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**To control the gauge from Microsoft Flight Simulator or X-Plane some third party payware software may be needed depending on the flight sim version.*

This kit contains all parts to build either one large or one small aircraft gauge with one or two pointers of different shape out of the following parts: 1 large front ring, 1 small front ring, 1 large optical, 1 small optical, 1 housing, 1 set of screws, bolts and nuts, all the different pointers you will ever need, 1 set of adhesive pointer legends, 74 different faceplates, 1 USB microcontroller PCB including lamp for lighting, 1 USB cable, 1 illustrated user manual. There are no special tools required to assemble this gauge and no technical knowledge is required.

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Say goodbye to boring default scenery forever! MegaSceneryX transforms your Microsoft Flight Simulator X Scenery World from artificial… to REAL! MegaSceneryX is created from high resolution aerial photos. What you get is not just a recreation of the real world but instead the actual real world ported into Microsoft Flight Simulator X for simulated flight over a world that's so real you'll be amazed!

MegaSceneryX lets you experience all the landmarks and features of the area covered and enables you to fly real VFR – Day and Night.

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- Day and Night Scenery. Soar and explore the real world - during the day and at night!
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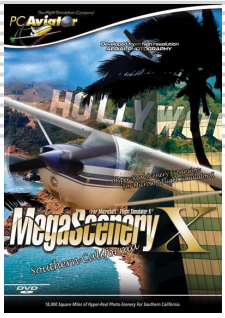

At 18,000 square miles this new title for Flight Simulator X displays scenery at 1.19 meters per pixel - 16 times the resolution of Flight Simulator 2004. MegaSceneryX for FSX is now hyper-real and FINALLY gives you the scenery world you've dreamed of flying on your PC.... that is, a scenery world that is pretty much as real as real life itself!

Famous Places Covered: Los Angeles; San Diego; Palm Springs; San Gabriel; San Bernadino; Santa Ana Mountains; Big Bear, Arrowhead and Salton lakes; And everything else in between!
50 Instrument Equipped Airports & Numerous Non Instrument Major Airports
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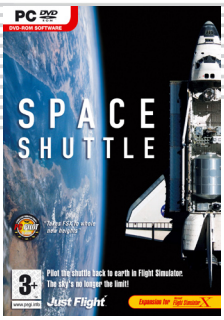
Space Shuttle

Takes FSX To New Heights!

FSX



This unique expansion for Flight Simulator X takes Flight Simulation into orbit. Now, armchair pilots can swap their headsets for space suits and bring the Shuttle back from space to a safe landfall at Kennedy Space Center.

Panels include hi-res 2D, virtual cockpit, Commander view 2D panel, HUD, exterior model animation control panel, simicons panel, radio panel and GPS panels. The package includes the radio aids that provide original Space Shuttle -19°/-17° steep OGS glide slope and shallow glide slope for runway 15 and 33 at the NASA Shuttle Landing Facility (X68) in Florida. Software features a video 'launch' to start the program and set the scene for the journey back to terra firma. Amazing animations include payload bay doors, SRMS (Shuttle Remote Manipulator System), drag chute, radiators and landing gear.

CODE:	PRICE: US$39.95 // AUD$Call
JFSS	*SUB PRICE: US$37.95 // AUD$Call

Vox ATC-X Deluxe

Finally... Voice Recognition For Talking To Microsoft Flight Simulator X Air Traffic Control

FSX

You can now talk to the controllers using standard ATC phraseology and what you say will be heard!

Real voice recognition and controllers that adhere to real-world ATC procedures... using both FAA and European procedures that automatically switch as you cross the Atlantic.

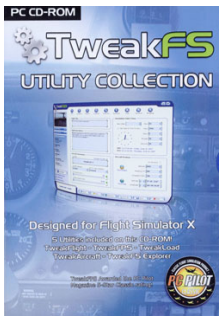
VoxATC works with the Microsoft integrated voice recognition and text to speech engines that are already included as part of Windows XP and Vista. In addition, the product includes two licensed 16-bit voices from AT&T Natural Voice. These voices enhance the text-to-speech so it sounds just as natural as recorded WAV voices in other ATC products that do not include voice recognition.

CODE:	PRICE: US$74.95 // AUD$104.95
VOXATCX	*SUB PRICE: US$71.20 // AUD$99.70

TweakFS Utility Collection for FSX

Five Great FSX Tweaking Tools On One CD!

FSX



TweakFS Utility Collection brings together what is arguably the most useful ensemble of FSX tweaking software ever launched under the one banner.

As a group these five unique applications each have a different scope and purpose, but come with a consistent look and feel. Between them they can handle well over 1000 settings and variables in FSX.

All the tools are designed with one important principle in mind - a one-click "restore from backup" function. This means an adjustment can be applied with complete impunity and there is always the "bailout" option if there are any "funnies", the one justifiable concern that holds many back from making changes to their FS setup.

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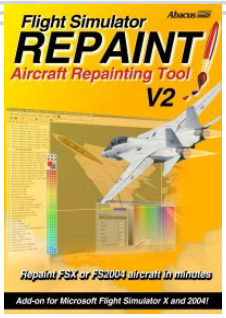

The Absolute Simplest Way To Change The Look Your Flight Simulator Aircraft!

FSX FS9

With FS Repaint you'll be able to easily make impressive visual changes to your favorite virtual aircraft in just minutes.

FS Repaint is the simplest way to change the visual appearance of your aircraft. You can easily change the look of your aircraft in a few easy steps:

1. Load an existing aircraft
2. Change the paint scheme (modify the textures)
3. View the modifications immediately in 3D view
4. Save the repainted aircraft
5. Fly your new aircraft!

CODE:	PRICE:	
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Cessna 441 Conquest II For FSX

A Luxury Cabin Class, Twin Turboprop

FSX FS9

The Cessna 441 Conquest II is a luxury cabin class, twin turboprop aircraft that cruises in excess of 300 mph and at an altitude of up to 35,000 ft. Flight 1's 441 Conquest II uses high definition gauges and panel systems with unique panel perspective views. Combined with accurate flight modeling and state of the art 3-D modeling, the 441 Conquest II is the premier twin turboprop aircraft for FSX and FS2004.

The 441 Conquest II also includes Flight One's proprietary Text-o-Matic aircraft repainting utility. Text-o-Matic allows you to download additional user created paint schemes and install them on your system with just a couple mouse-clicks. The 441 Conquest II package also includes extensive documentation, checklists, specifications and a step-by-step tutorial to get you flying in no time.

CODE:	PRICE:	
C441X		US$29.95 // AUD$49.95
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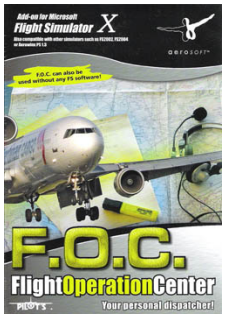
Flight Operation Center



The Ultimate Flight Planner For FSX And FS2004/2002!

FSX FS9

Flight Operation Center is a highly sophisticated flight planning tool incorporating many professional features normally only seen in real world airline operations.

Features Include:

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- Worldwide Navigation Database, including SID-STAR routes, Airways, Waypoints, Navigational Aids, and many more features
- Send flight plans to MS Flight Simulator X, 2004 and 2002 at the touch of a button

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FS Discover

A Tour Guide For FSX And FS2004

FSX FS9

FSDiscover! is a Flight Simulator sightseeing guide, a navigation tool, and a simple flight planner, all in one single product for Flight Simulator X and Flight Simulator 2004. FSDiscover! is preloaded with over 3.6 million geographic names from all over the world. There are also 1900 specialized points of interest for FSX, and 600 specialized points of interest for FS2004, including all the "Easter eggs" and unique landmark buildings within these simulators.

Some of the geographic features that will be identified include:
Mountains, Streams, Valleys, Beaches, Rapids, Parks, Lakes, Islands, Harbors, Glaciers, Forests, Waterfalls, Canals, Bridges, Dams, and much more!

The planning features allow you to plan simple elaborate sightseeing excursions!

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FSDISC		US$29.95 // AUD$44.95
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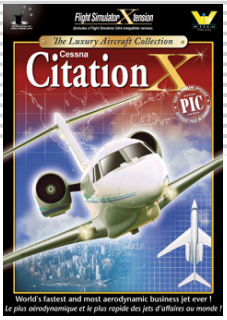

No business jet gets you to your destination faster than the Citation X. This amazing software brings highly sophisticated 'Jet Set' flavour into your preferred simulator!

Once onboard, whichever your piloting knowledge level is, you will be astonished by its elegantly furnished cabin while comfortably flying at nearly supersonic speed over the oceans. Jump back in the Pilot seat and you will be amazed by all latest aeronautical technologies embedded in the cockpit. Some of these don't even exist in the simulation world yet.

Special animations and features, combined with high quality graphics and detailed systems simulation make this the business jet add-on of the year!

CODE:	PRICE:	
WFCITX		US$44.95 // AUD$69.95
	*SUB PRICE:	US$42.70 // AUD$66.45

FS Global X 2008

Hi-Resolution Terrain Mesh For The Entire Earth On 6 DVD Discs!

FSX FS9

FS Global 2008 is a new product. It uses the NEWEST SRTM data (released by NASA in late 2006). Resolution in some parts has been improved to 19m.
This is 4 times better than FS Global 2005 and up to 63 times better than FS itself!

FS Global 2008 comes in two versions in one box. One version is for FS 2004 and one for FSX. The new scenery concepts in FSX provide a more detailed and realistic far-distance view, textures adapt better to the mesh, the FSX default scenery is more precise and causes less (optical) conflicts. This results in some of the best looking mountain detail ever seen in the simulator!

A highly recommended product offering excellent value for money!

CODE:	PRICE:	
FSGLOB2008		US$64.95 // AUD$89.95
	*SUB PRICE:	US$61.70 // AUD$85.45

DC-10 Collection

15 Model Variations With 38 Worldwide Liveries!

FSX FS9

Featuring a massive 38 high-quality worldwide liveries spread over 15 model variations, the DC-10 is the latest release in Just Flight's F-Lite range. This package has been designed by the experts at CLS (Commercial Level Simulations) to be both very high in quality and yet easy to operate. Giving you the highest quality of model design and textures, animations and flight model characteristics at an affordable price, this has to be a great deal!

Also included as a bonus in this package is the USAF KC-10A Extender and Royal Dutch Air Force KDC-10A air-to-air refuelling tankers with animated fuel drogues and boom! The manual includes a tutorial to ensure that your flights go smoothly.

CODE:	PRICE:	
JFDC10		US$42.95 // AUD$64.95
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Microsoft Flight Simulator X: Deluxe Edition

Latest Generation Flight Simulator With Added Deluxe Edition Bonuses!

"Flight Simulator X" is the culmination of nearly 25 years of the landmark "Flight Simulator" franchise and the most significant addition to date. "Flight Simulator X" presents players with a wide array of new aircraft to fly in a beautifully rich and believable world which contains greater detail than past entries in the franchise. Players will be able to experience what it is like to be a pilot and have real distractions, to shade their eyes from the glare of reflective paint and the glint from glass and chrome. Players will enjoy the opportunity to fly their dream aircraft, from classic seaplanes like the de Havilland Beaver and Grumman Goose to the Cessna 172 there is a plane for every terrain and every player.

