

## **User Manual**

### **BC REGIONAL AI – UPDATE 1**

#### **1. GENERAL**

BC Regional AI allows you to implement and enjoy realistic scheduled airline AI with the FS9 and FSX add-on CYYJ (2008) and other add-on airports in British Columbia, Canada. It includes all the aircraft files you need to implement the AI scheme, together with the TTools-format source files and the compiled traffic files. Simply install BC Regional AI and, thanks to the efforts of a number of aircraft modelers and repainters, see CYYJ and most other BC airports come to life.

If you already have an AI traffic add-on such as MyTraffic, it would be reasonable for you to ask “Why do I need BC Regional AI?” The answer is simple. Realism!

BC Regional AI accurately depicts the scheduled traffic for the following airlines at every airport in BC where they operate - except CYVR where only regional traffic is depicted. The acronym in parenthesis is the AI parking code. (Normally, the parking code is the IATA identifier for the airline. However, since several of the airlines do not have an IATA identifier, I've created my own for the purposes of this add-on.)

- Air Canada (ACA)
- Air Canada Jazz (JZA)
- Airspeed Aviation (SPD)
- Alpha Executive Air (AEA)
- BC West (BCW)
- Central Mountain Air (GLR)
- Horizon Air (QXE)
- Orca Airways (ORC)
- Pacific Coastal Airways (PCO)
- United Express (UAX) – YYJ/SFO service
- Westjet (WJA)

The AI traffic is based on the latest available flight plan data (identified in Appendix “B”). Aircraft and airline liveries are those in use at mid-2008. These aircraft will assume their normal gate positions at the terminal at CYYJ and at other add-on airports where the correct airline codes have been assigned to the parking spots.

If you have previously installed my CYYJ Custom AI, you must delete/disable its airline traffic file as described in the following section. Otherwise, BC Regional AI is fully compatible with CYYJ Custom AI.

The included aircraft and texture files are, for the most part, proprietary to others. The authors are acknowledged in Appendix “A” with my thanks.

As a bonus, you will be able to use the included AI aircraft to populate your other airports simply by creating appropriate flight plans.

It doesn't get much better than that!

\* \* \* \* \* Update 1 \* \* \* \* \*

The original version of BC Regional AI included two errors. First, due to a problem in the TTools flight plan source files, certain weekly flight plans did not operate properly over the weekend. Secondly, I recently discovered that the AI engine ignores flight plans having more than 100 legs. The two flight plans generating most of the Jazz traffic between (CYVR) Vancouver and (CYYJ) Victoria had more than 100 legs. Hence, that traffic never materialized.

Update 1 corrects both problems

## **2. INSTALLATION**

BC Regional AI includes an automatic installer, which is a Microsoft NET.Framework 2.0 application. If NET.Framework 2.0 is not already installed on your computer, the “redistributable” can be downloaded from the Microsoft website at no charge.

Unzip the BC Regional AI archive file to a temporary folder (“folders” option enabled). **DO NOT UNZIP TO THE INSTALLATION FOLDER.**

If the original version of BC Regional AI is already installed on your system, you should not use the installer for this update. Instead, simply:

1. overwrite the *Traffic\_BCRegional\_...bgl* files in your FS9 and/or FSX \scenery folders with the new versions, and
2. if you previously saved the TTools-format source files for these traffic files, delete them (*FlightPlans* folder) and replace them with the *FlightPlans* folder included in this update.

Otherwise, proceed as follows:

1. Execute (double-click on) *BC Regional AI Installer.exe* in the temporary folder. The installer dialog will be displayed and the FS9 and/or FSX main folder paths should be displayed. If the folder path(s) is/are not shown, you can locate the relevant version(s) of Flight Simulator manually using the Find button(s).
2. Check the “FS9” and/or “FSX” checkboxes to indicate the version(s) of Flight Simulator for which you wish to install BC Regional AI and select the installation folder. The installer will suggest *Addon Scenery\BC Regional AI* as the installation folder.
3. Check the “Install source files” if wish the flight plan TTools-format source files to be installed. If you elect to install them, any files of similar name in the subfolder named *BC Regional FlightPlans* will be overwritten.
4. Once your selection(s) has/have been made, click the “Install” button. The installation will take a few seconds because of the large volume of AI aircraft information to be installed. (No hourglass is displayed.) When it is finished, the installer will display a message advising you of its success or of any problems encountered.

