

CYYJ (2007)

for FS9/FS2004 and FSX

USER MANUAL

**An Add-On Covering the Victoria, British Columbia, Canada International Airport
and Surrounding Area as it Appeared in the Early Fall of 2007.**

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1. INTRODUCTION

CYYJ (2007) is a Microsoft® Flight Simulator add-on that portrays the Victoria, British Columbia, Canada international airport (CYYJ) and surrounding area, including the Coast Guard complex at nearby Pat Bay, as it appeared in mid 2007. It operates with both Flight Simulator 2004 (FS9) and Flight Simulator X (FSX).

CYYJ (2007) features:

- an airport definition based on high-resolution aerial photos that:
 - accurately places all runways and taxiways,
 - provides realistic taxiway and apron markings,
 - eliminates the rounded automatically-generated taxiway/runway intersection fillets and inserts triangular turning "gussets" where the latter exist at the real CYYJ, and
 - specifies representative taxiway, runway and approach lighting,
- a terminal building and about sixty other very detailed buildings - all modeled with GMax and "painted" with hand-drawn textures,
- realistic terrain profiles at both ends of Runway 09/27 and on the Runway 13 approach,
- taxiway and apron signage accurate as to both position and content,
- fencing from the fire station in West Camp, past the terminal and around to the east end of Runway 09/27, and
- "drive-through" parking for airlines at the terminal and for GA throughout East Camp and West Camp (if your AI includes ACA, JZA, WJA, QXE and/or PCO, the aircraft will take their usual positions around the main terminal), and
- when the companion CYYJ (2007) Custom AI package is loaded, AI airline traffic based on actual schedules, representative military and civilian AI and "static" AI portraying vintage aircraft on display at the BC Air Museum.

CYYJ (2007) is fully compatible with:

- Ultimate Terrain Canada/Alaska for FS9 and Ultimate Terrain X - Canada for FSX (generally referred to as “Ultimate Terrain” or, simply, “UT”),
- Jon Patch’s and Holger Sandmann’s Victoria+ (vicenh06.zip) for FS9 and with their payware add-on Vancouver+ for both FS9 and FSX,
- Joel Gill’s BC Roads for FS9 (british_columbia_road_system.zip),
- Harvey Janszen’s East Vancouver Island and Gulf Island Coastlines and Landclass (evi04_v13.zip), and
- of course, CYYJ (2007) Custom AI.

but none of them need be installed for proper operation of CYYJ (2007). Regarding Victoria+ for FSX, CYYJ (2007) is an integral part of that add-on, hence, compatibility is not an issue.

2. INSTALLATION

Save CYYJ (2007) Custom AI Traffic Files - Before commencing installation of CYYJ (2007), if you have installed CYYJ (2007) Custom AI, copy the AI traffic files (named *Traffic_CYYJ_ ..._FS9.bgl* and/or *Traffic_CYYJ_ ..._FSX.bgl*) from your *CYYJ\scenery* folder(s) into a temporary folder. These files will be copied back into the *CYYJ\scenery* folder(s) later in the installation process.

Automatic Installation - CYYJ (2007) includes an automatic installer. This installer is a Microsoft NET.Framework application. If NET.Framework is not already installed on your computer, the “redistributable” can be downloaded from the Microsoft website at no charge.

Installer-supported installation of CYYJ (2007) is performed as follows.

(a) Unzip the file *CYYJ_vnn.zip* to a temporary folder. In addition to the CYYJ (2007) installation files, you will see:

- *Drive-Through Parking Tutorial*, and
- *AF2_Viva.bgl*, which may be used to replace the original Viva Base AFCAD.

If you wish to save either of these, they should be moved from the temporary folder before installation. **Do not remove any other files from the temporary folder.**

(b) Run (double-click on) *CYYJ Installer.exe* from the temporary folder. An installation control dialog will appear. (Vista users must have and, depending on circumstances, others may require, administrator privileges when running the installer. If you need, but do not have, administrator privileges, the installer will “complain” when you attempt to install. To run the installer with administrator privileges, right-click on *CYYJ Installer.exe*, select “Run As ...” and select “administrator”.