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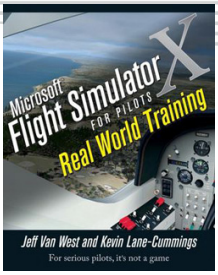
Microsoft Flight Simulator X For Pilots: Real World Training

Master The Skills Of Flight With This "Real World" Training Guide



Aspiring pilots will learn the skills of flight, how to master Flight Simulator, and how to utilize the software as a learning tool towards their pilot's licenses. Those who already have their real-world wings will benefit from guidance on how Flight Simulator X can be used as a continuing learning tool, how to simulate real-world emergencies, and how to use it for training towards advanced certifications.

This Massive Book weighs in at 725 pages and is packed with detailed information on using Flight Simulator X for training. It is truly a massive resource for anyone serious about using simulators to further their piloting skills!

CODE:	PRICE:	
BKFSXRWT	US$29.95 // AUD$44.95	
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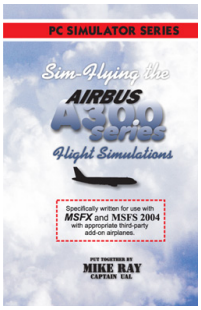
Flying the Airbus A300 Series Flight Simulators

Mike Ray's Newest Book Covering The Airbus A300 Aircraft Series!



Following on from the tremendous success of his Boeing 700 series of flight simulator manuals, Captain Mike Ray has done it again - this time for the ultra modern Airbus A300 series of airliners and again, specifically for Flight Simulator Pilots of both Flight Simulator X and Flight Simulator 2004.

Now learn every single aspect of what you want and need to know about flying Airbus aircraft, particularly such highly detailed add ons such as Wilco's Airbus Series Volume 1. This is the definitive Airbus manual for Flight Simulator pilots and again brought to you in the unique and entertaining style that entices you to actively learn and absorb all aspects of flying these modern Fly-By-Wire aircraft. It's applicable to all aircraft in the A300 series.

CODE:	PRICE:	
BKA300	US$49.95 // AUD$64.95	
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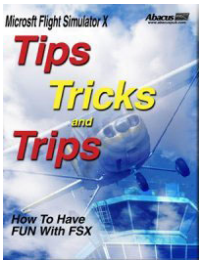
Tips, Tricks & Trips For Microsoft Flight Simulator X

Have Even More Fun With FSX



Adam Howe and Scott Slaughter, two flight sim experts who also have many years of writing experience, are putting their thoughts to pen for their new book - Tips, Tricks & Trips for Flight Simulator X.

This is not a users manual for Flight Simlulator X. Instead, it's a collection of "right to the point" articles that will help you run FSX faster, better, easier. In short, you'll have more fun!.

Tips, Tricks & Trips presents topics that you won't find elsewhere. The aim of this new book is to put the complexity to rest so that you can enjoy the Flight Simulator experience rather than fight it. 240 pages.

CODE:	PRICE:	
BKTTT	US$26.95 // AUD$39.95	
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The medium haul route, on the B757-200, will take you from Bologna to Marsa Alam with cockpit presentations, walkaround and more (90mins).

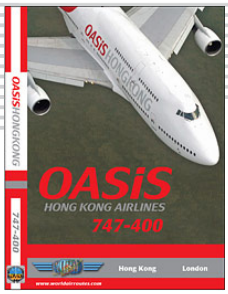
The short haul route, on the B737-400, will take you from Bologna to Rome via Bari (20mins).

Running Time: 181 minutes

CODE:	PRICE:	
DVDBLUEPAN		US$29.95 // AUD$47.95
	*SUB PRICE:	US$28.45 // AUD$45.55

Just Planes DVD: Oasis B747-400

Hong Kong Airlines



In the cockpit of the B747-400 you will fly the airline's maiden route from Hong Kong to London and back. After a company presentation by the CEO, Flight Ops and Ground Ops Managers you'll descend from the mountain to CLK Airport in the cable car for some amazing views of the Airport. We then meet the crew who brief us on the flight are ready for takeoff in the cockpit of the 747-400.

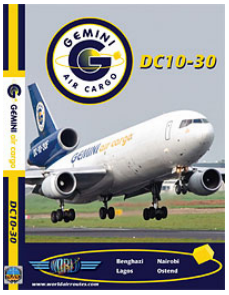
Both Captains give a very extensive presentation of the aircraft, the route, the operation and many other details pertaining to the airline and last, but certainly not least, we take to the sky for the first ever air to air footage of a 747 over the English coast!

Running Time: 200 minutes

CODE:	PRICE:	
DVDOASIS		US$29.95 // AUD$44.95
	*SUB PRICE:	US$28.45 // AUD$42.70

Just Planes DVD: Gemini DC-10 Cargo

Benghazi - Nairobi - Lagos - Ostend



The airline was founded in 1995 and now operates a fleet of DC10s and MD11s for customers all over the globe.

This program follows an aircraft on a rotation from Belgium to 3 African countries with stops in Nigeria, Kenya and Libya.

The pilots go over their DC10 in detail from the walkaround on the ground to the cockpit pilot and flight engineer presentations, flight plan loading, fuel system and much more. They also brief the departures and arrivals so you can follow the takeoffs and arrivals/approaches.

Running Time: 186 minutes

CODE:	PRICE:	
DVDGEMINI		US$29.95 // AUD$44.95
	*SUB PRICE:	US$28.45 // AUD$42.70

Just Planes DVD: Alaska Airlines

A Tribute To The 737-200

Climb on board in the cockpit for a series of flights from Anchorage to Bethel, Dillingham, King Salmon, the remove island of Adak and a special charter to Red Dog Mine.

You will follow the pilots at work as they prepare and operate the aircraft. They give you continuous briefings about the flights, their duties and some very interesting stories they've experienced!

A bonus DVD "The Spirit of the 737-200" is included in this package at no additional charge!

Running Time: 245 minutes

CODE:	PRICE:	
DVDALASKA		US$29.95 // AUD$44.95
	*SUB PRICE:	US$28.45 // AUD$42.70

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CODE:	PRICE:	
CHFSYOKEUSB		US$129.95 // AUD$259.95
	*SUB PRICE:	US$123.45 // AUD$246.95

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CODE:	PRICE:	
CHPROPEDUSB		US$129.95 // AUD$239.95
	*SUB PRICE:	US$123.45 // AUD$227.95

Matrox TripleHead2Go Digital Edition

Experience Surround Graphics!

Bridge the gap between virtual reality and reality. Matrox TripleHead2Go is a small, black box that adds three monitors to your system and delivers the most immersive flight sim experience ever by offering a wider field of view. This panoramic view of the sim fully engages your peripheral vision on the side displays with the main point of focus on the center display for a more realistic flight experience.

TripleHead2Go Digital Edition is an external multi-display upgrade device that connects via the dual-link DVI or analog output of your system and can support both analog and digital monitors.

CODE:	PRICE:	
MTH2GD		US$329.95 // AUD$499.95
	*SUB PRICE:	US$313.45 // AUD$474.95

TrackIR 4 Professional

The Ultimate Head Tracking Accessory For Flight Simulation And Gaming, Allowing You To Realistically Pan Your View With Head Movements!

Imagine controlling your field of view in flight simulators, first person shooters, racing sims and many other types of games by simply looking around!

The trackIR uses infrared light to track your head movements in much the same way as ultra-expensive targeting systems used by the military. As you move your head, the trackIR sends a real-time stream of instructions to your computer via USB to move the mouse pointer or pan your view in game play. Compatible with many sims and games including Microsoft Flight Simulator, Lock On etc.

CODE:	PRICE:	
TRKIR4PRO		US$179.95 // AUD$254.95
	*SUB PRICE:	US$170.95 // AUD$242.20

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Aircraft Collection

6 High Quality General Aviation Aircraft For FS2004

The Aircraft Collection pack from the team at FranceVFR contains the following aircraft:
Beechcraft Twin Bonanza, APM20 Lionceau, De Havilland Twin Otter, Socata Rallye, Socata TB9/10/20, Stampe & Vertongen.

Aircraft Features:

- Detailed 2D and virtual 3D cockpit
- Numerous variations (engines, floats, skis) etc
- Numerous liveries
- Detailed visual documentation for every instruments of each panel
- Detailed checklist (French) for each aircraft
- Additional liveries available for free from the FranceVFR website
- All available via the one download!

SKU:	PRICE:	FILESIZE:
DL-FVFRAC	US$30.99	119Mb

Flight Pyrenees: Base Pack

Stunning PhotoScenery For The Pyrenees Mountains...

The FlightPyrenees Orientales BasePack covers the Eastern part of French Pyrenees (about 16 000 km sqr.) with photorealistic textures.
Each of the default airport platforms on the scenery have been reworked in order to closely fit the phototexture with precisely aligned taxiways, buildings, and objects, greatly enhancing these from the standard Flight Simulator 2004 fare. Therefore, the virtual pilot can experience both VFR and IFR flights within a very large zone with a degree of realism never attained before in this region.
The "Flight" series has a modular approach perfectly fitting together the photorealistic coverage and the optimization of the elements of decor such as detailed airports. The BasePack is an optimized photoscenery package where all the default scenery elements have been retreated.

SKU:	PRICE:	FILESIZE:
DL-FVFRPOB	US$29.99	463Mb

Island Scenery - St Maarten-St Barth

Stunning Island Photo-Scenery For St Maarten/St Barth

The scenery covers the St-Marteen and St-Barthelemy islands with photorealistic textures, including a full and specific autogen coverage. The 3 airports include detailed building and a realistic AI traffic based on real aircraft and liveries.

- Full photoscenery coverage for all the island
- Textures made from high quality aerial photography
- Customized autogen (houses and trees) for the whole scenery
- Custom and very high resolution mesh for the whole region (LOD11)
- Watercoast faithfully represented and optimized with coast flattening
- 3 Detailed airports included with night textures
- Many standard and customized 3D objects

SKU:	PRICE:	FILESIZE:
DL-FVFRSTM	US$21.99	57Mb

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Fly Mach 4.65 At 350,000 Feet In The X-15!

The excitement of high-speed flight at the edge of space with the legendary X-15 rocket plane, now available for Microsoft Flight Simulator.

X-15-2/3 for Flight Simulator Key Features:

- Custom X-15 flight model to simulate rocket-powered high-speed and high-altitude flight in FS2004 and FSX
- Good maneuvrability at supersonic speeds and excellent gliding capabilities
- Highly detailed 3D models with more than 300 parts, 60 animations, reflective textures and unique markings, based on archive material
- Fully functional instrument panels with 200 custom gauges and systems to simulate almost every step and procedure required in a typical X-15 mission
- Spectacular visual effects including rocket engine flames, APU exhaust etc.
- Includes a comprehensive 100-page user manual inspired from the original X-15 utility flight manuals, in a printable PDF format!

SKU:	PRICE:	US$34.99
DL-X152/3	FILESIZE:	89Mb

Beech V35 Bonanza - V-Tail

Your Own Beechcraft V35 V-Tail Bonanza To Fly In FSX And 2004

The aircraft in this product is a true-to-life replica of the model V35 C-Tail Bonanza. A throaty and lay-you-back-in-your-seat 285 Horsepower Continental engine with a 170 knot cruise speed and an 18,000 service ceiling gives you a high performance tourer to cruise the flight simulator skies.

This product recreates all aspects of the real world Bonanza V35 for you to fly in FSX and 2004 – all the way from minute 2D and 3D cockpit detail, to external surfaces, to authentic engine sounds through to exact flight modeling.