BC Regional AI duplicates many of the AI aircraft used in CYYJ Custom AI – another of my AI add-ons for use specifically with CYYJ (2007). Once the installation of BC Regional AI is complete for a version of Flight Simulator, the installer will check if CYYJ Custom AI has previously been installed. If CYYJ Custom AI is found, the installer will offer to delete the duplicated files. (Leaving the old files will do no harm; they just occupy disk space you might

need for other purposes.) As noted below, you should manually delete the traffic file *Traffic\_CYYJ (Airline).bgl* from the CYYJ Custom AI's *\scenery* folder.

The user manual and the flight plan source files will be copied into the installation folder. If you are installing to both FS9 and FSX, you may delete that information from one or both of the installation folders and placed elsewhere. Neither is required for the operation of BC Regional AI.

For those who are unable or unwilling to use the automatic installer, BC Regional AI may be installed manually as follows:

1. Unzip the installation archive to a temporary folder.
2. If it does not already exist, create a folder named *BC Regional AI* in your *Addon Scenery* folder or elsewhere and create in it a sub-folder named *\scenery*.
3. Copy one of the following files, depending on the flight simulator version, from the temporary folder into the *BC Regional AI\scenery* folder:
  - for FS9, *Traffic\_BC Regional\_FS9.bgl*, or
  - for FSX, *Traffic\_BC Regional\_FSX.bgl*.
4. Copy all the *DG-AI\_xxx* folders from the temporary *AI Aircraft* folder to:
  - for FS9, your *Flight Simulator 9\Aircraft* folder, and/or
  - for FSX, your *FSX\SimObjects\Airplanes* folder.
5. Copy the *Flight Plans* folder and the User Manual from the temporary folder to a subfolder in your *BC Regional AI* folder or elsewhere of your choosing. These folders contain the underlying TTools-format text files from which the AI traffic scheme is derived. Even if you have both FS9 and FSX, only one copy of these folders is required unless you wish to have different traffic for each.

BC Regional AI as installed requires a separate Scenery Library entry, the location of which is not critical. Should you wish, however, you may copy the traffic files from the *BC Regional AI\scenery* folder to any other enabled *\scenery* folder and dispense with the separate Scenery Library entry.

To avoid duplicate AI, if BC Regional AI is installed on a computer on which CYYJ Custom AI has previously been installed, the traffic file(s) *Traffic\_CYYJ (Airline).bgl* should be disabled in, or deleted from, CYYJ Custom AI's *\scenery* folder(s). If CYYJ Custom AI is installed after BC Regional AI, the airline files for CYYJ Custom AI should not be enabled.

#### **4. USING BC REGIONAL AI**

**Mixed FS9/FSX Traffic Files** - Please be aware that FSX *Traffic\_xxx.bgl* files have a different format from their FS9 counterparts. FSX will accept either FS9- or FSX-format files, but not a mix. If there is a FS9-format *Traffic\_xxx.bgl* in any enabled add-on, all FSX-format *Traffic\_xxx.bgl* files will be ignored. Many of the early *Traffic\_xxx.bgl* files for FSX were in FS9-format. If you are using FSX and the BC Regional AI still does not display, chances are you've got a FS9-format *Traffic\_xxx.bgl* file somewhere. That/those files must be found and either deleted/disabled or converted to FSX format. (AI Flight Planner, by the author, will perform such conversions. It is available from both Avsim and Flightsim.)

Parking – AI needs parking! While FSX does the better job generally, neither it nor FS9 provide parking at many smaller stock airports. If parking is not available for arriving aircraft, the AI will disappear upon landing. If parking is not available for an AI aircraft about to depart, that AI will not materialize – at either the departure airport or at its intended destination if nearby (<~100 miles). So, if some AI fails to operate, parking is a good place to start investigating.

Naming of AI - All the AI aircraft provided in BC Regional AI have titles prefaced with *DG-AI*. Hence, there should be no conflict with any aircraft already in, or that you may add, to your "stable". None of the AI included in this add-on will appear in your Select Aircraft list.

FPS "Hit" - All this "eye candy" does not come for free. There is an FPS "hit". Depending on your computer system, this may or may not be problematic. You can minimize the FPS "hit" by un-checking "Aircraft casts shadows" in the Traffic section of the Flight Simulator SETTINGS menu.

Traffic Density Settings – BC Regional AI traffic is enabled at an airline traffic density setting of 1%. (This allows you to avoid the default Orbit Airlines 737, Airwave Airlines Dash 8 or other default airline traffic from occupying your parking spaces.)

Daylight Savings Time - With respect to the AI flight schedule, please note that arrival/departure times are specified in GMT. During the winter, there is an eight hour the difference between GMT and the Pacific Time Zone. However, during the summer when daylight savings time is in effect, the difference is only seven hours. Typically, airline schedules refer to local time. Consequently, when daylight savings time is in effect, AI will operate one hour later than the published schedule – unless you go to the trouble of revising the flight plan information.