For those users who cannot or choose not to use the installer, a manual installation procedure is provided below.

(c) For all but certain Vista users, the installer should have determined the location of any installed version(s) of Flight Simulator. If the installer doesn’t find an installed version of Flight Simulator, you may locate it manually using the “Find” button. No selections pertaining to a specific version of Flight Simulator can be made until that version has been located by/for the installer.

(d) Check the applicable checkboxes to select the version(s) of Flight Simulator for which CYYJ (2007) is to be installed. The installer will attempt to locate any previously installed versions of

CYYJ (2007). If it doesn't locate any, it will nominate a folder named *CYYJ (2007)* in the applicable FS *Addon Scenery* folder(s) into which CYYJ (2007) will be installed. However, you may install to any folder. It is recommended that you not install directly to *FSX\Addon Scenery*. If the designated installation folder does not exist, it will be created.

- (e) For most users, the installer will determine if the relevant version(s) of UT, Victoria+ and other compatible products for which special treatment is required (see below) are installed and, if so, offer to perform a compatible installation. If the installer fails to find one of the indicated installed compatible products, you may manually check the applicable checkbox(es). If a compatible product is found but a compatible installation is not wanted, you may uncheck the applicable checkbox. **Please note that the EVI and UT checkboxes must not be checked unless the relevant version of EVI or UT is already installed. Otherwise Flight Simulator may CTD (crash-to-desktop) during startup if CYYJ (2007) is enabled in the Scenery Library.** Note also that certain compatible products are incompatible with each other. For example, if either UT or Vic+ is installed (for FS9), EVI Shoreline is useable; the installer will disable the EVI checkbox. If UT is installed, the BC Roads checkbox is likewise disabled.
- (f) When all selections have been made, click the "Install" button. The installer will ask you to confirm the installation folders and compatibility selections and then will install and configure CYYJ (2007). If installation is to a folder containing an earlier version of CYYJ (2007), that earlier version will be overwritten. You may retain an earlier version of CYYJ (2007) by installing to another folder, but ensure only one of them is enabled in your Scenery Library.
- (g) Should you change your mind about an installation option, simply select the desired new option(s) and click the "Install" button again. When finished, click the "Finish" button. This will delete all the temporary files without putting them in your Recycle Bin. The installer may be run as many times as necessary prior to "Finish"ing.

Manual Installation - Users who do not wish to install the NET.Framework redistributable or who otherwise have difficulty in using the installer may manually install and configure CYYJ (2007) as follows:

- Create a folder called *CYYJ (2007)* or another name of your choice in your Flight Simulator's *Addon Scenery* folder and in it Create a second folder named *CYYJ*.
- Copy the *lscenery* and *ltexture* subfolders in the temporary *FS9 Unique* and/or *FSX Unique* folder(s) to the applicable *CYYJ (2007)\CYYJ* folder(s).
- Add the contents of the *Common\lscenery* and *Common\ltexture* folders to the FS9 and /or FSX *CYYJ\lscenery* and *CYYJ\ltexture* folders, as appropriate.
- For FS9 only, copy the temporary *CYYJ Landclass* folder to the *CYYJ (2007)* folder
- Copy the contents of the *Effects* folder to your FS9 and/or FSX *Effects* folder.
- If compatible products are installed for the target (FS9/FSX) version(s) of Flight Simulator, it may be necessary to copy additional files as set out below.

Compatibility with Other Add-ons - CYYJ (2007) accomplishes compatibility for certain other add-ons using a set of custom files for each such product. These files, which must be copied into the *CYYJ\lscenery* folder(s) result in replacement of certain portions of the road network and/or shoreline in the CYYJ area.