The Bonanza is a favorite in the real world and also a favorite in the Flight Simulator world. Here's your chance to add the Bonanza to your Microsoft Flight Simulator aircraft hangar – for a lot less than the $400,000 price tag!

SKU:	PRICE:	US$17.00
DL-CARV35	FILESIZE:	12Mb

F-15 Eagle

Fly The F-15 Eagle

(Available In Both FSX and FS2004 Versions)

The F-15 Virtual Cockpit is FULLY textured, every switch, panel and rivet has been artistically rendered to provide a thoroughly immersive experience.

Iris has provided a large amount of custom animations both inside and outside the aircraft, with the variable position intakes moving according to the aircraft's angle of attack to ensure optimum airflow into the engines. The variable doors inside the intakes are also automated to adjust the speed of airflow into the engines for supersonic flight.

Iris has also once again had the privilege to employ the sound genius of Christoffer Petersen who has provided us with some excellent sounds for the F-15 recorded from the real deal which we're sure will have you playing with that volume control!

SKU:	PRICE:	US$29.95
DL-F15X	FILESIZE:	79Mb

Home Built Flight Sim Plans eBook

Build Your Own Home Flight Sim Cockpit With This Complete eBook, Plans & Drawings That Show You How!

Take your home flight sim set-up all the way. This JRH Flight Sims eBook describes the techniques and methods used to design and build your own home built flight simulator. The eBook contains 58 pages of how the JRH Flight Sim was built including in progress build photos, wiring diagrams and figures. Also included are 10 dimensional drawings of the frames and panels.

The book includes: Simple to follow instructions, Photographs, Wiring schematics, Dimensional drawings, Building techniques, MS Flight Simulator Setup, Graphics Cards Setup information and more!
A great resource for the new home built flight deck enthusiast!

SKU:	PRICE:	US$29.95
DL-HBFS	FILESIZE:	8Mb

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From the EDITOR

Hi! Welcome to the October issue.

As you may or may not know, Computer Pilot's content is produced from a wide range of sources, but the majority comes from our team of experienced long-time simulation enthusiasts, real-world flight instructors, or aviation specialists, who also happen to be freelance writers. We are always on the lookout for new writers to contribute to the magazine, offering their unique insight and experience in aviation and simulation. As our team of writers is diverse, we are able to offer you the reader a wide array of simulation topics and instruction in each monthly issue. But our search is always ongoing, and we are looking for new freelance writers to contribute to the magazine, to bring their individual expertise into the spotlight, and project their knowledge and experience out to our entire circulation of keen sim enthusiasts. So if you have a knack for putting pen to paper, so to speak in this online computerized world, send me an email. I look forward to hearing from any simmer with solid writing potential. In particular, we are after real world aviation instructors of all levels to undertake simulation related flight training lessons. Also, we are looking for a specialist hardware and technology reviewer to test and write about all the latest computer hardware for flight sim users. If you think you fit these positions, or would like to contribute to the magazine in another writing area, please send me an email with your details, experience and any previously written pieces or published articles to editor@computerpilot.com
I look forward to hearing from you!

Enjoy the October issue of Computer Pilot magazine. There are some quite large articles this issue, but the flights are also great fun. Dust off the aircraft cover, oil up the engines and get them cranking as you explore the beautiful virtual sim worlds!

Dean Bielanowski
Editor

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- Computer Pilot Interactive
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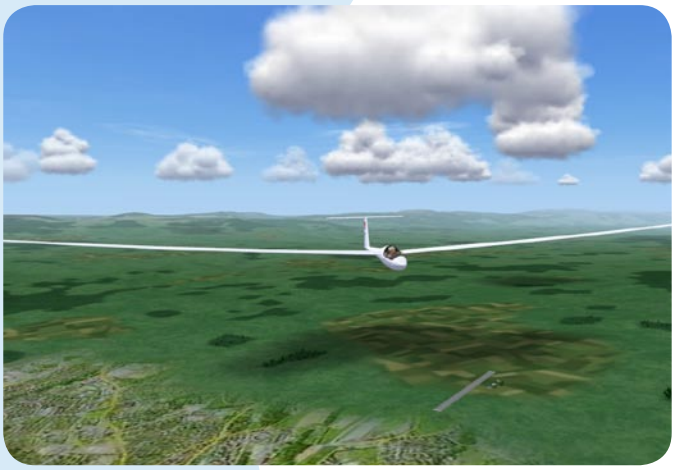
CONTENTS

8 NEWS AND NEW RELEASES
All the latest news and new releases since our last issue.

REVIEWS
42 Wilco's Citation X
46 Flight 1's FS Discover
50 Matrox's TripleHead2Go Digital Edition
60 Abacus's Tips, Tricks & Trips Book

12 VIRTUALLY SOARING



"The modern sailplane is remarkably sophisticated in its simplicity. It is also one of the most efficient machines ever designed. In skilled hands, and with favorable weather, you can fly for as long as you have daylight, easily traversing hundreds of miles in a single flight, and never expending a single drop of gas"

18 A SPECTATOR SPORT - THE VIRTUAL SYWELL AIRSHOW
"This time there was more time to prepare the show, and to add in the lessons learned from the first show. Bill had been surprised by the precision with which the display teams had kept to their display times – within a few seconds only – an indication of a hitherto unknown level of flying skills and professionalism which could be built on…"

24 THE SEVEN DEADLY SIMS
The date, 5th November 2007, the time, 1000hrs local AEST (2300Z Sunday 4th) and the Seven Deadly Sims are assembled at Sydney's International Airport awaiting airways clearance to commence their seven day virtual 40,000 nm flight around the world raising money for charity.

35 DR BETZY WONG, FLIGHT SIM THERAPIST
"My hands sweated and I coughed nervously as I gripped the cracked vinyl covered arms of the chair. Feeling far too anxious to speak, I was secretly questioning the authenticity of the array of framed diplomas on her office wall." And so begins the next series of flight sim fiction by Bill Smith!

56 WINNING IN THE AIR: HOW TO GAIN THE ADVANTAGE - PART II
Let's say you find yourself in a knife fight with a bird that can out turn you. You make a decision to break off the engagement and bug out. With situational awareness, when you disengage you'll be on course for a safe haven. Without it, you may find yourself heading deeper into enemy airspace.

64 MEET YOUR MAKERS! - JON PATCH
Jon Patch made FS fame not so long ago with his freeware Ogden Point and Victoria software, and his much appreciated VancouverPlus commercial titles. We interview and present the 'man behind the scenery' to you.

70 VFR FLYING IN THE WATER WONDERLAND

Tom Kurtz takes you on a flying adventure in his home state of Michigan.

78 THE ART OF INSTRUMENT FLYING - INSTRUMENT SCAN
A very effective way to accomplish this goal is to have the pilot utilize the visual environment outside the cockpit but not relying solely on that view. Instead, the pilot takes that visual information and incorporates the visual scene as another aspect of the instrument scan.

PLUS OUR REGULAR COLUMNS:

32 FREEWARE FRENZY
The best freeware, found and reviewed!

38 PULLOUT POSTER
"Jet Powered Glider"

68 VIRTUAL AVIATOR
More online sim websites under the microscope

77 INBOX
Your letters to us.

European Flight Sim Shows

FS WEEKEND - The (almost) annual FS Weekend held in the Netherlands is making its 21st showing early November. This is one of the biggest and best International flight sim shows going around, and well worth attending if you are in the area, or can get there.

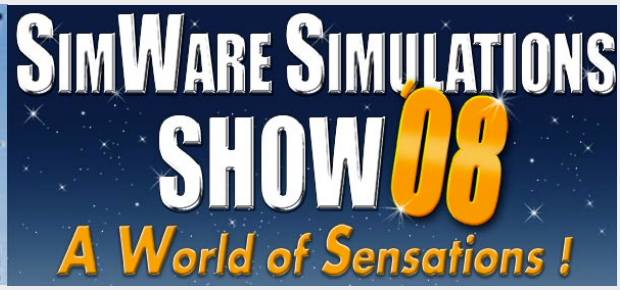
FS Weekend Opening times – Saturday 3rd November & Sunday 4th November from 10:00 till 17:00
Admission - (Visitors to the FS Weekend pay a single entry fee, which includes entrance to the exhibition, and all theme park attractions); Adults - €14,90; Children between the age of 4 and 12 years - €12.90; Senior citizens (65+) and cultural youth passport - €13.90.

For more information, check out **www.fsweekend.com**

SimWare Simulation Show 08 – Held in Brussels on the same weekend is the SimWare Simulations '08 show (Friday 2nd, Saturday 3rd and Sunday 4th November). "Throughout 1200 square meters, SimWare Simulations offer you a general survey of the upcoming 2008 simulation products. Among others, we can already list the following exhibitors :

- Microsoft to present their Flight Simulator X - Acceleration Pack.
- Wilco Publishing to present their new sequel - Airbus Series Volume 2.
- Electronic Arts/Kuju to present their Rail Simulator (formerly Microsoft Train Simulator!)
- Eagle Dynamics to present their Black Shark, new version of Lock-On.
- Aeromodelling, Microlight Aviation schools (ULM's, gliders, parapentes, mono, parachutes…)
- Track IR v4 Pro - a high-performance headtracking system.
- Gliding simulator with CNVV's training glider cockpit (Saint-Hubert).
- Realistic helicopter command controls.
- Presentation of multi-functions seats - PlaySeats.
- Promotional offer on several products.
- And many other new products to discover...

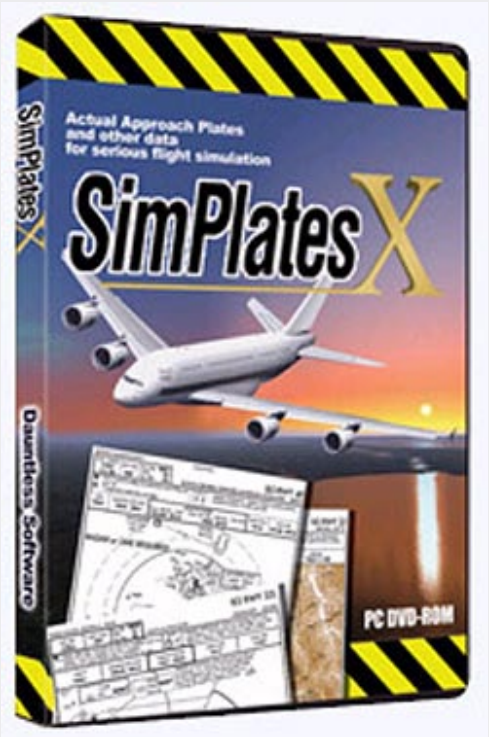
For full details, head to **http://www.simw.com/**



SimPlates X Released

THE LATEST SimPlates version from Dauntless Software is now available! "SimPlates X is our collection of IFR approach (and other) charts and a worldwide airport/facility directory aimed at the serious flight simulation enthusiast. This latest edition (SimPlates 2000 and 2004 came before) features over 30,000 real world IFR plates - far more plates and at a higher quality than ever before.
Take your flight simulator experience to the next level!

