simply won't be able to get into.



The author (MTN1862) is a retired commercial pilot

MTN Air types can start in Ketchikan, or else in Sandspit if you prefer staying in Canada. (I'll do the former but prefer the latter.) You'll first fly westbound to Prince George with 3-4 intermediate stops. After Prince George (CYXS) there are three loops available to get yourself back home: one to the north and two (south short & south long) to the south. All loops get more difficult as you proceed. Distances are shown below, as is fuelling (F, NF) and no runway lights (NL). I fly the PMDG Beech 1900 and find it ideal (you may prefer another A/C). The runways are generally long enough for the B1900, but some of the unpublished approaches are tricky; eg, CZST (Stewart) where, if there's cloud & mist in the river valley, you'll have to divert. Load enough fuel to get you there plus to your alternate with $\frac{3}{4}$ hr's reserve. Or again, if you get caught out with daylight turning to dusk, you're going to want to refile IFR and proceed to a larger airport, so you'll need to think about weather, route planning and alternates. Allow for half-hour stopovers or more at each airport; time to rest, load, unload and get your next wx briefing, or even to file. (I've shown all flights in local time (L) rather than Zulu.) One or two legs are low-level VFR (eg, Smithers-Woodcock at 3500 ft or less); others are strictly IFR assuming there's any sig weather.

1. Ketchikan PAKT F
2. Sandspit CYZP F 133nm
3. Prince Rupert CYPR F 80nm
4. Terrace CYXT F 79nm
5. Burns Lake CYPZ F (NL) 125nm
6. Prince George CYXS F 140nm

northerly loop

7. Vanderhoof CAU4 F (NL) 50nm VFR
8. Smithers CYYD F 125nm A035
9. Woodcock CBQ8 (NL, NF) 50nm A035 VFR only
10. Stewart CZST (NL, NF) 90nm A125
11. Ketchikan PAKT 70nm (A110); in wx route low-level to CYPR, then to CYZP

southerly loop short

7. Williams Lake CYWL 115nm F
8. Puntzi Mountain CYPV 78nm NF, NL, VFR only
9. Bella Coola CYBD 97nm NL, VFR only
10. Bella Bella CBBC 75nm F, NL
11. Sandspit CYZP 165NM F

southerly loop long

7. Williams Lake CYWL 115nm F
8. Kamloops (CYKA) 90nm F
9. Victoria (CYYJ) 180nm F
10. Port Hardy (CYZT) 200nm F
11. Bella Bella (CBBC) 96nm F, NL
12. Sandspit (CYZP) 152nm F

You'll find Canadian wx on <http://www.flightplanning.navcanada.ca>; this includes TAF/METARs, upper winds, FZLs, NOTAMS and so on. (NavCanada's range of products has grown impressively since I last flew there!). IFR approach plates are found on <http://www.ivao.ca/charts/cap.html>. For lots of good tips on flying the B19D, see <Beech 1900 Basic Procedures/Limitations/Airspeeds for Ontop>. BTW, there are several good checklists for the B19D. I use Talon Air's simplified one with some modifications taken from Mike Stone's excellent effort—you can easily google both.

I. The Northerly Loop

This takes us in 6 sectors westward to Prince George on the prairie

1. PAKT-CYZP (Sandspit): dep0630L/arr0730

- flight planning: I file IFR at F110 (below FZL) routing DCT RALFY DCT ICK V307 ZP DCT; this is not quite the same as the CETK3.ANN SID, so best to make it clear on the FAA flight plan.
- WX: the TAF for CYZP is not looking great this morning; eg, within hour of ETA (26005KT 9SM FEW057 OVC067 OVC095 14/11 A2980). That's well within limits, but in this part of the world it's sensible always to specify an alternate, in this case CYPR. Fuel required is 650 lbs to get there and 650 reserve, or 1300lbs (650 lbs per tank). Canada is metric, but for present purposes I'll stick to imperial measurements (as found on FS9). Looks like I'll be landing on R-30 with an xwind component. FZL is at F120, with F100 later.
- Empty weight is 10.5K (lbs); my payload is 2K (lbs) & fuel is 1.3K, so gross is nearly 15K, well under the allowable 17k. On an ISA day, that calls for V speeds of V1=100, VR=100 and V2=107 according to the PMGD POH. (In reality, W&B checks would also be done.) I'll be looking for torque and RPM settings to keep EGT at or below 800C initially, gradually coming back to 715C or less. That means gradually reducing Torque in the climb to 70% and RPM to 1700 looking to climb at

about 150kts. Cruise for a TAS of around 200kt requires 50% torque and 1500 RPM (the company is very sensitive about fuel costs).

- At least it's dawn and not raining outside; in winter it will be very dark and very cold. A start-the-day inspection, then inside to get a clearance to destination, crank up, switch on the packs, get my taxi clearance, start up and taxi. This morning R-11 is the active.
- At 500 AGL, I switch on the A/P using the GPS. The flight goes uneventfully at F110 just above the tops. Sadly, the PMDG simulation of this A/C has no OAT gauge, no pressurisation, no fuel pumps; ie, it's pretty basic. The lack of an OAT gauge is serious since in the real world it's important to keep tabs on the lapse rate and FZL, particularly if (in an inversion) there can be multiple FZLs. It's also a pity PMDG didn't include a non-handling pilot's voice to call out checks and altitudes---so it's all single crew ops (not approved for the real thing).
- It gets murky at 40nm out and ATC advises ILS R-12 in use. Descending and nearing ZP, using the heading bug now, I go outbound, do the procedure turn and let the A/P capture the localiser. I speak to traffic or tower once established, using flaps 1 to slow me down on the localiser. As the G/S comes in, the gear goes down at one dot above the G/S. Once established at 140kts, at 1000' AGL I go to flaps 2 and gradually ease back to just above blue-line speed. At 500' I switch off the A/P and hand fly the rest (assuming the runway is in sight). The ILS for R-12 at CYZP is more like an LDA, so a bit of manoeuvring is required to plant it on the runway, particularly in a stiff xwind. Flight time is exactly 1 hour and measured fuel burn is 612 pph.