If you used the automatic installer, these steps will already have been preformed for you. However, if you are installing CYYJ (2007) manually and any of the compatible products noted

below are installed on your system, you must manually copy the corresponding compatibility files (just the files) from the designated folder(s) in the *CYYJ\Compatibility Files* folder into your *CYYJ\scenery* folder(s), overwriting any files of the same name. If more than one set of compatibility files are to be copied, apply them in the same order as below, e.g., for FS9, *compatibility files for VicPlus* last. (The compatibility files for the default system are included in the files you have already installed. However, once compatibility files for other add-ons have been installed, the files for the default roads and shorelines must be re-installed to revert to default operation or to change to a different set of add-ons.)

For FS9, the compatibility file folders in *CYYJ (2007)* are named as follows:

- *compatibility files for Default* restores default roads and shoreline
- *compatibility files for BCRoads* replaces roads only
- *compatibility files for EVI Shoreline* replaces shoreline only
- *compatibility files for UTCANAK* replaces roads and shoreline
- *compatibility files for VicPlus* replaces shoreline only

For FSX, the folders are:

- *compatibility files for DefaultX* restores default roads and shoreline
- *compatibility files for UTXCanada* restores default roads and shoreline

Be sure to copy only the files for the installed and enabled other add-ons. **If the EVI or UT-related files are copied and the relevant version of EVI or UT is not installed, Flight Simulator may CTD (crash-to-desktop).**

Restore CYYJ (2007) Custom AI Traffic Files – If you saved the CYYJ (2007) Custom AI traffic files as suggested above, they should now be copied back to the *CYYJ\scenery* folder.

This completes the installation of CYYJ (2007). Now go flying!

Later Installation of Other Add-ons - If you later install other products that affect the CYYJ area, you may need to copy the applicable set of *compatibility files for ...* compatibility files from the *CYYJ\Compatibility Files* folder to the relevant *CYYJ\scenery* folder as in “Compatibility with Other Add-ons” above. Similarly, you may revert to the default configuration by copying the files from the folders *compatibility files for Default* (or *DefaultX*) as applicable.