- Over 30,000 real-world IFR plates, including approach plates, SIDs/STARs, Airport Diagrams, and more. Approach types include ILS, VOR, VOR/DME, NDB, LLZ, SDF, GPS, TACAN, Helicopter, Visual, and more.
- Superb coverage: includes virtually every IFR plate for the USA and plates for hundreds of countries worldwide.
- Complete, Integrated WORLDWIDE Airport/Facilities directory. Features useful information on the vast majority of the world's airports, including many tens of thousands without instrument approaches. Also included as part of this is a fairly comprehensive worldwide directory of NAVAIDs (Navigational Aids) such as VORs and NDBs.
- This is a massive collection of data, totaling over 6Gb - which is actually too much for a 'standard' DVD. In fact, we've had to go to a special larger-capacity DVD format to fit it all on!
- Simplates' friendly interface makes it easy to find exactly the plate or information you are looking for quickly, print it out, and have it ready for your virtual flight. Yes, SimPlates are meant to be printed, not viewed on screen (though it is theoretically possible to view them on-screen as well, as they come as PDF files).



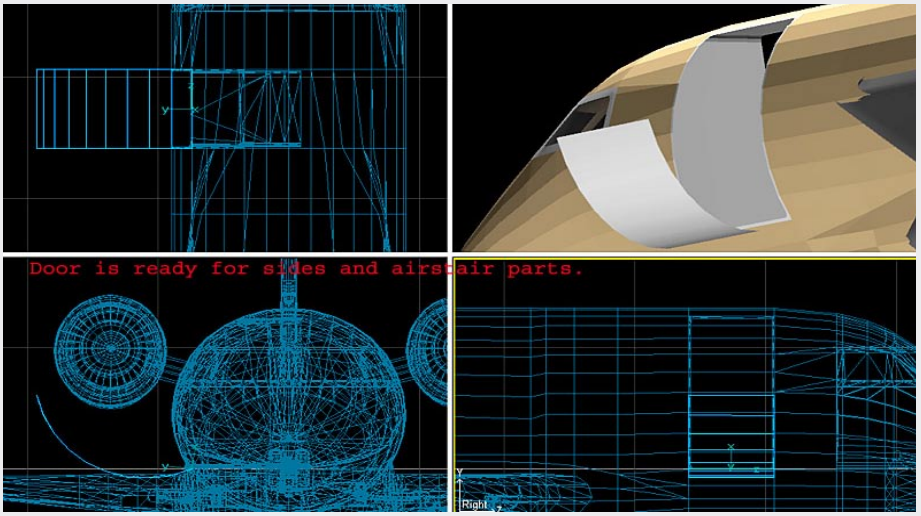
SimPlates X is available in boxed DVD format for US$39.99 from all good flight sim retailers. A downloadable demo is available from the Dauntless website at **http://www.dauntless-soft.com/**

FS Design Studio for FSX

"INTRODUCED at the turn of the 21st century (in January, 2000), tens of thousands of hobbyists have relied on the user-friendly FS Design Studio to craft great aircraft and impressive 3D scenery. Just look around and you'll find that the overwhelming majority of aircraft of all sizes and shapes have been created with this remarkable tool owing to its long list of easy to use, yet powerful features. After ten months of intensive R&D, FS Design Studio V3.5 is now available by download or on CD-ROM.
Version 3.5 includes these new features:

- enhanced texture handling - reflective, transparent, light maps
- supports FSX style animation using key frame
- primarily - XToMDL compiler for maximum future FS compatibility
- alternatively - MakeMDL compiler for maximum backward FS2004 compatibility
- new Help Files with extensive examples and tutorials
- sample projects for FSX and FS2004
- improved boolean operations (e.g. for cutting holes)
- autosave, unlimited undo/redo, more
- compatible with both FSX and FS2004

FS Design Studio is available now by download or on CD-ROM for $49.95. Check your favorite sim retailer for availability or **www.abacuspub.com** for the download version.



Saitek Offers New Yoke/Throttle Control System

SAITEK'S newest offering promises some competition to the dominance of CH Products in the budget-priced flight simulation controller market. While not yet available to the masses at time of writing, the company has released the following information on the new product…

"Precision. Realism. Control. The Saitek Pro Flight Yoke System is highly engineered to meet the exacting needs of the true flight simulation enthusiast. Stainless steel shaft, ergonomic controls, integrated chronograph and separate throttle quadrant ensure a smooth, accurate and totally realistic flying experience."

- Durable Stainless Steel shaft with precision bearings gives smooth and predictable elevator and aileron control
- Used with the supplied SST Programming software, integrated mode switch trebles the number of controls you have at your fingertips
- Accurately time each leg of your flight plan with the integrated chronograph
- Separate throttle quadrant with additional switches to configure any combination of throttle, flaps, mixture or prop pitch. Mount on top, in front of your desk, pilot or co-pilot side so that the controls are exactly where you want them
- Unique, 2-position desk clamp keeps your yoke and quadrant securely fixed no matter how extreme the flying conditions
- Use the integrated USB Hub to easily connect other parts of the Saitek Pro Flight range of products, such as additional Pro Flight Throttle Quadrant or Pro Flight Instrument Panel (both sold separately)
- Saitek's powerful Saitek Smart Technology (SST) programming software allows gamers to configure their controls to suit their preferred gaming style, and to save the configurations as personal profiles.

The Pro Flight Yoke System Controls feature:

- 14 buttons
- POV Hat Switch
- 3-position Mode Switch
- 3 axis levers on Quadrant
- Elevator and Aileron Axes on Yoke

The system is compatible with USB 2.0 ports and works with Windows XP, XP64 and Vista (all versions). The Pro Flight Yoke System is expected to retail for around US$150. Check **www.saitek.com** for the latest availability information, or check in with your favorite local sim supplier.

"Mystery at Emma Field"

THIS WAS THE TITLE of a recent news posting on the FS Addon website – where the famous Emma Field scenery, originally published by Lago for Flight Simulator 2002, finds its home. Apparently quite a few rumours have been floating around about the Emma Field title, especially in relation to a FSX version becoming available. Well, the same news posting offered a few facts in reply to these rumours. Here is what the FS Addon folk had to say;

"FACT #1: the work on Emma Field X (our rendition for the new Flight Simulator X), that had already started, has been stopped. The original main author, Richard Goldstein, regrettably has no time to work on it anymore and had to bow out of this long-running project.

So, with that bad news out of the way, here's the good news:

FACT #2: we have found two worthy successors to Richard and the NEW Emma Field X will be built from the ground up by them. They are Bill Womack and Holger Sandmann!

FACT #3: Emma Field X - and its community - will continue its long tradition of being a cozy, secluded and quiet place for GA pilots, built with the highest quality of techniques, creativity and support. Yes, there will be some changes but the atmosphere of the place will remain the same!

FACT #4: we have started work on the new title and we welcome ideas and suggestions from all customers and potential customers. That said, we will NOT add an ILS or other newfangled stuff that bush pilots and Sunday flyers really can do without."

So there you go. Straight from the Emma Field horse's mouth, so to speak. Emma Field fans, or new simmers looking for a very nice bush flying airport experience can look forward to Emma Field for FSX. Plus, you can put your input into the inclusions of the next version too! Check out **www.fsaddon.com**

Auzen X-Fi Prelude 7.1 Uses Licensed Creative Technology

IN A FIRST for well-known sound card manufacturer, Creative, a third party company has licensed their proven X-Fi card technology for use in their own manufactured sound solutions. Auzentech has recently released their X-Fi Prelude 7.1 based on Creative technology, but then improved!
The Auzen X-FI™ Prelude 7.1 soundcard marks the first time Creative has permitted a third-party soundcard vendor to use the Creative X-FI™ chipset in its own soundcard design. The Auzen X-Fi Prelude 7.1 soundcard will fully support EAX 5.0 and have expandability similar to that of the Auzen X-Meridian™ 7.1. Additional features such as Dolby® Digital Live, DTS® Interactive, and DTS NeoPC™ will be available soon via driver updates.
Some features include:

- 24-bit Analog-to-Digital conversion of analog inputs at 96kHz sample rate
- 24-bit Digital-to-Analog conversion of digital sources at 96kHz to analog 7.1 speaker output
- 24-bit Digital-to-Analog conversion of stereo digital sources at 96kHz to stereo output
- 16-bit to 24-bit recording sampling rates: 32, 44.1, 48 and 96kHz
- ASIO 2.0 support at 16-bit/44.1kHz, 16-bit/48kHz, 24-bit/44.1kHz 24-bit/48kHz and 24-bit/96kHz with direct monitoring.
- Enhanced SoundFont support of up to 24-bit resolution
- 64MB of X-RAM
- Rear panel connectors for MIC, line input, channel line output, S/PDIF input and output
- Front panel connectors for MIC input and headphone
- On-board connectors for AUX and digital extension header
- Swappable OPAMP Socket (Front L/R only)

The product has proved so popular that the entire stock from the first production run has sold out. More will become available and the second production run is already underway. For full details of this exciting new sound card, check out **www.auzentech.com**

Hot stuff for your FSX!

aerosoft™

F-16 Fighting Falcon

Also available as a download at www.aerosoft.com

"It looks like an angel,
flies like an angel,
but is a devil in disguise!"

Catalina - the flying cat

Download version

Mega Airport London-Heathrow

Also available as a download for both FSX and FS9

This package contains the complete Airport of London-Heathrow, including the brand new Terminal 5. Even Pier 6 for the A380 has been modelled. Based on photo-real textures with aerial photography, this awesome scenery actually jumps to life with its animated jetways, dynamic traffic and service vehicles, and many other nice features!

photos: www.aboutpixel.de

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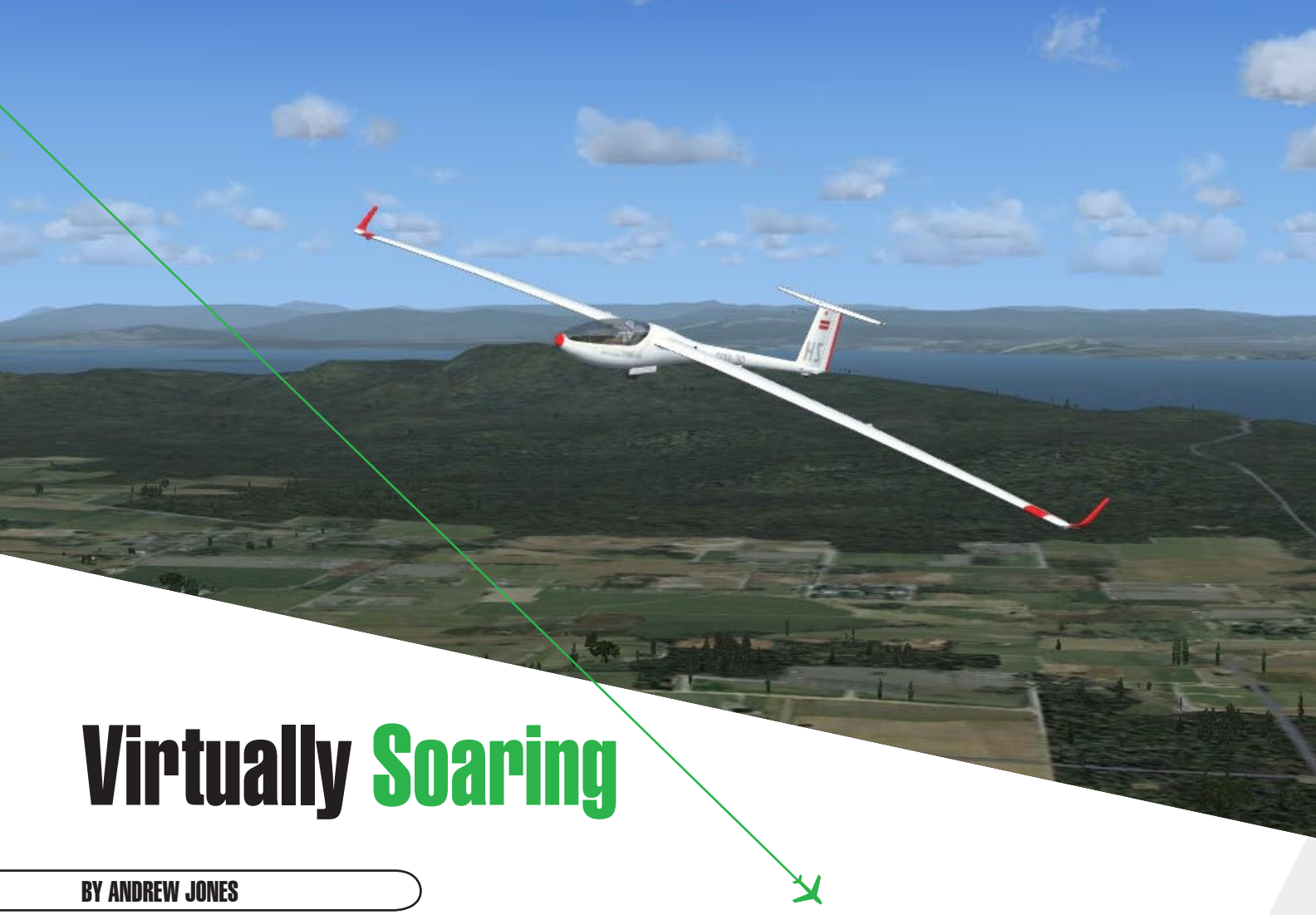