Known Issues and Other Idiosyncrasies – Following are the known problems/issues that may be encountered:

- The airplanes used as AI with BC Regional AI are mainly FS9 vintage AI aircraft – due to their wide availability and the lack of suitable AI aircraft updated for FSX. Generally, these FS9 aircraft work well with FSX – with two exceptions:
  - at long distances, these aircraft are no longer textured and appear black or grey, depending on the FSX service pack installed, and
  - the FS9 night textures do not display, leaving the model black.This is a consequence of the way FSX handles small polygons and can only be overcome by using aircraft models updated to FSX – which requires access to the Gmax models – access I don't have.
- When you start FS9, any AI flights scheduled to be in progress at that system time, that were due to depart more than fifteen minutes earlier and that have more than five (VFR) or ten (IFR) minutes until their ETA are placed in the "enroute" state and the flight completes from that point. When you start FSX, only those flights whose ETD occurs later than about fifteen minutes prior to startup are processed; they depart immediately.
- The FSX parking node property "pushback=none" has no effect; pushback always occurs. A workaround has been implemented in CYYJ (2007/8) which can limit the length of the pushback – but not completely eliminate it. Consequently, when AI depart in FSX, you may notice a short pushback or, sometimes, just a jerk.
- With airport add-ons that implement drive-through parking, such as CYYJ, departing and arriving AI may "collide" on taxiways. While both departing and arriving AI appear to be on the same taxiway, they are on different ones as far as the "AI engine" is concerned. This is

the price of “drive-through” parking in MSFS. Also, at CYYJ, in the vicinity of the terminal apron, wide-bodied jets have a separate taxiway system and, hence, “collisions” may also occur. Fortunately, nobody gets hurt. Finally, if two arriving AI meet, head-to-head, on the same taxiway in the vicinity of parking, one may “duck through” a vacant parking spot to avoid the other. When that happens, the AI ends up on the departure “network”, will park incorrectly when it reaches its parking spot and will not depart. This shouldn’t happen often.

## **5. MODIFYING BC REGIONAL AI**

You are not restricted to the AI aircraft listed in Appendix “A”. These are simply the ones I selected. “Mix and match” as you see fit. Each “[fltsim.n]” section in an aircraft’s *aircraft.cfg* files pertains to a particular AI aircraft. (If there’s more than one such section, it means there are several variants of that aircraft available.) The title of the aircraft variant is noted in the “[fltsim.n]” section. You may directly substitute one AI aircraft for another simply by changing the title of the replacement aircraft to that of the replaced aircraft and then changing the title of the replaced aircraft to something else. (However, if two aircraft share the same title, neither will be displayed.) An AI aircraft may be deleted from the scenario by deleting its *DG-AI\_* folder or, less permanently, by changing its title to some unused name. Adding additional aircraft or otherwise changing the AI scenario is somewhat more complex and is addressed below.

To allow experienced users to adjust the AI to suit their own preferences, the *Flight Plans* folder contains the underlying TTools-format source files (*Aircraft\_BC Regional.txt*, *Airport\_BC Regional.txt* and *Flightplans\_BC Regional.txt*) for the compiled traffic file as well as for most of the individual airlines. Subset files for most of the included airlines are also provided.

TTools is a widely-available FS9 utility used to generate AI traffic.bgl files. Unfortunately, TTools has not been updated for FSX. But another utility by the author named AI Flight Planner which reads TTools-format files and generates traffic.bgl files for both FS9 and FSX recently became available. AI Flight Planner also decompiles FS9 and FSX traffic.bgl files back into their original TTools format.

Creation and modification of TTools-format files is beyond the scope of this manual. Please refer to the TTools and AI Flight Planner documentation for syntax and format.

While on the topic of AI modification, please note that FSX uses a different AI parking algorithm than FS9. FS9 uses the radius stored in the aircraft’s *.mdl* file to determine the minimum size for parking spot. That radius can be examined and edited using ADCAD 2.21. Generally, the *.mdl* radius is somewhat larger than the radius of a circle that would encompass the aircraft. This allows for, among other things, adequate separation at hold short points. FSX uses as the minimum required parking radius half the wingspan value stored in the AI’s *aircraft.cfg* file, rounded up to the nearest meter. When you download an aircraft for use as AI in FSX, you should check that the specified wingspan is correct. (Several of the AI aircraft I have downloaded had *aircraft.cfg* wingspan values varied widely from actual. In one case, I had a large biz-jet parking among C172s!). So, if your FSX AI don’t park as they did in FS9 or they park in spots of the wrong size, check their *aircraft.cfg* wingspan value. Appendix “A” shows both the *.mdl* radius and the proper *aircraft.cfg* wingspan for all the aircraft used in the CYYJ (2007) AI traffic scheme.