2. CYZP-CYPR (Prince Rupert) dep0800L/arr0840: easy in good wx or bad

- For simplicity, we assume a 2000 lb payload throughout (we unload and load the same amount). The TAF for CYPR is 17005KT P6SM -SHRA SCT005 OVC020 TEMPO 2SM -SHRA BR BKN004, so although there's a precision approach, once again it's iffy and I plan for an alternate (back to CYZP is closest). Since it is only 75nm (150nm in all) and the B1900D fuel burn used for calculation is 650 pph, I top up to 1300 lbs total. GTOW is just under 15K (see V-speeds above). The IFR routing is DCT ZP R4 PR DCT at A090.
- The wind has gone calm at CYZP and 12 is the preferred runway, and it's the same clearance and startup procedure as for the previous sector. Takeoff is towards 'ZP' NDB and the A/P is engaged at 500ft as per company policy.
- A090 is just a bit low and with ground level temp at 21C, there could be ice (but no way of knowing without an OAT gauge). 40 nm out from CYVR, ATC clears us down to A055 and eventually vectors us onto the ILS for R-13. As we become localiser established it starts to rain, but the runway is in sight about 5nm out, I take the A/P out, dump full flap and gently reduce to just above blue line speed, then back to 100 kts passing the threshold. We settle on happily and head for the ramp.
- Flight time 40 minutes and burn = 407 lbs (611 pph). A very straightforward and satisfying IFR flight.

3. CYPR-CYXT (Terrace) dep 0900L/arr 0935L: a real test of instrument skills

- The TAF for CYXT is VRB03KT P6SM -RA FEW004 SCT015 OVC050 TEMPO 2507/2513 3SM -SHRA BR SCT006 BKN015 OVC040 PROB30

2510/2513 2SM -RA BR BKN004, so like the previous sector it's iffy and I plan for an alternate (back to CYPR is closest). Since it's only about 90nm (180nm in all) and the fuel burn is about 650 pph, I top up to 1500 lbs total—it's a long climb and descent. GTOW rounds to 15K. The IFR routing is DCT PR R35 ZKI DCT at A130 (the SSA is A111!).

- The wind is 140/07 in light rain at YPR and R-13 is active; it's the same clearance and startup procedure as for the previous sector. Takeoff is towards 'PR' NDB and I'll engage the A/P at 500ft. FZL---it's bound to be in the critical 0-MIN20 range at F130. So anti-ice goes on before T/O (there's a modelling problem here; see below).
- At 40nm from ZKI and at A130 on an IFR plan to Terrace, Vancouver CTR wants to vector me for a visual onto R-15. Given the wx up here (and the forecast down there) it's not a clearance I can accept---nor does FS9 give me any other choice! In fact, a quick check using the 'map' button on the panel shows that CYXT has no ILS-33 (unlike the Canada Air Pilot), so I plan for an NDB approach to R-33 circling for R-15.
- 10nm out from ZKI, I start the descent to the Kitimat NDB (SSA is 8300'), then turn outbound for 1 minute and do the right-hand procedure turn indicated to get me back inbound crossing the beacon at 4200'. One beacon inbound, I tune and ident the XT NDB and continue down to 3200'. Passing the XT, I can see the runway, so I go down to circuit height (1800'), turn base over the river and get it smoothly onto R15. It's raining and there's wispy cloud. Thankfully I'm flying a sim---it's not an approach I would want to do for the first time in real life!
- Fuel burn is about 400 lbs, or 667 pph---slightly above my calculations, but leaving me plenty of fuel to get back to Prince Rupert had it been necessary. Phew... a short flight, but it was a testing instrument approach. Only 25 minutes to get things sorted before the next leg.

4. CYXT-CYPZ (Burns Lake) 1000L/1050L no wx, no lighting, no plates

- NavCanada doesn't do a TAF of METAR for Burns Lake (CYPZ), but a Canadian internet sight does laymen's wx (winds light, possible scattered showers, 18C). It's 125 nm, and my alternate (a further 140nm) will be Prince George (CYXS) where the wx is forecast as 04004KT P6SM FEW060 SCT120. YXS has good instrument approaches in any case. YPZ has fuel, but note that if it were dusk or night, I'd have to skip this sector altogether since the airfield is unlit.
- The routing will be DCT ZKI V368 YYD DCT at A130. Estimated fuel required is 500lbs to destination, then 600 to the alternate and 600 reserve or 1700lbs in total.
- Walking around at 0955L, the rain has abated but there's still wispy cloud around. We do the checks, get a clearance and we start up (don't forget to check feathering at an appropriate time and place) without incident, and are soon at the threshold of R-15 ready to go. You'll need the approach plate to hand for a departure to XT, then ZKI. The V-speeds are established and climb will be at 80% torque and 1550RPM, giving about 150kts and 2000 fpm initially. Cruise climb will be at 70% torque aiming for 1500fpm and 160kts.
- At 500' the A/P goes in and I concentrate on getting the target climb rate, speed and temps down pat. I level at A130 just 5nm before the ZKI; good job too 'cos a bit of speed is needed for the LH turn onto V368, a 100 degree change of heading. It's

scattered cloud up here and the mountains are high and rugged. Not a place to lose one of the donkeys, even if the aircraft's a turboprop with a good single engine ceiling (to be noted if flying a Baron or similar).

- With at IAS of 170, the TAS is just above 200 and we've got a tailwind component. So I leave torque at 50%.
- Checking the GPS, YPZ has a GPS approach to R-29 via DESNO, about 25nm from the YYD VOR, so I'll plan TOD at YYD. The elevations on the chart tell me I can descend to 6000' by DESNO; R-29 is at roughly 2300. IF YPZ is on the opposite runway, I'll circle. About 35nm out from YYD, Vancouver CTR clears me direct DESNO for the GPS approach to R-29. At 25 nm from Desno I'm about to ask for descent when CTR clears me down to 7000.' The landscape is flatter and softer now and the visibility fairly good, but there could be cloud and mist in those valleys below.
- Aim to cross DESNO at 7.0, then URLAS (10nm on) at 5.0. I now have 2700' ft to lose over a 10nm approach, a piece of cake. But the 5000' hard runway is narrow and there are no visual aids, so a good visual approach is essential. Unless the runway is in sight 5nm miles, one should go around and be prepared to divert if need be. This is definitely not a non-precision IFR approach.
- I come in a bit fast and use up 4000'. A narrow runway tends to make you think you're higher than you are, and so misjudge speed on the last half mile unless you're aware of the illusion, so an eagle eye on airspeed is needed (yes, visual illusion happens even in a sim!). We're on at 1050, and the tanks, so the burn is 520 lbs (624 pph).