Virtually Soaring

BY ANDREW JONES

THWACK! You pulled the lever yourself, deliberately. Even so, you still feel a start as the rope disconnects. The plane shutters, the stick twitches in your hand, and you are momentarily pressed forward against your shoulder harness as the sailplane decelerates in its momentary transition to unpowered flight.

Instinctively, you drop the nose to pick up speed. Instead of engine noise, there is only the rumble of the wind. This all-enveloping sound is your constant companion, and it becomes louder and quieter in direct proportion to your airspeed. So reliable is it, that the airspeed indicator in front of you is practically unnecessary. An experienced pilot can easily find his desired speed, simply by listening. To your left and right, two brilliant white wings stretch out nine meters to either side. When you pull back or push forward on the stick, you hear an unsettling creak as the thin composite airfoils flex in the opposite direction.

Up ahead, you see the tow plane climbing away to the left. Instinctively, you bank gently to the right, further increasing the clearance. Now totally alone in the tiny cockpit, there is only a clear bubble of polycarbonate separating you from the outside world. You do not just sit inside this type of aircraft; you wear it. The controls are extremely responsive, and you feel every tiny change in attitude directly in the seat of your pants.

It is a hot, humid, hazy, summer day. The visibility is less than 20 miles, but even so the view is amazing. Below you, to one side are mountains, and to the other side is a patchwork of fields and woods that stretch for miles over the gently rippling piedmont. The sky is alive with activity. Cumulus buildups are all around, and so are other sailplanes.

A low-pitched tone from the variometer confirms what you already know. You are descending. This is normal. Descent is your primary mode of flight, interrupted only occasionally by brief periods of climb. From half a mile away, you spot a pair of hawks circling over a large bare patch of terrain, probably a field that was recently plowed. It's a good sign.

These are not buzzards in search of carrion. These resourceful birds are circling in a rising column of air, lazily riding it to a higher altitude without having to flap their wings even once. High above them is just the faintest wisp of a white puff, another good sign that you are in the right place. A cumulous cloud is just being born, a sure sign of a healthy thermal updraft that will likely last for as long as you need it. You steer toward the spot, being careful to stay clear of the hawks.

Suddenly, the plane shudders. The turbulence is an indication that you are entering the thermal. Then you hear what you were waiting

for, a high-pitched beeping from the variometer that is growing faster by the second. You can see the needle rise, while at the same time you notice that the right wing is trying to pitch up. That tells you which way to turn. You immediately bank 45 degrees to the right and pull back on your stick to slow down to best climb speed. The beeping becomes steadier, and you carefully adjust your rate of turn.

It requires a sensitive touch. When you hear the tone begin to slow down, you tighten the turn. When it speeds up, you let up on the stick just a little, widening the turn. You smile to yourself. Just like the hawks, you are now climbing steadily at nearly 500 feet per minute, without an engine. The process has become so natural for you that you can visualize the spiraling updraft in your mind, and remain centered over the thermal until you reach your desired altitude. Like riding a bicycle, it is a difficult skill to learn, but once you do, it becomes intuitive.

After six minutes, you have gained 3,000 feet of altitude. That's enough for now, and you break away and begin to descend once again. At best glide speed, you lose altitude much more slowly than you gained it in the thermal. It will take you perhaps 17 or 18 minutes to lose all the height you just gained. And so, there is plenty of time for sightseeing and for spotting the next thermal.

In front of you are five basic instruments: an airspeed indicator, an altimeter, a turn and bank indicator, a compass, and most importantly, a variometer. That's it, unless you brought along a GPS-enabled PDA (a tool of growing popularity in this sport). To control the plane, you have only a stick and a pair of rudder pedals. Obviously, there is no throttle.

The modern sailplane is remarkably sophisticated in its simplicity. It is also one of the most efficient machines ever designed. In skilled hands, and with favorable weather, you can fly for as long as you have daylight, easily traversing hundreds of miles in a single flight, and never expending a single drop of gas (unless you count the fuel used by the tow plane). Indeed, the most common limitation to the length of a sailplane flight is the pilot's bladder.

For safety purposes, all pilots learn the basics of gliding, but in soaring, one takes these principles to the extreme. This makes soaring a uniquely creative way to fly. Astute powers of observation are needed to seek out the invisible currents of rising air that are the key to staying aloft. Although cumulous clouds are the most obvious clue to finding a strong thermal updraft, not every flying day provides them. But any experienced sailplane pilot knows that reliable lift may often be found even on a perfectly clear day. It is just a little more difficult to sniff out. Indeed they take pride in their ability to read the terrain and to ferret out even weak thermals by noting the changing colors on the ground below. If there is some wind and there are sizable hills around, lift may also be found along ridgelines and cliffs. It is a subtle art, and one easily as challenging as the most complex aerobatic maneuvers.

In the flight sim world, soaring has been seriously neglected until recent years. While a sailplane has been included in MSFS for at least a decade, the platform's model of the atmosphere consistently failed to provide a realistic environment for soaring. With the advent of FSX, however, things have changed substantially for the better. Additionally, in the last three or four years, a couple of respectable stand-alone soaring simulators have also come into being: Condor, and Silent Wings. We will take a look at both of them and see how they stack up against FSX.

Soaring in FSX

MSFS has always been intended as a versatile platform, suitable for many types of flying. Each new version has featured greater geographical detail and improved physics, and a greater variety of aircraft. Weather realism has been one of the more significant improvements in the latest version, paving the way for a greatly enhanced soaring experience.

Thermals are now modeled based on solar heating of the ground and may be sought out by watching the terrain textures and by looking for circling birds. Moreover, the handling of the sailplane itself has been substantially improved as well. A tow plane is even available to carry you aloft. No longer must we ruin the immersion by slewing to the desired altitude. Better yet, there is a series of soaring tutorials and missions to fly that are extremely well done.

Initially, upon the release of FSX, as I waited for the serious commercials add-ons to catch up, I received a great deal of pleasure experimenting with the DG08S sailplane included with this version. In particular, I enjoyed the challenge of staying in formation behind the tow plane. It was also quite a thrill to catch a strong thermal and to learn the tricky art of staying in it long enough to gain some altitude.

As time went on however, and I honed my skills, I soon began to realize that FSX still had some rather serious limitations when it came to soaring. My first disappointment was discovering that ridge lift (lift generated as wind blows over a mountain) does not occur naturally within FSX, in spite of the fact that it was very convincingly implemented in one of the lessons. Secondly, although thermals are generated by the sun shining on particular types of landclass tiles, the updrafts are not tied realistically to the formation of cumulous clouds. Finally, it was disappointing that there is only one sailplane included. Perhaps freeware or commercial developers will solve this in the future, but for now the DG08S is the only option.

Condor

Originally released in 2005, Condor is a stand-alone soaring simulator that is specifically geared toward competition soaring. The simulator is the entrepreneurial endeavor of Uros Bergant and Gergor Rozman, a pair of soaring enthusiasts from Slovenia.

At first glance, it is a modest project, with its focus placed squarely on the physics of non-powered flight, as well as creating a stable online environment for racing. In fact, the Condor website goes so far as to advise perspective customers upfront not to expect flashy graphics or spectacular effects. This helps the developers keep costs down, and also keeps the simulator open to users around the world, not all of whom may have the latest computer equipment.

The base platform includes about a dozen different sailplanes in various categories along with a single block of scenery that covers 37,000 square kilometers of the Slovenian countryside. Each glider is fully animated inside and out (complete with dynamically flexing wings) and also has a simple 3D virtual cockpit. The scenery uses 90-meter resolution terrain mesh and synthetic textures reminiscent of FS2002, with widely varying textures, thick forests of three-dimensional trees, as well as a smattering of simple thee-dimensional buildings. While certainly not as spectacular as the photo-real world of FSX, it is attractive enough for its purpose.

A scenery development kit is available for free so that users may create their own scenery to fly over. About ten scenery packages are currently available (all for free). Some are quite large, covering areas