## **6. SUPPORT**

The CYYJ (2007) traffic scheme has been developed to be realistic in the context of actual regional traffic in British Columbia. However, save for a few of the aircraft textures, the contents of this package have in large part been authored by others. Consequently, I will not likely be able to provide much in the way of support. If you follow the installation procedure, everything should work. If you don't, if you substitute aircraft or if you modify flight plans, you're on your own.

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### **End User License Agreement (EULA)**

You are granted a free, non-exclusive right solely to install and use BC Regional AI on your computer system(s) for your own personal enjoyment.

You may not:

- upload BC Regional AI, whether or not modified, in whole or in part, to any file distribution system,
- reverse engineer, disassemble or decompile any part of BC Regional AI for any purpose other than to implement improvements for your own personal use, or
- incorporate BC Regional AI in whole or in part into any "freeware", "shareware" or product or facility for which there is a charge of any kind, or use AI Flight Planner or any derivative files in the development, marketing or support of, or incorporate derivative files in, any commercial product or service.

without the my express written permission, which permission will only be available in respect of the repaints attributed to me. Any use of the files or information proprietary to others other than as reasonably intended within BC Regional AI is subject to the terms set out by the respective author, a copy of which terms may be obtained by downloading the relevant archive file(s) containing the file(s) or information of interest. Those archive files are set out in Appendices "A" and "B"

Your use of BC Regional AI is entirely at your own risk. Neither I nor any of the other authors whose works are included accept any liability whatsoever for any damage arising from its use no matter how caused.

By downloading and installing this software, you are deemed to have agreed to the foregoing.

All rights in the aircraft and texture files authored by others are retained by their authors. All other parts of BC Regional AI - © 2008 - Don Grovestine

## APPENDIX A – BC REGIONAL AI AIRCRAFT

The following table identifies the AI aircraft used in the BC Regional AI scheme. All required files are provided as part of BC Regional AI. Most of these files are proprietary to others. They are included in BC Regional AI with the permission of their authors and are provided solely as a convenience to users. Under no circumstances are these files to be decompiled or reverse engineered, or uploaded to any file distribution system except as expressly permitted by their authors. Terms of distribution for these files may be found in the “readme.txt” files included in noted archives (.zip file).

Folder Name (prefaced by “DG-AI_”)	AI Title (prefaced by “DG-AI ”)	M o d	T e x	Archive File	Available From	Author(s)	.mdl Radiu s (m.)	aircraft.cf g Wingspan (ft.)
Airbus A320	A320 (ACA)	x	x	dwai_airbus_a320.zip AI_Airbus_A320.zip	htaimodels.com	Dee Waldron Andrew Langille	22	111.85
Beech B1900C	Beech1900C (PCO-variant)	x	x	ai_beechcraft_A900C.zip	htaimodels.com pco_ai_pkg-dtb.zip	Henry Tomkiewicz Darren Belanger	10	54.5
Beech B1900D	Beech1900D (GLR)	x	x	cdai_b1900v2_pco.zip	avsim.com	Charles Dayhuff Tony Fosler	10	54.5
Beech King Air 100	BeechKA100 (AEA)	x	x	beechcraft_king_air_a100.zip	Avsim.com	Dee Waldron Don Grovestine	9	54.5
Beech King Air 200	BeechKA200 (PCO)	x	x	b200ka.zip pco_be20.zip	htaimodels.com Avsim.com	Henry Tomkiewicz Dan Platt	9	54.5
Boeing 737-700W	B737-700W (WJA-variant)	x	x	aia_737w.zip ai737wja.zip	ai-aardvark.com ai-aardvark.com	David Rawlins Ryan Adams	23	112.6
Boeing 737-800W	B737-800W (WJA)	x	x	aia_738w.zip ai738wja.zip	ai-aardvark.com ai-aardvark.com	David Rawlins Ryan Adams		117.4
Bombardier CRJ-200	CRJ200 (JZA-color)	x	x	cdai_crjv2_aca_jazz.zip (uses updated Model and .air file from CDAI_crj200_ual_nc.zip)	avsim.com	Charles Dayhuff Al Percy Tony Fosler Jonathon Barton	15	69.6
Bombardier CRJ-700	CRJ705 (JZA-color) CRJ700 (UAX)	x	x x	cdai_crj700v2.zip cdai-cr-705_jaz_fleet.zip cdaicrj700skw.zip	avsim.com	Charles Dayhuff David Freed Scott Sherman	16	75.5
Cessna 402B	C402B (BCW)	x	x	ai_cessna_402c.zip	htaimodels.com	Henry Tomkiewicz Darren Belanger	7	37.8
deHavilland DH8A	DH8A (JZA-color))	x	x	pai_install_model_bombardier_dh8a.zip Texture.JZA-Air Canada color DH8B JAZZ.zip	projectai.com projectai.com	FS Painter Jeff Sargent	16	85
deHavilland DH8B	DH8B (QXE)	x	x	pai_install_model_bombardier_dh8b.zip Texture.QXE-Horizon Air DH8B HORIZON AIR.zip	projectai.com projectai.com	FS Painter Todd Disrud	16	85
deHavilland DH8C	DH8C (JZA-color))	x	x	pai_install_model_bombardier_dh8c.zip Texture.JZA-Air Canada color DH8c JAZZ.zip	projectai.com projectai.com	FS Painter Jeff Sargent	16	90
deHavilland DH8D	DH8D (QXE)	x		pai_install_model_bombardier_dh8d.zip	projectai.com	FS Painter	16	93.2