5. CYPZ-CYXS (Prince George): 11:05L/12:00 Beware of towering CU over the prairie

- The TAF at YXS is VRB03KT P6SM FEW120 BECMG 35006KT and the 'becoming' time frame looks like ours, so we can plan for the northerly runway. The MEA for V301 is 7.5, the upper winds are not strong and the FZL is just above 9.0, so I'll file for A090; that's low for a turboprop but if necessary I can ask for higher. Anyway, the 'anti-ice' should be 'de-ice' since in fact it's boots which use a lot of power and are only useful when there's significant ice accrual on the leading edges. The routing is DCT OTASI V310 DCT
- Filing (by mobile these days) and getting loaded doesn't take long, so turnaround can be quick (and there's nothing much here). No need to fuel; there's 1180 lbs left, more than enough for destination + 45min, and this time no alternate is required. Conditions are virtually windless, so I'll elect R-11 and save a few miles; a straight out climb and a slight jink left will put me in the airway. The V-speeds are unchanged.
- The climb is uneventful and I contact Vancouver CTR without problem (in reality, radio coverage in western Canada can be a problem). In the middle of the airway at A090 is a large CB; in the real world you'd ask CTR for 30deg right or left to avoid, but FS9 ATC doesn't have that facility---so I deviate without asking. The PMDG B1900 has no radar or storm scope, and even if it had, you definitely don't want to

mess with towering CB if you can avoid it. Nothing else offensive to be seen on the horizon so we'll continue at low level.

- About 40nm out, I receive descent clearance and vectors for the ILS R-15 (unfortunately, there's no published ATIS or AWOS freq so you would have to get it on frequency---but that's not an option. I leave it on the A/P until we intercept the localiser, call TWR and take out the AP to get some practice hand flying the ILS (every third ILS should be hand-flown is a general rule of company policy). ILS-15 is a bit tricky 'cos you come in over the river and the airport is on a plateau. You can expect eddies and low-level chop crossing the river, but today it's calm (or perhaps FS9 just isn't that sophisticated). It's been a 45' flight and fuel burn is 473lbs (631 pph). Fuel saving is important in cargo ops.
- Now for lunch and relaxation. Departure on the next leg is filed for 1355L.

6. CYXS-CAU4 (Vanderhoof): 13:55L/ a short VFR hop to an unlit runway, but at least it's surfaced.

- This will be a VFR sector; it's only 40nm and the airfield is small with no published approach. In bad weather or at night, you'd skip it. (It's a good idea to file 5 min before your intended T/O time; otherwise, ATC might not clear you to start and taxi (or in Canada I believe you don't need startup clearance---would but I could check with ATC!)
- I load 350 lbs of fuel (½ hour) to get there; another 350 should I need to return (YYX is my alternate) and 700 reserve, which altogether totals 1400 lbs. The routing is DCT XIGUP DCT at A065. Again there's no NavCanada weather available, but a quick look at the internet suggests it's benign. BTW, Vanderhoof in Dutch means 'at/of the head' just in case you were wondering.
- The routing is VFR at A065, DCT XIGUP DCT IKMUS DCT. The visibility is good all the way and, with the airport at 2230 AGL, I leave 5 nm for finals onto R-25 and start my letdown 20nm out, dropping gear and flaps 1 at 10nm. At 1000 AGL it's full flaps. It's a narrow and short runway so good speed control is essential, keeping it at blue line speed until a landing is assured and then coming back on the power. There are trees at the R-25 end which makes the final approach a bit high, but otherwise it's a piece of cake (as long as the vis is good; otherwise, forget it!).

7. CAU4-CYYD (Smithers); 1445L/1530 another challenging mountainous instrument approach

- I load and unload quickly. The TAF for Smithers is VRB03KT P6SM OVC120 BECMG 2719/2721 14006KT so no need for an alternate. The next sector is 125nm (just over an hour), and since there's fuel available there I want to carry 1300lbs (incl a ¾ hour reserve). The routing will be DCT DAVON V301 YYD DCT YD; we'll go IFR at A080. That gives us a slight headwind but keeps us below the FZL ---with possible CBs on the prairie, I don't want to have to use the boots.
- Takoff and climb is straightforward; with a GTOW of 14K, V-speeds and power settings are standard. I contact Vancouver and the, once in the cruise when I can relax, have a closer look at the approach plates. BTW, it's standard practice in multi-crew IFR ops to do a 'captain's briefing'; ie, to read out the relevant approach plate. Even in single crew ops, read the info on the plate (including the M/APP procedure)

out loud, whether the RHS is occupied or not and even if it's only your granny sitting there. I brief for NDB-A onto R-15; if Smithers is on the opposite runway, I'll circle.

- A080 will get you there, but the SSA within 25nm of Smithers for my flightpath is 8.9---that's poor flight planning, I should have filed at A100!
- 20nm out from YYD VOR, Vancouver CTR clears me for the NDB A to runway 33 and to traffic frequency. This approach requires a stepped descent via two NDBs to 2800' which is a thousand feet above the airport elevation (or about 3 miles before the threshold). Smithers has good VASIs so spotting the runway when it's clear is not a problem. But the surrounding mountains go up to 8000'---not an airport for a low visibility approach, and not one for flying at night until you know it well! We land at 1528L and taxi in. Fuel remaining is 830lbs, just enough to get back to CAU4 or CYPZ had it been necessary. Next time, I'll plan for an alternate whatever the TAF!