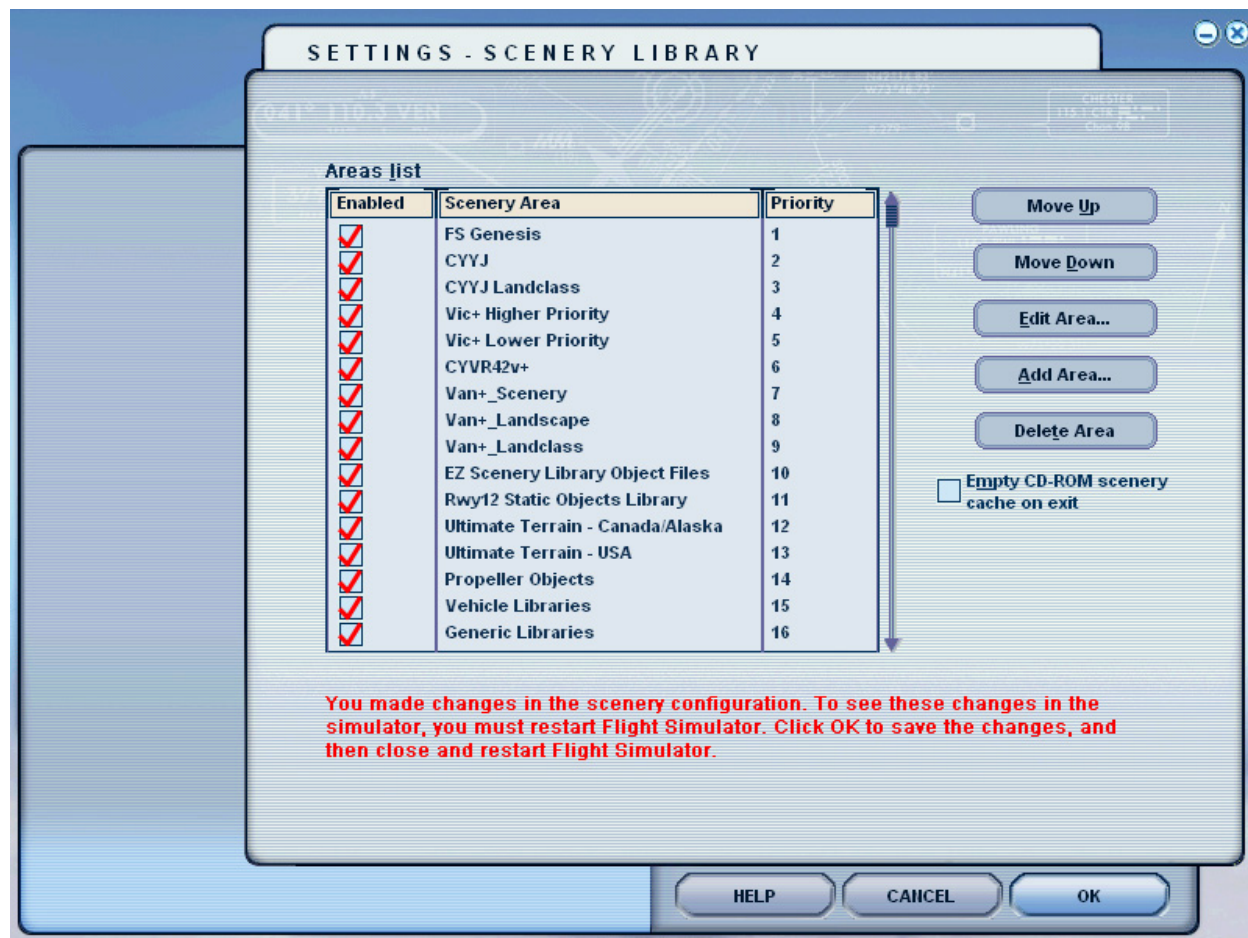
Viva Base - If you attempt to use the original Viva Base at Victoria International by Lars Hoyer, Jesse Wheeler and Ken Peters (viva_cyyj.zip) in association with CYYJ (2007), its features will appear out of position due their being based on the FS9 default AFCAD which contained significant positional errors. A CYYJ (2007)-compatible AFCAD for Viva base is available on the CYYJ (2007) website <http://members.shaw.ca/cyyj2007> and is also included in the CYYJ (2007) installation file. I understand that a new CYYJ (2007)-compatible version of Viva Base is under development. Please check the Viva website for the latest information.

3. SCENERY LIBRARY

Add to your Scenery Library the folder *CYYJ* and, for FS9 only, if desired, *CYYJ Landclass* and enable this/these entries. (*CYYJ Landclass* replaces a few landclass tiles around the airport. If you're happy with your current FS9 landclass, you don't need *CYYJ Landclass*.)

The recommended Scenery Library configuration for FS9/FS2004 is shown below. The FSX Scenery Library configuration will be nearly identical if all the illustrated add-ons are installed.

The CYYJ (2007) Scenery Library entry(ies) **must** be placed above Victoria+ and Vancouver+ if either of these latter add-ons is installed. You must also place them above Ultimate Terrain or any other scenery that includes terrain, roads and/or shorelines. If you have other Victoria-area add-ons not shown below, their position in the Scenery Library relative to CYYJ (2007) will depend on what they do. Please refer their documentation. In general, unless they are intended to affect CYYJ (2007) specifically, they should be of lower priority than, i.e., be below, CYYJ (2007).