Folder Name (prefaced by "DG-AI_")	AI Title (prefaced by "DG-AI ")	M o d	T e x	Archive File	Available From	Author(s)	.mdl Radiu s (m.)	<i>aircraft.cf</i> <i>g</i> Wingspan (ft.)
			x	Texture.QXE-Horizon Air DH8D HORIZON AIR.zip	projectai.com	Todd Disrud		
Dornier 328	Dornier 328 (GLR)	x		jbai_dornier328_v2.zip	avsim.com	Juan Sebastian Gonzalez Andrew Jarvis Brian Mitchell Andrew Langille		69
			x	jbai_dornier328-gl2.zip	avsim.com			
Embraer ERJ 190	ERJ190 (ACA)	x	x	pai_install_model_embraer_E190.zip Texture.ACA_Air_Canada_EMB190_AIR _CANADAv2.zip	projectai.com projectai.com	Jeff Dobbing Ton van Bochove Frank Bass	22	94.2
Piper NavajoPA-31	Piper PA31Navajo (BCW) Piper PA31Navajo(Orca-reg)	x	x	ai_cessna_402c.zip	htaimodels.com	Henry Tomkiewicz Darren Belanger	7	37.8
Saab 340	Saab340 (PCO)	x	x	pca_saab240.zip	avsim.com	Mike Stone Bashir Ismail	13	70
Shorts SH3-60	SD3-60 (PCO-variant)	x	x x	ai_shorts_sd3-60.zip	htaimodels.com (adjust c/g and payload)	Henry Tomkiewicz John Glossop Don Grovestine	15	75.0



## **APPENDIX B – BC REGIONAL AI FLIGHT PLAN DATA**

The following table identifies the flight plan data used in the BC Regional AI scheme. Much of this data are proprietary to others. They are included in BC Regional AI with the permission of their authors. Under no circumstances are these files to be uploaded to any file distribution system except as expressly permitted by their authors. Terms of distribution for these files may be found in the “readme.txt” files included in noted archives (.zip file).

<u>Airline</u>	<u>Schedule</u>	<u>Archive File</u>	<u>Available From</u>	<u>Author(s)</u>
Air Canada	Summer 2008	- (data extracted from published timetable)		Don Grovestine
Air Canada Jazz	Summer 2008	aig_summer_2008_aircanadajazz.zip	avsim.com	Garry Lewis, AIG Alpha-India Group
Alpha Executive Air	Summer 2008	- (data extracted from website timetable)		Don Grovestine
BC West	Summer 2008	- (data extracted from website timetable)		Don Grovestine
Horizon Air	Summer 2008	- (data extracted from published timetable)		Don Grovestine
Central Mountain Air	Winter 2007-2008	aig_winter_2007-2008_centralmountainair.zip	avsim.com	Sam Cooper, AIG Alpha-India Group
Orca Airways	Summer 2008	- (data extracted from website timetable)		Don Grovestine
Pacific Coastal Airways	Winter 2007-2008	evai_winter_2007-2008_pacificcoastalairlines.zip	avsim.com	Daan 'dustEagle' Callaerts
United Express	Summer 2008	- (data extracted from website timetable)		Don Grovestine
Westjet	Summer 2008	- (data extracted from website timetable)		Don Grovestine