8. CYYD-CBQ8 (Woodcock): 1600L/1625; strictly VFR mountain flying!

- There's no wx for Woodcock, a VFR strip about 50nm northwest. In the real world you'd speak to the 'fellas in the TWR and/or other pilots who know the area, but this is a sim. There's an internet site for layman's wx reporting light breezes and occasional showers, and another offering a satellite view which shows no cloud cover. I'll take my chances; after all, it's summer. The flight will be low level VFR, so let's hope the visibility in the valleys holds up.
- I it will take about 25 minutes there. There's no fuel available until Stewart (or further if Stewart is in cloud) so I want 2.5 hrs. I load for a total of 2000lbs of fuel---a bit heavy, but better safe than sorry! The GTOW is 14.6, which we round up to 15; corresponding V-speeds are 100, 100 and 107 as before.
- I start at 1555L and take off on the hour, levelling at 4500 ft which is high enough to get me through the valley. The routing is towards BUYCK intersection, and 5 nm before a left turn onto a westerly heading will put the river in sight. Turn left again at the river, cross over to the right bank and on a heading of 230 follow it (with a slight dogleg across low ground) to Woodcock---pretty straightforward really in summer with good viz and no wind. The main road crosses the river just before the airstrip, which is on the RHS. Remind me to fly something smaller unless the wx is perfect!
- You'll be tempted to land to the southwest on R-20, but because there's a little hill to get over on finals, unless you're flying something much smaller a B1900, it's best to overfly the runway by 5nm, do a 180 and approach from the R-05 end. It's a short runway so speed control on short final is essential.
- We're on at 1625 as predicted; fuel burn is only 242 lbs, so there's lots left for the next sector. We unload/load, get the wx and aim to go at 1645L.

9. CBQ8-CZST (Stewart): 1645L/1721; up high but more VFR mountain flying!

- Although a low level flight to Stewart is possible, the routing is long and awkward. Since it's a clear day I'll aim to get up high (A125), fly west northwest and overfly Stewart turning south, then double back and let down along the river onto the northerly runway. That's the plan anyway. If we can't get in for any reason, it's straight on to Prince Rupert.

- A bit of bad news; there is no NavCanada wx for CZST, but the ordinary forecast says it's overcast with light rain, so it sounds like low-mid level cloud. We'll have to see what it looks like from the air.
- It's a short runway so we hold it on the brakes and run up to 80% power, then let go and watch the speeds. Takoff is uneventful, but be aware that the mountains to the north rise quickly. A steep climb gradient and max continuous power is needed to go up at 2000 fpm, so the EGTs stay higher than they should (about 750C max is recommended). Spiralling up to about 8000 would have been the safer option.
- Once at cruise, torque back to 55% and pops to 1550---that's 'best economy' and we may need the range. There's a slight tailwind component since indicated groundspeed is 220kts. I follow the GPS track which is direct to Stewart. It's looking clear up here so perhaps we'll be lucky. I turn onto a westerly heading (about 20 deg left) at 50nm out to position to the south of Stewart and so get a good view of the 10nm of river valley which leads to it.
- The valley is clear and the runway at Stewart is visible. I turn southbound and start down, at about 20nm out and descending through 10,000 I do a 180 and start inbound, aiming to lose height at 1500 fpm. I'm looking to be at 1500 AGL about 5nm out in; I call inbound for R-36, then final at 5nm.
- We're on at 1721, parked at 1725 and the skies are clear. A bit of good luck; now to turn around by 1745 before it changes.

10. CZST-CYPR (Price Rupert): 1745/1825; VFR downriver to CYPR!

- I chose to go to CYPR instead of PAKT because I need to know the downriver segment at low level should I need to use it in bad wx. CYPR is about 35 min away and current wx is 18008KT P6SM SCT030 BKN090 but it may close in later. I'll fly VFR at 1500' to stay in sight of the ground; can't load fuel 'cos there's no FBO but I have enough to get there with a good reserve (1325 lbs or 2 hrs left).
- The V-speeds will be the same. Start and taxi are uneventful. With little wind, I elect to take off on R-18; easier and faster. It's a 4000ft runway so I can accept a small tailwind component.
- Once airborne, I follow the river; the narrowest bit is the first 10 nm or so. With the sun far in the west, the mountains produce deep afternoon shadows that make visibility tricky at times. What would it be like by moonlight I wonder (doubting that it would be romantic). Flying this low is uncomfortable, mainly 'cos if anything goes wrong, you have almost no time to think before you're in the water (or worse).
- Half way down the river and there's a stratus layer above at perhaps 6000'. I set up CYPR's NDB and ILS in case they're needed. No use speaking to Vancouver since there will be no coverage at this level (FS 9 misleadingly lets you get 'flight following' here!).
- It's getting misty---viz down to perhaps 5nm. I'll need that instrument approach I suspect. Thankfully the river is much wider now, but as the banks recede there's mist everywhere and I can 'see' using the terrain facility on the GPS. The panel mount GPS was truly a great invention. I can remember when they first were introduced and I was flying for real, they changed the way we flew almost as radically as the post war VOR 'revolution'.

- We're on at 18:24 and parked at 18:27; that's 40 min and 409 lbs, or 614 pph. And the weather was just about what was forecast. From here I'll probably sort the cargo, then file for Sandspit (CYZP) to complete the northern loop. PAKT would mean too many customs forms!

10. CYPR-CYZP (Sandspit): 1855/1945; finally IFR to CYZP!

- The last flight of the day takes us back to Sandspit, our point of departure in Canada. The TAF is OK: 23010KT P6SM FEW016 BKN080 which possibly suggests ILS-12 with a slight tailwind component. Here CYPR the wx has got worse and viz is down to 2.5 nm is light drizzle; but it's TEMP and the TAF looks reasonable for a return if needed.
- I top up to 3 hours, or 2000 lbs of fuel. V-speeds remain as before, and we'll probably be taking off from R-13. The routing at A100 is DCT PR R4 ZP DCT.
- We break out on top at about 6000'; turn on course at PR and are cleared up to A100. It's pretty straightforward above the cloud and with no visible moisture. There's plenty of cloud on the horizon, though; 40nm out we're cleared down to A040 for vectors to ILS-12, and from the TOD downward we're in the murk, some of it quite dark. AWOS reports the wx as per the forecast, but with the wing from 230, the x-wind and tail wind components are only about 4 kts each, well within limits.
- Day has turned to dusk, so panel lights and landing lights on. Once cleared to intercept the localiser at 2500 ft, I set the APP function and watch the loc come alive, lock on and the G/S indicator gradually come down. The gear goes down at 'one dot above' and the power is reset accordingly. The A/P needs to be monitored carefully--- occasionally it will fail to lock onto the G/S requiring quick disengagement and hand-flying the ILS. Strictly, I should be hand flying this but it's been a long day and the ILS here is not quite lined up with the extended centreline.
- The approach and runway lights are in sight at 4-5nm out. I dump full flap at 1000' AGL and take out the A/P at 500'. We touch down at 1942 and are parked by 1945. The 20kt windsock is lit and showing about 230 degrees. We're home and I've burned 419lbs (just under 600 pph). That's enough for today. We sort the cargo, tie her down and head for the terminal.

