Alsim Simulation

Operating Instructions

Overview of Simulation

This Alsim simulation is primarily designed to familiarize you with the avionics in the Alsim MCC200 Flight Simulator. The avionics and autopilot in the simulation work the same as in the MCC200 with a few minor exceptions:

- Flight Director NAV mode works with GNSS
- GNS430 simulation has limited functionality, as explained below
- Altitude Selector updates when altimeter setting is changed

The simulation contains all VORs on LO2 plus the Montreal and St Jean VORs.

The simulation contains many NDBs, but not all, on the LO2. The ones you need for syllabus preparation should be there.

The method of tuning the VOR and ADF radios was previously covered in the Selkirk Land simulation, if you have any trouble see Ray Preston for advice.

The GNS430 in this simulation has a limited set of Flight Plans. It does not work like a real GNS430. You are expected to learn how to use the GNS430 but using the Garmin provided simulation available on the network.

To use the GNS430 in this simulation click on the FPL button and notice there are four options:
1. Waypoint matches NAV1
2. Waypoint matches ADF
3. DARWIN TWO DEP
4. BACHO TWO DEP
5. HARAS ONE ARR

The above DARWIN and BACHO flight plans facilitate preparation for Dual 7.

The HARAS ONE ARR can be used in conjunction with approach # xx – see explanation of approaches below.

In a real airplane you will normally use the GNS430 by matching the waypoint in use to NAV1 or the ADF as appropriate. The simulator therefore approximates the way you will use the actual GNS430 in flight.

Tune Setup Identify (TSI)

The primary purpose of this simulation is to facilitate your practice of tuning and setting up the radios. Appendix 3 of the text IFR for Professional Pilots fully describes the eight items you should check as during the setup portion of TSI.

To identify the station use the audio panel just like a real airplane – the ident will appear in text form rather than audio Morse Code.

"Flying" the Simulation

The intent is that you will fly 99% of the time using the auto-pilot. The autopilot has been programmed to work, as much as possible, just like the one in the MCC200.

Use the mouse to set the command bars for takeoff (recommend 10° nose up.) Use IAS mode to hold speed in climbs. Always program the altitude selector and arm ALT mode. The autopilot will maintain altitude.

Use NAV mode just as you would in the MCC200 to track a VOR radial. In the MCC200 NAV mode will not work with GNSS selected but in this simulation it will. You can however use HDG mode to manually track a course – you should do this when approach a VOR to avoid autopilot "chasing the needle" during station passage (this is also important in the MCC200.)

APR mode works in the simulation just like the real MCC200. When flying an ILS select APR mode prior to intercepting the localizer.

Annunciation above the HSI are the same in this simulation as in the MCC200, giving you a chance to become familiar with the expected indications.

It is possible to "hand fly" by turning off the autopilot and using the arrow keys like a joystick. You must use this procedure to taxi and takeoff, but it is strongly recommended that once established in the climb after takeoff to engage the autopilot and use if from that point onward until just prior to "landing."

Retract and extend the gear by clicking on the gear handle.

Set flaps using the buttons beside the flap position indicator.

Set power by dragging the throttle and propeller controls

Time Compression – Freeze

Use + and – keys below clock to change time-compression.

Time compression or 1 means time passes at normal rate. Set the value higher to make things happen faster than in real life.

Main Menu Options

The Main Menu for the simulation looks like this:

Start Locations

Abbotsford	PrinceAlbert
Boundary Bay	Prince George
Calgary	Regina
Castlegar	ROUYN
Campbell River	St. Jean
Comox	Saskatoon
Ft. McMurray	Smithers
Grande Prairie	Springbank
Lethbridge	Terrace
Lloydminster	VAL D'OR
Medicine Hat	Vancouver
Nanaimo	Victoria
Penticton	Williams Lake

Skills

PDT	APPRS	HOLDS

You have 4 options to choose from:
1. Start Location – use to practice IFR departure procedures
2. PDT – used to practice Pre-Determined Track intercepts
3. APPRS – used to practice specific IFR approach procedures
4. HOLDS – used to practice hold entries and maintenance

You can return to the Main menu anytime by using the red button at the upper right corner of the simulation. Be sure to select the appropriate option in order to take full advantage of the simulations ability to provide you with clearances and position you as needed for effective practice.