Recommended Scenery Library Configuration

4. MESH/TERRAIN/TMVL SETTING

The default terrain mesh in both FS9 and FSX around CYYJ is “lacking”. Victoria+ includes 19m. mesh that covers the CYYJ area. For FS9 only, if Victoria+ is not installed, you may obtain the Vancouver Island portion of FS Genesis’ Cordillera Canada 38 m. mesh at no charge from http://files.fsgenesis.net/freefiles/dem38m_can_vancouver.zip. The standalone version of CYYJ (2007) for FSX includes 19m. mesh for the northern portion of the Saanich peninsula; you will, however, see a discontinuity in elevation a couple of miles south of the airport. Victoria+ for FSX includes both a high-resolution mesh as well as the CYYJ implementation from CYYJ (2007).

With FS9, if you use 38m. mesh, you should set the *fs9.cfg* TERRAIN_MAX_VERTEX_LEVEL (TMVL) entry to 20. If either Victoria+ or Vancouver+ is installed or other 19m. mesh for the general area is used, set TMVL to 21. (The default setting is 19.) CYYJ (2007) will run irrespective of which TMVL setting you use. However, unless you use the recommended setting, the terrain profiles - especially on the approaches to Runways 09 and 31 and around the CCGS complex - may not be very realistic. (*fs9.cfg* is located in the folder *C:\Documents and Settings\<your user name>\Application Data\Microsoft\FS9*. To change TERRAIN_MAX_VERTEX_LEVEL:

- **close FS9,**
- locate *fs9.cfg* and open it with Notepad or another text editor,
- find the section named [TERRAIN],
- change the TERRAIN_MAX_VERTEX_LEVEL setting as appropriate,
- save the file, and
- restart FS9.)

For FSX, all terrain controls are available under “Settings”.

If you do use FS Genesis’ or any other medium-resolution third-party mesh, you should include an entry for it at the top of your Scenery Library. This will ensure it is automatically replaced by any higher-resolution mesh covering that area that might also be loaded as part of an add-on (such as the 19m mesh in Victoria+ or Vancouver+).

5. SCENERY DENSITY

The Flight Simulator Scenery Density setting causes display of CYYJ (2007) scenery as follows:

- VERY_SPARSE – airfield facilities only,
- SPARSE – main terminal and main taxiway/apron-side buildings ,
- NORMAL – all buildings, apron markings and illumination,
- DENSE –ground-handling equipment and additional CYYJ facilities such as the VFC fueling station and the main terminal parking lot walkways and “flowers”,
- VERY_DENSE – fencing and static aircraft, and
- EXTREMELY DENSE – people and parked cars.

The FPS impact from VERY SPARSE to EXTREMELY DENSE is about 30%, with the greatest interim impacts being, not unexpectedly, between VERY SPARSE and SPARSE and between SPARSE and NORMAL.

6. LIBRARY-BASED SCENERY/STATIC DISPLAYS

CYYJ (2007) uses library-based scenery for its static aircraft, ground and baggage handling equipment, vehicles and certain airfield facilities. In addition to Flight Simulator’s generic libraries, CYYJ (2007)’s static-display objects come from the following third-party libraries:

- *add_SeevKahn.bgl*, contained in *rwy12_lib1_v1.2.zip*, by Seev Kahn (also available in EZ_Scenery format under the filename *ga_planes-01.zip*),
- *206B.bgl* and *500D.bg*, contained in *rwy12_lib1_v1.2.zip*, by Chris O'Donnell and M. Allen Richards,
- *FinneyGround_VERT_GSE.bgl*, contained in *fg_vert_gse.zip*, by Robert Finnegan and Gary Mills,
- *gw_People*, contained in *rwy12_lib2_v1.2.zip*, by Geoff Williams and Martin Strong, and

- *extra_objects.bgl*, contained in *rwyl2_lib3_v1.2.zip*, by Lars Hoyer and Irvin McIntyre.

However, with the permission of their respective authors, all the required models and textures from these libraries are incorporated in CYYJ (2007), so you need not have those libraries installed on your system. (But, no problem if you do.) Many of the associated textures have also been reduced in complexity to improve performance. Thanks to the various library providers for allowing this.