II. The Long Southern Loop

The following sectors constitute the so-called 'long southern loop'; they start in Prince George (CYXS) and end in Sandspit. Leg 7 in my original plan was Williams Lake to Penticon, then on to Victoria; this turns out to be quite long, so I amending this to Williams Lake-Kamloops-Victoria instead. That's why on leg 7, I fly Kamloops-Victoria.

6. CYXS-CYWL (Williams Lake): 13:55L/14:50 simple IFR flight leg??

- Here we go again. The local wx is VRB03KT P6SM SKC and the TAF for Williams Lake just as benign VRB03KT P6SM SCT250. It's just over 100nm and we'll file at A150, taking off towards the YXS VOR. We'll want startup at 1355L. The upper winds are from 220 at 28 and the FZL is just above A012, so there may be a headwind to worry about, but if the skies are clear, ice is not a problem. There are no

NOTAMS affecting us directly, but airports much further south are reporting smoke from forest fires.

- The routing is DCT YXS V231 XWL DCT and I estimate flight time to be about 45 minutes. Fuel required including reserves is 1340 lbs, but we've got 1400lbs in the tanks, more than enough to get there with a ¾ hour IFR reserve. V-speeds at a GTOW of 14K are 100, 100 and 103. We'll climb out initially at 2000 fpm and 150 kts reducing gradually to 1500 fpm.
- Once at cruise, the headwind component resolves itself almost entirely into an xwind component and our GS is just over 200kts. At 70 nm out, Vancouver CTR announces that CYWL is landing R-29, so we ask for the NDB WL approach and are cleared direct WL. The SSA within 25nm of WL is 5.7, so we can reckon being cleared for descent starting about 30-40nm out. R-29 will add an extra 10' or so to the trip. The wx has gone slightly pear-shaped; there's a 'grey out', but no visible ice---it might be smoke from the forest fires reported in the NOTAMS. Perhaps they've spread northward faster than anticipated.
- Since there's spare time, I do the captain's briefing. About 40nm out we're cleared to 9000, then to 5000' when 25nm out. The current heading is 145. The procedure calls for a beacon outbound course of 114, a right procedure turn 2min past the beacon, intercepting a QDM (heading) of 294 inbound, crossing the beacon at 4100 and descending to 3600. The threshold is 3nm from the beacon, a descent rate about 600 fpm.
- ENGINE OUT!!! ... 5nm before the beacon. It's not that the engine has failed totally,



but rather that the right power lever is longer responding, which amounts to the same thing. (I don't use rudder pedals, so I can't identify the failed engine that way.)

Thankfully, the starboard engine is non-critical; I feather it (it was on autofeather anyway) and shut it down along with the right generator. There's no rudder trim on this simulation, but

with full power on the remaining engine---and still on the GPS A/P turning outbound--the aircraft is flying pretty well, banked slightly to port as it should be. Blue-line speed is 120kts, so we'll stay well above this for as long as possible.

- I fly outbound, complete the procedure turn and settle inbound at 4600', looking to cross the beacon at 4100'. The checks are complete and the radio calls are made. I start down at 600 fpm 3.5 nm before the beacon, setting flaps-1 and lowering the gear. Passing the beacon, the (thankfully 7000' long) runway is visible and we've still got a margin to spare above blue line speed. Flaps-2 will go down when the landing is assured, since the drag will pull us below blue line speed. We're high and hot (as they say) over the threshold, but I set it down with no problem---a bit of a twitch taxiing, nothing more serious. We're on at 1445 and parked at 1450. 55 minutes and 550lbs

fuel burn (600 pph). Once shut down, I realise it's probably overnight here until the right power lever is sorted by the airport FBO. Also, doing the captain's briefing well in advance paid off, as did the luck of having good weather!!

7. CYWL-CYYF (Penticton): 16:00/1730; up to the FLs and down for a complex instrument approach.

- The power lever problem turns out to be minor, so we can fly again today. At least one of these sectors has to get us into the Flight Levels (above 18,000'), so it might as well be this one which is 180nm. I sort the cargo, then head for flight briefing.
- The TAF for CYYF is VRB03KT P6SM FEW100 ; enroute wx is generally good with a 15kt headwind component, a temp of MIN20 and no icing at our chosen level but possible ice below in the descent segment. In short, the enroute wx looks OK; as an alternate we plan CYKA (Kamloops), VRB03KT P6SM SCT140 BKN240 TEMPO 0115/0120 3SM FU. Ouch---there could be smoke even at high altitude!
- I file for F230 routing DCT WL B8 YKA DCT DAMUT DCT. I load 1.25 hours of fuel to get there, 0.75 to the alternate and 0.75 reserve; I'll top up to 1800 lbs in all.
- There's a fair bit of CU about enroute, but we're above the tops. After YKA we're cleared for vectors to R-34 but I request the NDB A via the YDC VOR and R-16 circle R-34.
- About 30nm out, we're cleared to descent to A093 and a few miles before handed off to Penticton Radio. From now on it's the published approach, northbound at YYF, descending to 6.5 by UMT, after which there's a left procedure turn back onto the southbound track. I elect to follow instruction and approach R-16, pass overhead and circle to land on R-34. If I had to do it at night, I think I'd request R16 and accept a tailwind (as it is the winds are light and variable) but that's not an option with FS9. The flight takes 1.5 hrs and we burn 930 lbs (620 pph).

8. CYKA(Kamloops)-CYYJ (Victoria): 18:00L/1915 (2015 PT); IFR at dusk

- This is the first night flight in the series, so don't forget the torch. For reasons given above, I've decided that this sector will be CYKA-CYYK, shorter than CYYL-CYYK. Although the Kamloops instrument approach is not as challenging as that at Penticton, it's mountainous and liable to be tricky in bad weather. For that matter, you'll want to consult the Kamloops departure plate carefully if visibility is less than unlimited.
- The local wx is 09013KT 40SM BKN075 OVC120 and the TAF for Victoria is 28005KT P6SM SCT240. Although Victoria looks to have fine weather, the later TAF suggests the wind will swing around and so we'll plan YVR as an alternate. It's 180nm to destination and we file at F220, taking off towards the YKA NDB.
- We'll want start-up at 1755L. The (interpolated) upper winds are from 230 at 20-25 backing to 210/20 further west. The FZL is just above A010 and MIN20 at cruise, so although there may be a headwind to worry about, ice is unlikely to be a problem. There are no NOTAMS of much importance except that the approach to R-31 may be unavailable.
- The routing is DCT YKA V338 YVR DCT and I estimate flight time to be about 1:15 minutes. Fuel required including reserves is 1500lbs; more than enough to get there (and divert to YVR) with a ¾ hour IFR reserve. V-speeds on an ISA day at a GTOW

of 14K are 100, 100 and 107. We'll climb out initially at 2000 fpm and 150 kts reducing gradually to 1000 fpm.