SOARING IN FSX IS BETTER THAN EVER BEFORE

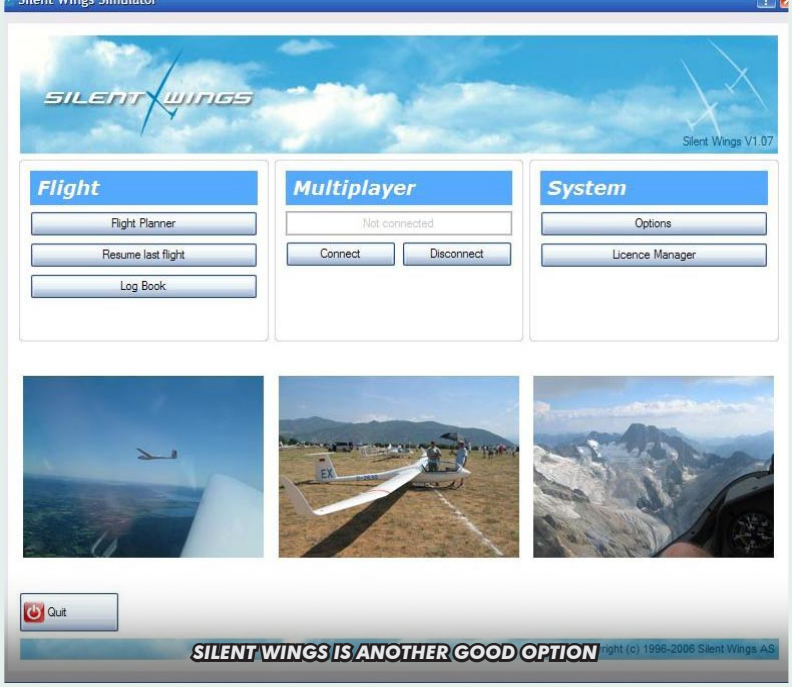
THE DETAILED VC OF THE DG08S

THE NEW TOW PLANE FEATURE IS A BLAST

FSX OFFERS A FANTASTIC SOARING ENVIRONMENT

THE NEW REFLECTIVE TEXTURES GIVE ME GOOSE BUMPS

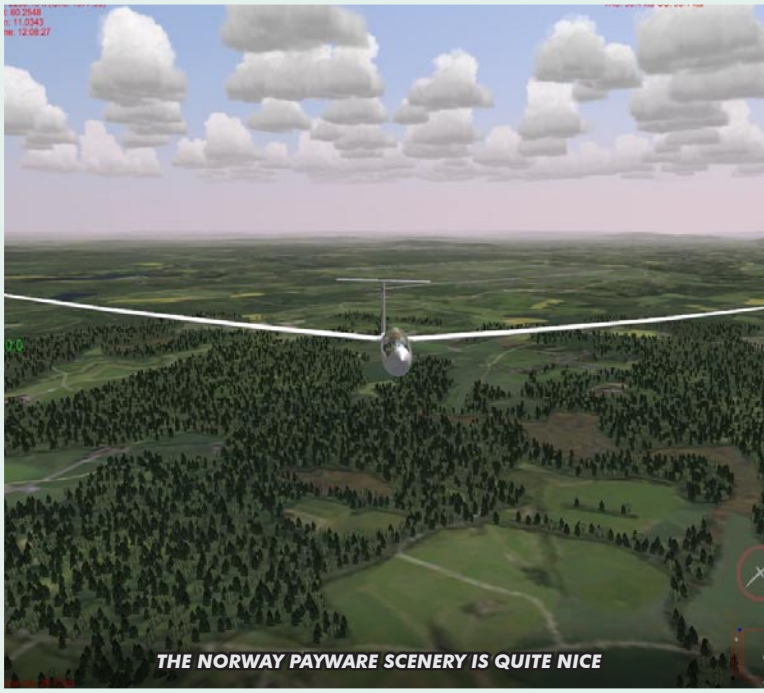
CLOSEUP OF THE DG08S



SILENT WINGS IS ANOTHER GOOD OPTION

TAKING TO THE SKIES ONCE MORE

THE UNUSUAL ANTARES 20E POWERED SAILPLANE

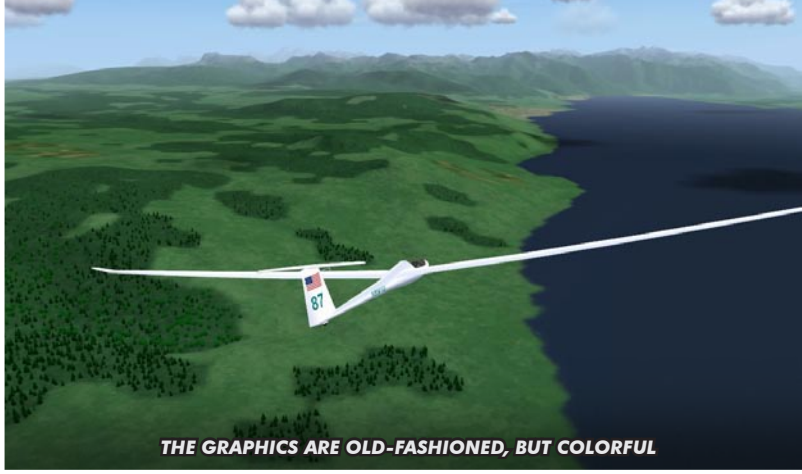


THE NORWAY PAYWARE SCENERY IS QUITE NICE

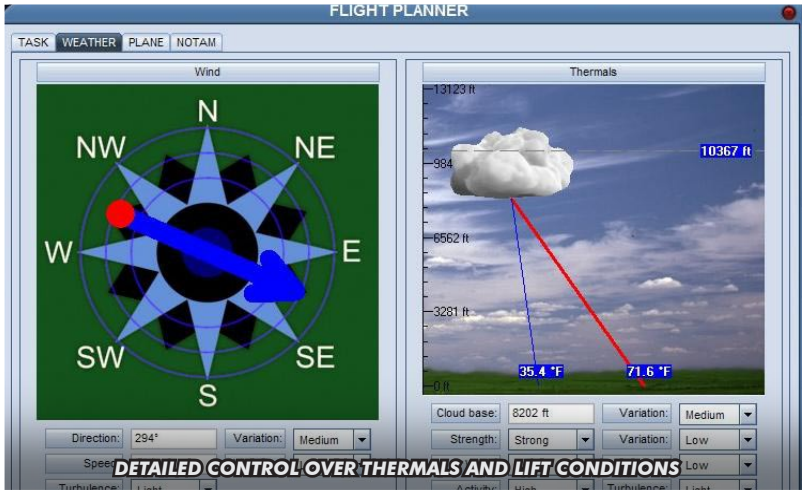
SOME OF THE OTHER SCENERY IS NOT AS APPEALING

ALL THE VCS ARE PHOTOREAL

CONDOR IS A STANDALONE SOARING SIM


THE GRAPHICS ARE OLD-FASHIONED, BUT COLORFUL

THE VC IS FULLY ANIMATED



DETAILED CONTROL OVER THERMALS AND LIFT CONDITIONS

BEGINNERS WILL LOVE THE THERMAL ANIMATION OPTION

TOO BAD WE DON'T HAVE THIS FEATURE IN REAL LIFE

THE COMPLETE LIFE CYCLE OF CLOUDS IS VISIBLE

MORE THAN A DOZEN GLIDERS ARE AVAILABLE TO TRY

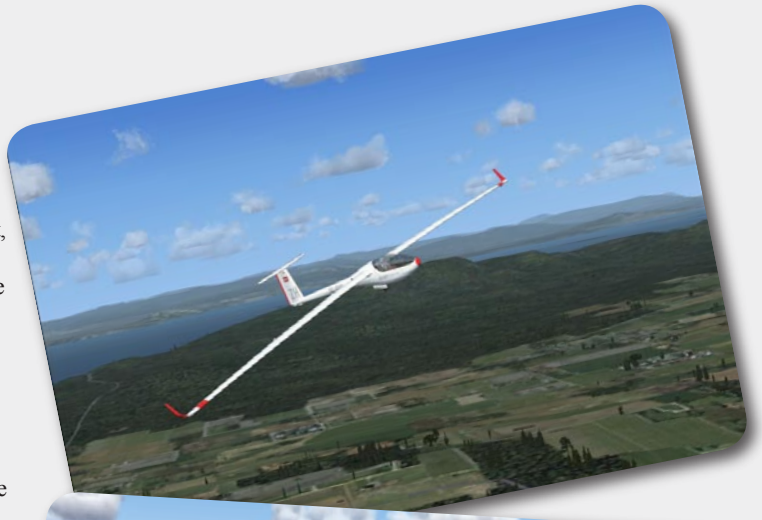
as diverse as central Colombia, the Swiss Alps, and Slovakia. Other packages are smaller, and specifically designed to recreate popular racing courses.

The developers maintain strict control over the creation of new aircraft, following a philosophy not unlike that used by the developers of the Il-2 series. Users may create and submit 3D models, but the developers alone reserve the absolute right to build the flight models. This allows them to maintain a consistent level of quality. Add-on aircraft are then released five at a time in "Plane Packs" for a nominal fee.

During my test flights in Condor, I was deeply impressed by the fidelity of the atmospheric model. Thermals realistically develop slowly over the terrain, and after a while, cumulous clouds form in the sky above them. As the cloud matures, its shape changes realistically until it eventually decays and fades away. Pressing the "H" button on the keyboard allows you watch the process in even more detail, bringing forth a rather nifty animation of the upwards and downwards flow of air over warm spots on the ground. Not only is it interesting to see, but it is also a helpful tool for beginners having trouble finding thermals on their own. It's too bad this cannot be done in real life.

When flying in the mountains, if the wind conditions are right, one will also encounter ridge lift, wave lift, and upslope winds. Downdrafts and turbulence are also very effectively recreated in the right places, making for an interesting challenge as you develop your skills.

As a result, soaring in Condor is a highly immersive experience, and is significantly more challenging than in FSX. It is also nice to have such a wide variety of sailplanes to fly. The distinct flight characteristics of each are unmistakably brought out.



Silent Wings

Silent Wings is the other stand-alone soaring simulator. It was created in Norway and released in 2005, and its developers are closely connected with the company Simula Research AS, which provides applied research services in mathematics and information technology.

It boasts features that are generally very similar to those in Condor, including advanced flight physics and atmospheric modeling, as well as online multiplayer competition.

Silent Wings is most obviously differentiated by its scenery, which is exclusively photo-real. A wide variety of such scenery is available to the user free of charge, including large areas of Europe, Africa, Australia, and the US. There is also an ultra-high resolution scenery package available for an additional charge covering southern Norway. The scenery areas for Silent Wings tend to cover much larger areas than those in Condor. While this obviously presents an advantage once you are in the air, users with slow Internet connections should be advised that the downloads may be prohibitively large.

The base package includes five gliders, among them a powered glider, the Antares 20E, which makes an interesting addition. Five additional aircraft are available for free online. In the air, the default aircraft perform quite nicely, and once more the atmospheric model is easily superior to FSX. The full lifespan of thermals is modeled, including the visual development and decay of cumulous clouds. I found flying behind the tow plane to be slightly more challenging than in Condor.

Conclusion

FSX represents a significant step forward for the MSFS platform in regards to soaring. If you already own FSX and are curious about soaring, then this is a great way to get your feet wet. However, if your interest in soaring grows more serious, you will likely soon find FSX leaving you unsatisfied.

Both of the two stand-alone alternatives, Condor and Silent Wings, are greatly superior to FSX in terms of realism, though neither can compete graphically. For the serious enthusiast, you can't go wrong with either one, as their features and realism are quite similar. However, there are a few important differences, which may help some users in making a decision.

Condor uses synthetic terrain textures, while Silent Wings uses photo-real terrain (the included screenshots should give you an idea of the appearance of each). Condor has three-dimensional objects on the ground (trees, buildings etc.), while SW has none. Condor generally uses smaller areas of scenery, while SW has some much larger areas available. Condor includes about a dozen flyable aircraft (with an additional five available for purchase), while SW provides only five (with a few more available for download). Condor has an attractively animated thermal visualization system, while SW has a simple static one that is less pleasing to the eye. Condor is limited to running in the Windows environment, while SW can also run on Linux (and soon on Mac as well). SW has a free demo available, while Condor does not. Condor is a little less expensive than SW.

My personal preference is for Condor. The larger number of available aircraft is the major advantage to me. Each plane is very detailed, both in terms of the flight model and the visual model. I also feel that the detail of the virtual cockpit is slightly better in Condor. The scenery in Condor is more visually pleasing to me as well, though this is a purely aesthetic preference.

More information on Condor and Silent Wings at their respective websites: **www.condorsoaring.com** and **www.silentwings.no**. ✈

A Spectator Sport

The Virtual Sywell Airshow

BY PETER DODDS

Football (that's Soccer; not American Football or Australian Rules) is Britain's national sport, but a little known fact is that second to football, Airshows are the biggest spectator sport in the country. The biggest – Farnborough, RIAT, Flying Legends for example, attract approaching 200,000 visitors over the duration of the event, usually 2 or 3 days.

Innovative ideas tend to go before the technology to achieve them; therefore it needs a person with vision, determination and enthusiasm to pull them off. Such ideas also often arise through happenstance. Such happenstance occurred in July 2004, when one such visionary, recuperating from an illness at home, and looking for something new to do with Flight Simulator to relieve his boredom, discovered on-line flying with VATSIM and on 14th July of that year made his first online flight. He was hooked, and the UK world of on-line flyers began to see the name Bill Casey appear almost whenever they logged into the VATSIM-UK forum or looked on Servinfo to find out who was flying.