7. CUSTOMIZATION OF CYYJ (2007)

My goal was to have CYYJ (2007) be a faithful representation of the Victoria International Airport as it existed in mid 2007. But, there are certain aspects of CYYJ (2007) that have little to do with that principle. There is no reason why those aspects, primarily static scenery, could not vary widely from my implementation. Indeed, user satisfaction in these areas is highly subjective. As well, depending on skills and inclinations, certain users may wish to replace individual buildings with more detailed versions.

The design of CYYJ (2007) is highly partitioned. Every building is (or, in few cases, groups of related buildings/facilities are) contained in a separate *.mdl* file which, together with the files of related/nearby buildings, are compiled into a “regional” *.bgl*. The individual *.mdl* files are accessible by de-compiling the relevant regional *.bgl*. Ground illumination for night flying is in a separate *.bgl* file for each building. File names are largely self-explanatory.

Other static scenery is split across five separate files in the *CYYJ\scenery* folder:

- terminal ground-handling equipment (*obj_GroundHandling.bgl*),
- static aircraft (*obj_StaticAircraft.bgl*),
- airport vehicles (*obj_AirportVehicles.bgl*),
- other vehicles (*obj_Cars-Trucks.bgl*), and
- people (*obj_People.bgl*).

These files, in any combination, may be supplemented or replaced with additional user-created files generated with such tools as EZ-Scenery, Rwy 12 or the like – or, for more skilled users, other FS9 development tools. To do so, disable (add the file suffix *.XXX*) in, or delete from, the *CYYJ\scenery* folder the affected CYYJ (2007) files. Replacement or supplementary files may be named as you wish. Those files too may be placed in the *CYYJ\scenery* and *texture* folders. However, for ease of future upgrade of CYYJ (2007), you may wish to place them in another folder enabled in your Scenery Library.

Several areas of the CYYJ (2007) design required significant compromise. Generally, these compromises are “hard-wired” and not adjustable by users. One that is, however, and that will be of interest to night flyers is the size of the obstruction lights. In order for the obstruction lights to be seen at a realistic distance, they had to be very large – appearing quite artificial close-up. Making them of a size that looked reasonable (to me) close-up significantly limited their visible range. If you don’t like my choice of light diameter (1.5m), feel free to adjust it by changing the *X Scale* and *Y Scale* values under the header *[Particle.0]* in the included effects file *fx_ObsLight_CYYJ.fx*. (Note: the new value must be entered twice, separated by a comma.) However, unless you are very familiar with effect parameters, I recommend you don’t attempt to change anything else in that file. As well, you should back-up the file before changing it.

Some users may be tempted to modify my airport definition files. I strongly recommend you do not modify *AF2_CYYJ.bgl* - *AF2_CYYJ_X.bgl* in the FSX version of CYYJ (2007). Instead, make a copy of the original file, name it something else and enter your changes into that file. Delete from the new file, completely, those parts of the original airport definition that are to continue to be used;

then, with “[DeleteAirport]” statements in the new file, override the sections of the original file to be replaced. So long as the replaced sections are properly overridden and there is no other duplication, the original definition and your new file should co-exist nicely. If you intend simply to add to CYYJ (2007) in a manner that doesn’t require changes to the current airport definition (e.g., adding a new taxiway or apron not for general use), I recommend you define your additions as a new airport with a fictitious ICAO identifier. Otherwise, if I change the airport definition in future CYYJ (2007) upgrades, you’ll have to re-enter all your modifications.