- The A/C is a bit sluggish in the climb so it takes 25 mins to get us to our cruising level of F220. There's some CU on the way up, but nothing serious. Cruise is a dawdle. About 50nm out from YVR, we get the Victoria ATIS; they're landing to the east on R-09 and it's light winds and CAVOK. We request and are cleared by Vancouver CTR to the YVR for the published approach.
- It's dusk and the first stars are visible well above the orange sunset. Beyond the mountains one can see Vancouver and the bay from FL 220. This is almost as good as the real thing---but not quite! We're cleared to descend first to 14,000 (the descent checklist to hand and the landing lights going on at 10,000) then passing YVR we're cleared down to 4000. You want to fly the published approach here 'cos there are high hills all around. In fact, *always* fly the published approach unless cleared to do otherwise!
- Once on the localiser for R-09, I call established and dump flaps 1. The gear (or undercarriage as we used to say) goes down at one-half dot above the glideslope and the final approach checklist is completed. At 1000' I set full flaps (flaps 2 on this aircraft). The A/P altitude is set to 3000 in case the missed approach is needed. DA is 255, so I take out the A/P at 500 and we are on the ground at quarter past the hour exactly---a smooth and very enjoyable flight. There's 767lbs (just over an hour) left in the tanks; we've used 733 lbs, or 586 pph.

9. CYYJ-CYZT (Port Hardy): 2020L/2140; IFR at night to the back of beyond

- To date we've not really done any serious night flying so tonight is a first. Besides, we're going to spend the night in Port Hardy since the following sector to Bella Bella is daytime only. Port Hardy is a small non-tower 24h airport with JetA available, but it has almost no other facilities and you'll need to research things like accommodation (in the days before the Internet, one rang the airport during opening hours). There's an ILS approach and basic runway lighting on R-11, with a VORD approach to R-29.
- The TAF for CYZT is VRB03KT P6SM FEW120 PROB30 1211/1217 1/2 SM FG; in other words, very good except for a 30% probability of fog between 11-1700Z. Since we'll arrive during that period, it would be sensible to have an alternate CYBL (Campbell River) where the TAF is VRB03KT P6SM SKC BECMG 1220/1222 09005KT and there's also a precision approach.
- The FZL tonight starts at A130 and will be at A110 at destination; a tailwind component of 26kts is forecast so we'll make good time. I plan for a flight duration of 1.5 hrs; it's 80nm back to CYBL so that's another 0.5, while I'll add a full hour of reserves on top bringing total fuel required to 3 hrs or approximately 2000 lbs.
- We file for FL220 departing at 2015L (always file for 5 minutes before intended takeoff time). The routing is DCT YYJ V440 YZT DCT, and the ICAO equipment code is SD/C.
- Taxiing out to R-29 takes a while, so we're off at 2125, a bit later than planned but not enough to lose the slot. WE depart R-29 flying the MB4 SID, doubling back on hdg 102 after MB NDB, then being cleared direct to the YYJ. We're at A060 passing the VOR and there's a 20' climb until we get to cruise (F220) passing NANOO. From

there is straightforward. It's blowing about 170/50kts because we've got a strong tailwind component and are showing a 240kt groundspeed for a TAS of about 210 (I use 55%/1500 to keep fuel burn to most economical).

- It's a lovely night, clear with lots of stars and no light pollution. About 15 min before anticipated TOD is a good time to get out the approach plate and do the captain's brief; I'm expecting the ILS for R-11.
- About 80nm out we're given the anticipated runway and cleared down in steps, first to one zero thousand, then once close enough down to 2700'. The initial clearance triggers the descent checks. I've asked for the YZT transition for ILS-11. AS we approach the VOR, the runway lights are clearly visible so there will be no diversion. A Cessna caravan is calling finals for R-11. The procedure turn starts at 15DME and triggers the final approach checks; it's flaps 1 and the radio call as we establish on the localiser, then gear down as the glide comes down and flaps 3 at a thousand above. I take out the A/P at 500' and the landing is straightforward.
- We're on at 2140, or 1.4 hrs flight time, 0.1 hrs IMC and two hours still left in the tanks and a burn of 645pph. Pretty good. I'll tie down for now and supervise the cargo in the morning. What's needed is a taxi into the town.

10. CYZT-CBBC (Bella Bella aka CAF2): 0800L/0845; VFR into a 3000 ft strip

- Bella Bella (CBBC) has two airfields, both very basic. The one we're going to is on Campbell Island and the runway (13/31) is 3700 ft long, but there's a published GPS approach to R-13. Since the fuel situation at CBBC is dodgy, we'll be carrying enough for the following sector (plus reserve) so we'll be heavy going in. A heavy aircraft into a short strip which I've not been into?---perhaps not a risk I would take in the real world, but this is the problematic reality of simulation.
- There's another weather-related problem. The weather at Port Hardy is benign: 0000KT 15SM FEW014 FEW230; at Bella Bella the AWOS-generated forecast is 20005KT P6SM BKN012 OVC080 TEMPO 1301/1305 SCT012 BKN080. When I double-check use layman's wx from the internet, I find it's forecast to be cloudy all day. OVC at 080 is not a problem---the problem is whether BKN012 will turn into OVC012. Checking the local sig wx chart confirms that a localised cold occluded front has pushed through several hours earlier leaving patchy conditions behind it. It's a marginal call, but the charts are showing CBBC as MVFR, and the final segment of the approach will be visual.
- It's nearly 100 nm to CBBC, and a further 150 to Sandpit, that 250 nm or about 1.5 hours = 1000lbs. If we need to divert to Prince Rupert, count on another 45'+ 45' reserve (=1000lbs), bringing the total fuel load to 2000 lbs. The routing will be DCT YZT V347 YJQ DCT; the MEA is A060, since the FZL is at A012, we file IFR for A100, departing at 0755L. There are no NOTAMS affecting us.
- We depart R-11 at 0800L and turn onto a north northwesterly heading, looking to climb at 160kts IAS up to our assigned level of A010. Once at cruise, it's clear that we have a tailwind component (about 20 kts) so we'll get there quickly. We're 2000' ft below the icing level in the clear, so no problem now at A010 or later when descending. There's a layer as forecast at 9000'; much of it is BKN CU down to perhaps 6000', but I wonder whether it will this clear be when we get there. The GNS500 offers the GPS-A approach to R-13 which doubtless will be of help.