Almost 11 months passed, and the name Bill Casey was about to become even more well known. While stuck in traffic on the M1 motorway on 13th June 2005, he had an idea, which he put to Sean Reedman, the VATSIM UK Events Director at that time, whose understated response was just what Bill needed. "Go for it". Bill was going to run a virtual airshow. I suppose it was inevitable that someone someday who was enthusiastic about on-line flying on Flight Simulator should think of putting on an airshow, but it had never been done. Bill's excuse is that he "wanted to put something back" in return for the huge amount of enjoyment he derived from the Flight-simming hobby.

Bill started Flight-simming with FS4, but his interest in aviation goes back to his childhood when his life was steeped in the subject through the influence of his Godfather, Lord Watkinson. Lord Watkinson was Minister for Transport and Civil Aviation in the Macmillan Government of 1957 – 1963, and responsible for the launch of the British motorway system and the "Anglo" half of the Anglo-French Concorde project.

With the green light from VATSIM-UK, Bill had scarcely a month to organize the event, planned for 14th July 2005 – the anniversary of his first on-line flight. The first question was “How do you run an airshow?” Frantic internet and other research was necessary. How are display runs organized and timed? How do you communicate with the pilots and spectators and how does that translate into the VATSIM communications system? With these questions and many others to be answered, Bill’s main criterion nevertheless was that the event should be for General Aviation, (GA) not the “Big Tin” which predominated VATSIM at that time.

One prerequisite of course is display aircraft. Who was flying GA aircraft within VATSIM? The Cix VFR Club, formed in March 2003 was a GA, predominantly VFR oriented “Club” which was gaining a positive reputation within VATSIM-UK, so this seemed a good starting point. Bill emailed the club and received an enthusiastic response, and so the club was to open the display (which it has now done every year to date).

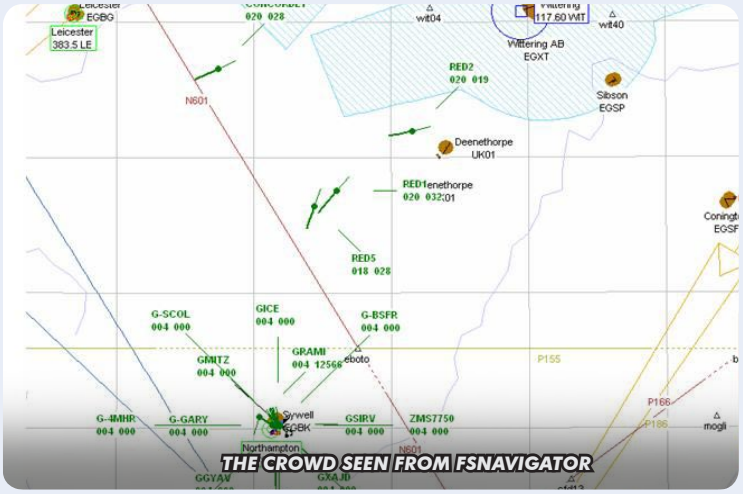
The second prerequisite was a suitable venue. Bill lives near Sywell, a licensed grass airfield just east of the town of Northampton, so this was a natural choice for that and at least two other reasons - there is a real Sywell Airshow and only light aircraft can land on the relatively short grass runways.

The third prerequisite was an audience. Without an audience you have some pilots having fun. With an audience you have an airshow. But can you have an audience for a virtual airshow? Within the constraints of the sim itself, and the VATSIM software, it is perfectly feasible for an aircraft to land at an airfield and watch another aircraft land, take off or simply fly past. So all the “spectators” would have to be aircraft. Their pilots could locate themselves somewhere on the parking area at Sywell, log on to VATSIM, then switch to an external view, or in normal cockpit view switch off the panel display, and with the appropriate controls move their point of vision to follow another aircraft. That part of the technology was simple enough, but what effect would so many aircraft in one place have on the VATSIM data servers?

There was no way of knowing the answer to that question except by trying it. Bill advertised his event on the VATSIM-UK forum, inviting people to come and watch the Sywell Airshow. On the day 18 spectators arrived. Only 18? It is unlikely that anyone logging into VATSIM had ever seen 17 other aircraft on the ground around him watching yet more aircraft in the air.

Not that there were actually a great many aircraft to watch. This was a new facet of on line flying and there weren’t many on line pilots around who were known to be interested in display flying. Cix opened the show with a fly past of 7 Cessna 172s which flew in line astern. A solitary RAF Hercules represented the “Virtual RAF” and did a low pass, and the surprise of the show, a virtual model of the brand new Airbus A380 lumbered along 100 feet above the runway at a mere 180 knots, hot from its maiden flight in the real world on 27th April that year. Why do large aircraft always appear to be flying more slowly than small ones? A group called the Virtual Formation Flying Group (VFFG) had just been created which flew a formation comprising five of the distinctive red Bae Hawks of the Red Arrows, plus Concorde. The Red Arrows showed off their maneuverability, although looking like Mig29s or F15s because that was the nearest thing to a Hawk that Flight Simulator could show. (This was put right in later years). Of these aircraft, only the Cix team’s Cessnas were light enough to land on Sywells grass, so the others flew in from base airfields some distance away, requiring some precise navigation and timing.

WAITING FOR SOMETHING TO HAPPEN

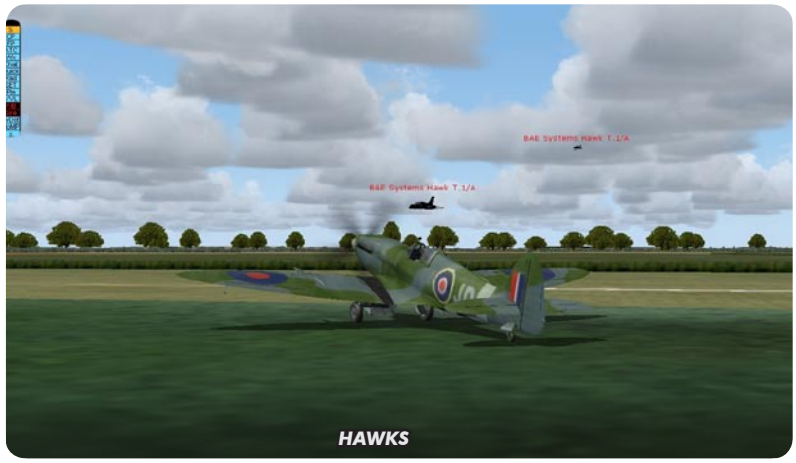


THE CROWD SEEN FROM FSNAVIGATOR

CIX TAKE OFF FROM LEICESTER

CIX FLYPAST FROM ABOVE

AIRBUS A380 F-WWOW


HAWKS

ELEVEN OF THE 14 SPECTATORS AWAIT CONCORDE

HUNTER

CIX TIGER ON THE WAY UP

NIMROD

CONCORDE AND THE SPITFIRE

A TIGER INBOUND TO WATCH THE SHOW - THAT RED BLOB IS SYWELL

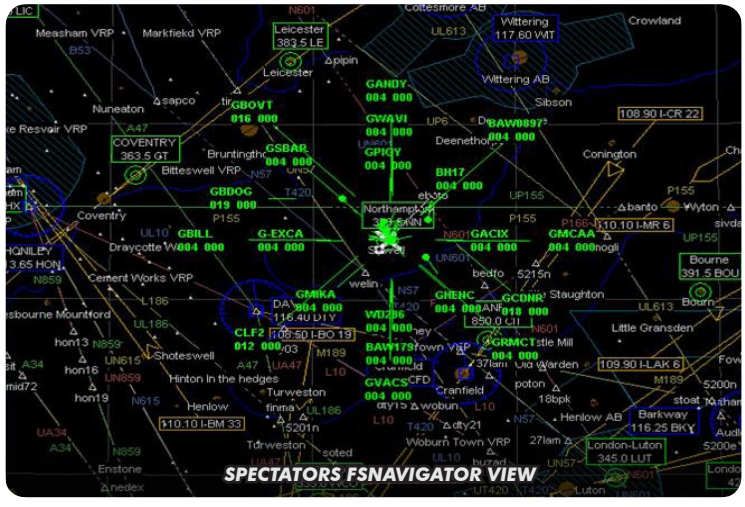
CIX CHIPMUNKS

DAKS INBOUND

CIX TIGERS WATCHING

DAK ON MY WING

CIX CHIPMUNKS



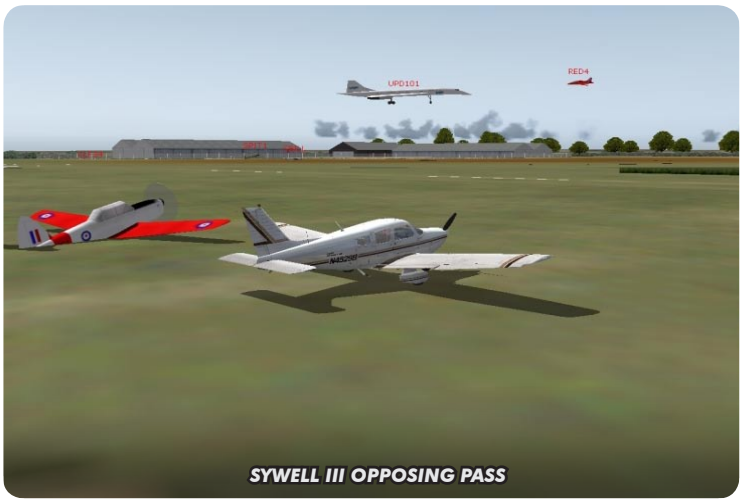
SPECTATORS FSNAVIGATOR VIEW

BAND OF BROTHERS VC10S & SPECTATORS

THE JOKER - SPITFIRE

SPITFIRE STEEP TURN

CONCORDE AND THE RED ARROWS



SYWELL III OPPOSING PASS

THE RED ARROWS WERE REALLY HAWKS THIS YEAR

Sean Reedman, who had given the initial go-ahead for the event volunteered to run the Air Traffic Control, controlling arriving spectator traffic and then the display aircraft. Real world Sywell has an Aerodrome Flight Information Service, (AFIS) rather than a full-blown Air Traffic Control service, so for VATSIM too, pilots could only be given information, not instructions following initial contact. That had the potential for some interesting situations if the pilot's weren't disciplined and thoroughly familiar with VFR aerodrome procedures. Bill had planned the display timings and coordinated them himself on the night. Cix helped by having its own liaison man on the ground at Sywell passing information on the incoming flight which had taken off from nearby Leicester.

Did it work? It had all been planned and carried out in a desperate rush, and Bill confessed later that he had been utterly exhausted at the end of the evening. However, everyone who took part, flyers, organisers and spectators agreed it was a huge success, and there was chat on the forum about it for weeks afterwards. It certainly achieved its objective of adding something back to the hobby, in particular, perhaps only for a day, a shift in focus away from commercial airline traffic which dominated the VATSIM skies. So it was no great surprise when, in early 2006, Bill announced that there was to be a "Sywell II".