Start Location

Choosing one of these buttons puts the simulation "on the ground" at the designated airport. From there you can practice departure procedures.

Taxi by using left and right arrow keys.

GPS Flight plans include DARWIN TWO and BACHO TWO SIDs at Springbank. No other RNAV SIDs are currently implemented, however you can fly conventional departures using VOR and ADF. For example you should practice departures at Penticton, Castlegar, etc.

PDT

The simulation uses a random generator to pick an NDB or VOR from LO2 then assigns either an inbound or outbound PDT.

The important thing is to go through the proper TSI procedure.

The simulation is frozen during this procedure. There is no need to actually intercept the assigned track, just complete TSI and set the heading bug to the required intercept heading.

Once you set the heading bug click the button labeled *Evaluate PDT*. A message will be provided detailing errors in your TSI.

APPRS

The simulator is programmed with 31 approaches. A random number generator chooses one of the 31 approaches. However, you can choose one of your own choice using the selector at the bottom of the simulation.

Here is the list of approaches:

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1) CYXH (Medicine Hat) Str-in VOR RWY 03 - start on R336
   10 DME arc
2) CYXH (Medicine Hat) VOR 03 full procedure
3) CYMM (Ft McMurray) Str-in VOR RWY 25 10 DME arc
4) CYJN (St Jean) Str-in VOR RWY 06 10 DME arc
5) CYQL (Lethbridge) VOR RWY 03 full procedure
6) CYXE (Saskatoon) NEB RWY 15 full procedure
7) CYQV (Yorkton) NDB RWY 03
8) CYXX (Abbotsford) NDB RWY 07 full procedure - S-turn
9) CYVR (Vancouver) NDB 26L full procedure - Mod
   Racetrack
10)    CZBB VOR RWY 07 full procedure - Mod racetrack
11)    CYQL (Lethbridge)ILS 05 - race track procedure
   turn
12)    CYXX (Abbotsford) ILS 07 race track procedure
   turn
13)    CYXT (Terrace) ILS/DME RWY 33 from DAVED
14)    CYXS (Prince George) Loc(BC)/VOR/DME 1 RWY 33
   from Chubb (out of date plate)
15)    CYYD (Smithers) NDB A - begin SW on V324 at
   10,000
16)    CYLW (Kelowna) ILS DME 1 RWY 16 - from hold at
   WTMAN
17)    CYVR (Vancouver) NDB 08R from a STAR
18)    CYYF (Penticton) LOC DME B via DME arc
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19)     CYCD (Nanaimo) NDB DME 16
20)     CYYJ ILS 09 FASBO arrival from STAVE
21)     CYXJ (Fort St. John) Loc(BC) / NDB RWY 11 from
   arc
22)     CYXJ (Fort St. John) Loc(BC) / NDB RWY 11 full
   procedure
23)     CYCG (Castlegar) Loc DME E - cold temperature
   correction
24)     CYVR (Vancouver) ILS/DME RWY 08L Booth STAR
25)     CYWL (Williams Lake) NDB RWY 29 full procedure
26)     CYXT (Terrace) ILS/DME RWY 33 from ZKI
27)     CYYF (Penticton) NDB/NDB A full procedure
28)     CYBL (Campbell River) Loc(BC) DME RWY 29 race
   track procedure turn
29)     CYXX (Abbotsford)ILS RWY 07  HARAS1 arrival
30)     CYYJ (Victoria) ILS 27 FASBO Arrival
31)     Regina  ILS 13
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The above list approximates the order and complexity of approaches you will experience on the dual lesson in the Alsim.

HOLDS

A random hold clearance is generated and shown at bottom left. Copy it down and perform TSI.

Check the wind with the button at upper right (also check Alt Setting.)

Use autopilot to fly hold entry and holding pattern.