- 50nm out from the XJQ NDB we're cleared to EGBIX (as requested) for R-13 at CBBC and the GPS-A approach. I'll descend to 6200' by EGBIX starting 15nm out unless otherwise cleared. At 15nm, Vancouver clears us down to 3800', and we'll stay there from EGBIX to DUVNI, the IAF. Passing 5000' nearing EGBIX, we're handed off to the UNICOM frequency. We're beneath the top layer, but it's milky at 3800' and I'm glad we have a GPS and not a purely visual approach to make.
- The approach is deceptive; with trees at the R-13 end and no VASIs we come in too high and nearly run out of runway. We're on the ramp at 0845 and shut down. There's 1500 lbs of fuel left in the tanks, more than enough to get to Sanspit or beyond had it been necessary. Flight time is 45 minutes and fuel burn is 645pph. Now for the cargo, some coffee and more paperwork.

11. CBBC-CYZZ (Sandspit): 0920L/1025; going home at last

- It's misty this morning with no surface wind. This is the final sector, particularly welcome as we're finishing the long southern loop (the next time here will be flying the short southern loop). The routing will be DCT YJQ V347 YZZ DCT. Since it's 150nm, we elect A160. The TAF for Sandspit is 1413/1501 28007KT P6SM SCT030 TEMPO 1413/1416 BKN020 BECMG 1418/1420 13007KT, so we can probably expect the ILS approach to R-12.
- Although the FZL is at A120, NavCanada shows little chance of ice and a tailwind component of +15. There are no NOTAMS affecting us. No need to top up the tanks--we've got enough to get home and even divert to CYPR with the necessary IFR reserves. I file for startup at 0920L. ETE is 1.3 hours.
- We announce taxi at 0920L and at 0925L take off 'straightout' from R-31. The V-speeds are standard. The climb and cruise is uneventful. While in the cruise I do the captain's brief for ILS-12. About 75nm out we get an ident from the ZZP NDB. If R12 is active, we'll ask for a clearance straight to the YZZ VOR and do the procedure turn; it's quicker than taking vectors. I double check the ILS-12 plate.
- About 55 nm out we're cleared down to 6000' and to the YZZ for ILS-12; at 35 we get the AWOS which is reporting light winds and good viz. We're given further clearance down to 3000', and ident both the ZZP and the ILS at about D-20. At 300' the sea is visible below, and as we approach Sandspit, so is the runway---no worries. The preliminary approach checks are completed; for 14.0K gross, $V_{ref} + 15 = 150$ and 120.
- Once localiser established inbound, we dump flaps 1 and descend to 2300 as per the published approach, aiming to intercept the glidescope at the ZZP NDB at approximately D-7 at 2300' (double-check the altimeter). We'll maintain 150 fully established until 1000' above the elevation (+21), then go to flaps 2 and reduce to 120 (blue line) until close to the threshold. I'll take out the A/P at 500 AGL; DA is 300'. The A/P altitude will be set to 2800---the M/A procedure is runway track to 1000', the left back to ZZP climbing to 2800'. Power settings are 55% and fully fine; these can remain constant until the flare.
- At about 6nm we can make out the runway, and all the rest goes smoothly. We're on the ground at 10:25L and on chocks at 10:30, for a fuel burn of 635pph. The tail wind has helped us get here faster than expected, and we have 1.4 hours left in the tanks,

well within IFR limits. The doors are opened and the cargo gets unloaded. Home at last.

III. The Short Southern Loop

8. CYWL-CYPU (Puntzi Mountain) 13:50/14:35; VFR into another mountain strip

- For the short southern loop we go back to Williams Lake (CYWL) and fly to west to Puntzi Mountain (CYPU), a curious mountain strip which has no fuel and no lights. (If you fly this circuit in winter, I recommend flying the easterly route to Prince George, then to Williams Lake where you can fuel and stop overnight.) Both the Putzi Mountain (80nm) and Bella Coola (a further 100 nm) sectors need to be flown in the day, weather permitting, and neither has any sort of instrument approach. Otherwise, you'll fly direct to CBBC (a further 75nm) which at least has a GPS approach.
- We'll route DCT YWL DCT at A120 using CYWL as our alternate, but carrying enough fuel for the two further legs + 45', or $325 + 325 + 650 + 487 = 1787$ which we'll round to 2000lbs. The current wx at CYWL is 14002KT 15SM FEW070 FEW140 SCT220; there's no TAF for Puntzi, so we look at 'other sources' which report it clear all day today, with virtually no wind. That looks good enough.
- We taxi out at 1350L and take off at 1355. Once at cruise, there's CU over the prairie which we try to dodge. Otherwise, there's good visibility. At 50nm out, we're told that R-04 will be active and we're given radar vectors. Once in the descent, we'll cancel IFR. We can see the mountains now, and CYPU is just inside the mountainous area.
- We're given radar vectors and cleared down to A070, and we cancel IFR. A VFR approach is tricky because viz is about 6-7 nm, but with the aid of GPS we stay in the clear and turn towards R-04. Approaching towards the north is relatively painless; spot the road and it will lead you in. The runway elevation is 3000' and you can let down from 5100 at 3 deg from 7 nm out. We're on the ground at 1432 and shut down on the ramp at 1435L; that's 45 minutes' total PIC (of which 35 flight time). The fuel burn is 461 lbs or 615pph. We'll file from here for a departure on the hour.