8. IDIOSYNCRACIES / KNOWN ISSUES

Design/performance considerations dictated the following intentional omissions or operating idiosyncracies in CYYJ (2007):

- Lamp standards for streetlights, for the floodlights at the fuel tank farm or for the parking illumination in the main terminal parking lot have not been modeled. I felt that the FPS impact of including these lamp standards would far outweigh the marginal benefit of the extra scenery in the daytime.
- There is a significant discontinuity in ground elevation in the CCGS area in Pat Bay along the eastern edge of the large paved area. This is unavoidable, being required to minimize flickering/shimmering of the very large ground plane in the area.
- As at the real CYYJ, all AI aircraft parking is “drive-through”, implemented using two invisible, overlay taxiway networks - one for arriving traffic, the other for departures. Consequently, even though arriving and departing AI traffic in close proximity may appear to be on the same taxiway and you would expect one to give way, they are not on the same taxiway as far as Flight Simulator is concerned. Hence, they may appear to collide. This is the price for drive-through parking.
- If you do decompile *AF2_CYYJ.bgl* and later re-compile it with *BGL_Comp.exe*, *BGL_Comp.exe* will report an error of the nature “INTERNAL COMPILER ERROR: #____: Taxi path #___ references a non-existent Runway #___ at airport CYYJ”. This is due to the short section of type “Runway” taxipath just west of the threshold of Runway 13. That section of taxipath is required to stop AI destined for the terminal turning right up Taxiway “K” (as the first exit). The error message is a warning only; the file will have compiled normally. Also, after re-compiling with BGLComp, many of the apron edge lights will no longer work. Those lights may be turned back on by opening the newly-compiled .bgl with ADCAD 2.21 and slightly changing the position of each inoperative light. This latter problem is due to the default taxiway light separation imposed by the FS9 and FSX BGL_Comp compilers. (AFCAD 2.21 uses its own compiler which avoids this problem.)
- The single parking spot to the south-west of the military hangar in West Camp is not connected to the taxiway system. I use this for a Sea King helicopter (eye candy) in static display. Neither are the parking spots for the “static” AI at the BC Air Museum.

9. SUPPORT

CYYJ (2007) is freeware. Consequently, support will be limited. Nonetheless, I would like to be made aware of any problems you discover in CYYJ (2007) and will make reasonable effort to respond. As well, I welcome your comments suggestions for improvements and, where warranted, your criticisms.

The website <http://members.shaw.ca/cyyj2007> is the primary mechanism for delivering support for CYYJ (2007). Among other things, it documents known problems with the most current release

and, where available, provides workarounds and, where appropriate, full or partial interim releases. As well, it lists features that are currently planned for the next release. Please check the site before reporting any problems or suggesting new features.

10. ACKNOWLEDGEMENTS

In addition to the library authors already mentioned, thanks (in no particular order) to Peter van der Veen for AIFPC, Lee Swordy for AFACD 2.21 and TTools, Luis Sa for SBuilder and SBuilderX, Jim Keir for LWM Viewer, Jon Masterson for ADE, Tom Hiscox for SceneGenX, Martin Wright for DTXBmp, Arno Gerretsen for MDL Tweaker and for the animated windsocks, Richard Ludowise for TCalc and TCalcX and his excellent LWM Tutorial, and Jon Masterson and Christian Stock for their SBuilder and TMF tutorials – all of which were used in the development of CYYJ (2007).

Thanks also to British Columbia's Capital Regional District for their CRD Natural Areas Atlas website from which I accessed the high-resolution air photos, to the District of North Saanich who provided me with ground elevation data, to the Victoria Airport Authority who provided me detailed airport information and allowed me airside access for photos, and lastly to Jon Patch and Holger Sandmann. Jon contributed the Pat Bay jetty/breakwater complex and the fire trucks to the project, and both were a source of guidance and inspiration.

Enjoy,
Don Grovestine,
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End User License Agreement (EULA)

You are granted a free, non-exclusive right solely to install and use CYYJ (2007) on your computer system(s).

You may not:

- upload CYYJ (2007), whether or not modified, in whole or in part, to any file distribution system,
- reverse engineer, disassemble or decompile any part of CYYJ (2007) for any purpose other than to implement improvements for your own personal use, or
- incorporate CYYJ (2007) in whole or in part into any commercial product or facility, "shareware" or "freeware"

without the express written permission of me, the author.

Your use of CYYJ (2007) is entirely at your own risk. I accept no 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.

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