9. CYPU-CYBD (Bella Coola) 14:55/15:35; VFR into a trickier mountain strip

- As said above, Bella Coola cannot be attempted at night or in poor visibility. It's wedged between the mountains and requires precision flying to get into. The plan is to file VFR (dep 1455L) to UAB NDB at A125 (just below the forecast FZL), then to let down and follow the river valleys to destination. We have 1500lbs fuel, enough for getting there + the alternate (CBBC) + 45 minutes. In the worst of cases we'll go to Port Hardy or Sanspruit. Let's hope the viz is better to the west.
- The weather for CYBD is reassuring: the TAF is 00000KT 15SM BKN120 OVC160, though for CBBC it's less good: VRB03KT P6SM SCT030 BKN060 TEMPO 1519/1605 P6SM -SHRA BKN030. We'll try for CYBD and hope the wx holds up for the following sector; remember, CBBC has a GPS approach.

- The weather here at Puntzi is misty. We announce departure to local traffic and take off from R-22, climbing full steam with a careful eye on ITT (inter turbine temp) which should not exceed 750.
- At the TOC, we're in the clear and nearing the UAB NDB it looks reasonable---let's hope the valleys to the west are clear. There's a little layer which we may get into, so we descend to A105.
- I spot the river valley below which will take us to CYBD and it looks reasonably clear. So I start down to 5500'. If the viz deteriorates, I must have a plan to get out though. It's dicey, but using the GPS I get down to 2000' and spot the airport at about 6nm out. I call for R-22 and get it down, landing at 1532 and on chocks at 1535L. The total time is 40' and we've 1200 lbs left, just under 2 hrs. We've burned 336 lbs (504 pph). The wx is worse than expected, and light rain starts just as we land. I'd never do this for real!

10. CYBD-CBBC (Bella Bella) 1600/1635; VFR again

- This is the final VFR leg, and has a PGS approach to R-13. I recall from the last time that the approach is visually misleading because of a small hill end trees at the R-13 end. But the main task is to get there. The rain has stopped here at CYBD and the TAF for destination is 13004KT P6SM SCT040 BKN080 TEMPO 1713/1719 P6SM -SHRA BKN040. We can either go on top, or go below judging that we're unlikely to encounter much cloud below A040. I file for A025 (VFR) departing at 16:00L.
- We're got 1200lbs of fuel onboard, enough for 1.5 hours plus a half-hour VFR reserve. That looks acceptable, and there's fuel available at destination. I reckon it's ½ hour there, which leaves one hour in case of extreme emergency. I bring up a flight plan that gives is a straight GPS line between here and our destination.
- We start, taxi and do the runup checks, then line of for R-22. After the previous flight, this should be fun.
- You fly out of the valley turning slightly to the right at the end. I reckon viz is about 10nm and the cloud base is SCT at 4000', so A025 seems a comfortable place to stay VFR. The GPS is set to 10nm range and 'terrain' view (something my real GPS didn't have). About 40 nm from destination one has to turn right from 240 to 330 at a fork, proceed on 310 for about 5 nm, the left sharply to 210 and follow the more northerly of the two rivers shown. That (and the approach) is the tricky bit. The rest is a bit like entering Icelandic fjords; wide enough to navigate but mainly too narrow to do a 180. Unlike Iceland, though, the mountains on either side are getting lower--- maybe only 4000' at this stage.
- About 20 nm out there's some low cloud in front of us so I elect to descend to 1200' and keep the ground in sight. It works and I'm soon past it. The approach is coming up. I climb back to 2500' and head direct for the YJG NDB; I then turn onto a 310 heading for IGTEP (about 8nm out) where I'll turn and do the approach to 31. I call CBBC.
- We're on at 1631 and on the ramp at 1635L with 850lbs of fuel left or 1.3 hrs. The next leg is home.

11. CBBC-CYZP (Sandspit) 1755L/1900; dusk IFR to the end of the road

- We'll file for IFR for Sandpit departing at 1755L, altitude A160 and routing DCT YJQ V307 YZP DCT. The weather here is not brilliant, and the TAF for CYZP is worse: 1819/1907 14008KT 1/2SM -SHRA BR VV001 TEMPO 1819/1822 6SM SHRA BR SCT008 OVC025 FM182200 15010KT P6SM SCT015 BKN040 TEMPO 1822/1907 2SM -SHRA BR. That deserves an alternate, and the TAF at CYPR is: 1819/1907 12005KT 6SM -SHRA BR SCT012 OVC025 TEMPO 1819/1907 1SM SHRA BR BKN006 OVC012 BECMG 1821/1822 16012KT RMK FCST BASED ON AUTO OBS. It doesn't look great at Prince Rupert either, but it's within the alternate requirements. The sigwx chart for 700-400 mbs shows a cold front moving through our destination with tops between levels 120 and 200.
- We need 1.25 fuel to CYZP and another 0.5 to YPR plus 0.75 reserves, which comes to 1625lbs. We load 1700 lbs. There are no NOTAMS or SIGMETS that affect us. There's a strong crosswind of 195 at nearly 50kts! FZL is around A080, so it'll be cold at A160---though not below MIN20. In short, we'll get there OK but landing will be tricky and certainly IMC. The V-speeds for 14.3 (15K) GTOW are standard.
- We're off on the hour, and up through the murk and on top at 6000' pretty quickly. At 10000', the wind at 210 is almost entirely from port, so with an IAS of 155, the GS is only 170 and the drift is 15 degrees. In cruise at A160, things look a bit better with an IAS of 170 and a G/S of 220. I Brief for ILS-12 at destination.
- At 60 nm out from the VOR, we're descended to A100, then A030 at 25nm. The AWOS is encouraging, light winds blowing from 110 and decent visibility, so earlier fears were not borne out; the bad wx has moved through more rapidly than forecast. It's 10C so at 3000' ft, icing won't be a problem. About 5nm from the beacon I can see the lead-in lights for R-30. All being well we'll be on the ground one the hour.
- We land at 1859 and shut down on the ramp at 1902. That 1:10 and fuel remaining of 1025lbs, enough for 1 ¾ hours; we've burned 675lbs in 65 minutes; or 623 pph. Once the cargo doors open, I can supervise, and then go home. That's the end of another loop---and the end of our cargo jaunt around BC!

Happy landings!

The author, MTN1862, is now retired and was for many years a part-time commercial pilot doing air-taxi ops in Europe; he has also flown extensively in Canada and the USA. When he lost his medical, he had over 6000hrs and held both CAA & FAA CPL-IRs.