This time there was more time to prepare the show, and to add in the lessons learned from the first show. Bill had been surprised by the precision with which the display teams had kept to their display times – within a few seconds only – an indication of a hitherto unknown level of flying skills and professionalism which could be built on. The timings were tightened for Sywell II and, echoing the way the Duxford "Flying Legends" airshow is run, a new element was introduced – the link aircraft. To avoid long gaps between displays, a solo aircraft – the Joker – is kept aloft hidden from spectator view and when called upon, carries out an aerobatic routine so that there is always something happening to keep the crowd's attention. The honour for this important role fell to Rob Jones in a Hawker Hunter.

Another introduction was documentation – it was starting to get serious, with precision flight briefings, virtually mandatory display start and duration times issued to the display teams. The professionalism moved up several notches. Some of the display pilots were going to attempt aerobatics. This meant practice! There was time enough this year, so the display pilots could get their performances up to scratch.

One of the challenges which FS multiplayer has to solve is what aircraft to display if it doesn't recognize the type. If I am sitting on the apron in a DeHavilland Chipmunk, which the other multiplayer clients do not have on their system, then they will probably see a Cessna 172 sitting on its tail, nosewheel in the air. The various online client applications try to address this by having a library of non-flyable small file size aircraft shapes from which they can attempt to display the correct type. But when they cannot resolve the type, then what is displayed is unpredictable and often a function of the spectator's Flight Simulator configuration. One VATSIM member came up with an enhanced version of this "library of aircraft" idea by producing a collection of the actual aircraft being flown at the show. If those intending to watch the show installed this "VUK" file of aircraft types, then they should, in theory, see the correct type displaying, with no loss in frame rates. It worked very well too.

The spectators at a real airshow can get a running commentary, either via a Public Address system, or for the biggies, by means of a dedicated Public Broadcast frequency. VATSIM uses the TeamSpeak

VOIP application for training, staff meetings, and other person to person dialogue, and this medium was used for Sywell II. The spectators – 25 of them this year, tuned into a dedicated TeamSpeak "room" to hear a running commentary.

The evening arrived, and with only a few problems of low FS frame rates caused by the significant amount of data being transferred to every computer involved, ran almost like clockwork. Cix opened the show with a flypast of 2 Tiger Moths, 2 Chipmunks, a Beech 19 and the new RealAir Spitfire XIV. The Tigers performed a synchronized loop, introducing aerobatics to the show, followed by the Spitfire doing a "last one home" impression (it should have been flown with one wing low and squirts of primer to make the engine cough and smoke - but you can't do that in FS!).

The Hawker Hunter "Joker" dived, rolled and looped at a perilously low altitude given the uncertain airfield elevation, the possible errors in on-line altimeter setting and the limits of FS. The show came to its climax with the Red Arrows trying to emulate their real world counterparts, and Concorde, whose Captain, Barry Kensitt, sounded just like Brian Trubshaw, Concorde's first test pilot, over the R/T. A lone Spitfire closed the show, celebrating its 70th Anniversary with a Victory Roll, this one flown by Barry Kensitt who had earlier piloted Concorde. Once again the VATSIM UK forum buzzed with superlatives - "spectacular"; "awesome", "amazing". The Sywell AFIS Controller for the evening logged over 30 individual aircraft he handled in the space of some 3 hours.

I'm sure that all my readers are already ahead of me – scarcely had the last byte of data transited the Ethernet before Sywell III was announced! Cix would again be the opening "act" and the VFFG the closer. There had been a significant change, however, which had the potential to transform the show. The new VATSIM client software, FSInn, had arrived in time for the first Sywell show, but the latest version had a peer to peer data transfer system which made tight formation flying possible for the first time. Previously, the client software, both Squawkbox 3 and FSInn 1.0 required the data passed from one aircraft to another to be sent via the server, which meant aircraft positional data could be delayed, depending on the amount of other internet traffic using the same wires. Delays of more than a few milliseconds resulted in the aircraft you were trying to form up on darting about the sky like a demented flea. Now your leader was reasonably steady and with practice, you could put his tail reliably in the same spot in your windshield for a formation flypast.

The level of professionalism moved up another notch – or ten. The Cix VFR Club created a special formation flying team, "2-4-Cix" comprising initially 3 Tiger Moths and three Chipmunks, but eventually 5 Chipmunks, (the Tigers just did not have the necessary performance to keep up with the Chippies). The VFFG with their Red Arrows and Concorde got serious at their Akrotiri training base in virtual Cyprus. New kids on the block were a pair of VC10s, piloted by the "Band of Brothers", and two DC3s who took the prize for possibly the tightest formation flying so far seen in the virtual skies. More remarkable perhaps is the fact that they had been flying on line for only four months. Bill had been their "instructor" in the relatively new Pilot mentoring scheme, so he had two reasons to be pleased with their display.

The display pilots had upped the ante, and the organisation was needed to match it if the event wasn't to end in chaos. The event had been advertised only on VATSIM's UK forum to keep spectator numbers manageable, and most of the spectators flew in from other airfields adding to the workload and organisation necessary. This year there was a Display Director as well as an Air Traffic Controller who operated the general frequency for visitors and a display controller who had a dedicated frequency for the display teams. Two of the "management team" had real world airshow experience, which proved invaluable. The TeamSpeak commentator was again needed for the spectators, this year in the person of Ruth McTighe, one of VATSIM's relatively rare lady members and a member of the International Board of Governors. Cix again had a ground coordinator for their team as well as this year providing the Joker – the link aircraft between displays – in the shape of a Spitfire flown, mostly upside down it seemed, by Tony Driver, and James Mindham had updated his "VUK" file of display aircraft. It seemed the stage was set for the biggest show yet.

It had to be another roaring success, didn't it? Yes it was, but it appeared that the event was reaching the limit of the technology, with some spectators (over 40 this year) and some of the display pilots suffering involuntary disconnections from the VATSIM server, or worse – computer crashes. With over 40 aircraft on the ground, plus more than 15 display aircraft, it was the biggest gathering of aircraft in one place at the same time ever seen in the UK VATSIM multiplayer environment, and possibly also a world record. No wonder the technology creaked a bit!

Yes, there is going to be a Sywell IV, and I'll be there again. ✈

THE SEVEN DEADLY SIMS

BY TERRY SCANLAN

The date, 5th November 2007, the time, 1000hrs local AEST (2300Z Sunday 4th) and the Seven Deadly Sims are assembled at Sydney's International Airport awaiting airways clearance to commence their seven day virtual 40,000 nm flight around the world raising money for charity.

"Sydney Delivery, QANTAS 25 requests clearance to Darwin".

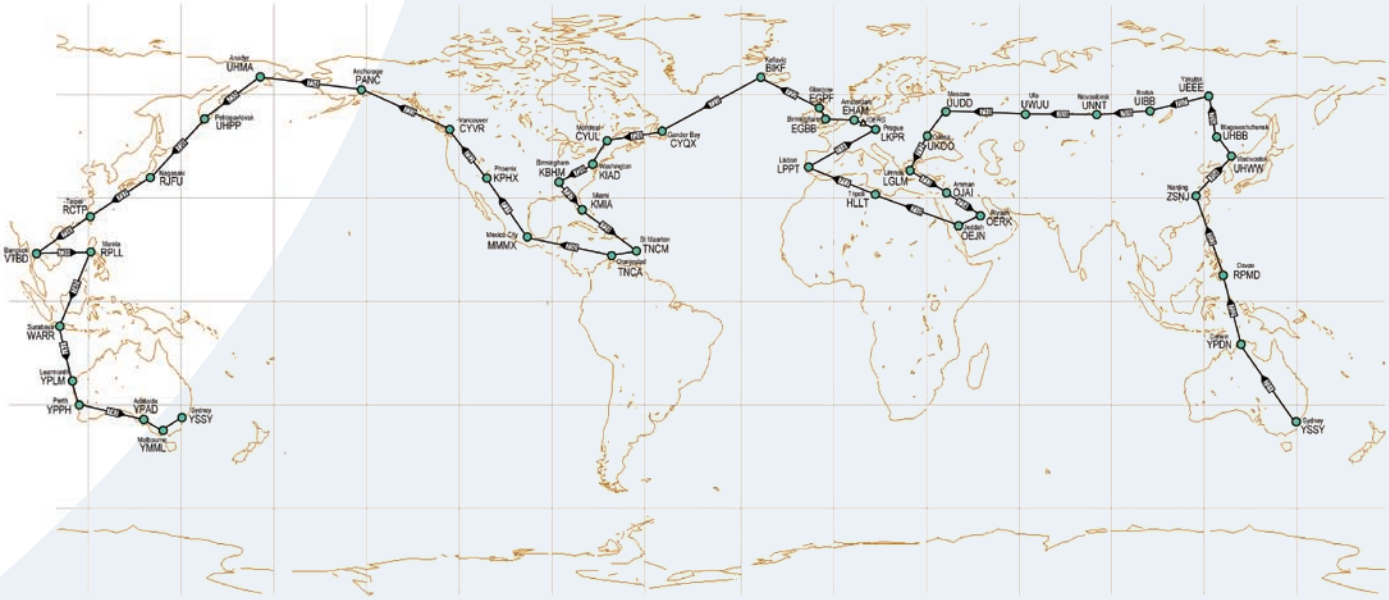
"QANTAS 25 you are cleared to Darwin via Richmond planned route, climb and maintain 5000 ft, Richmond 2 departure, Runway 34L, Squawk 3121, contact departures on 124.40 airborne."

That is the call to Air Traffic Control that will start the event rolling. World Flight Australia's B747-400, a full scale FMS (full motion simulator) accompanied by six other FBS (fixed base simulators) that have now joined World Flight Australia on its annual virtual round the world flight depart Sydney on a round the world charity flight.

AIR TRAFFIC CONTROLLER ISSUING THE CLEARANCE

The route takes the group out of Sydney in a northwesterly direction to Darwin then continuing northwards to Asia and then on into Russia traversing the Russian continent in a westerly direction. (see map). The 15 legs are flown in real time which puts the team back into Sydney on Sunday, 11th November at 2010hrs AEST (0910Z)

World Flight 2007



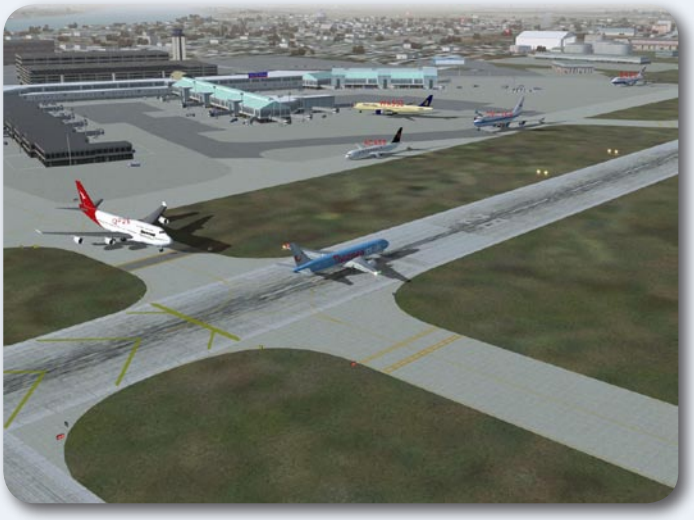
When planning the route this year, consideration had to be given for the different aircraft types that will accompany the group. Aircraft vary from the very large B747-400, A340 and B777 through to the B737 and A300 range of aircraft, some of which do not have the range of the larger aircraft.

The Sim operators have been planning for the round the world flight for several months now and have been busy getting crews together, organizing catering supplies, accommodation, looking for sponsors and ensuring that their aircraft are ready to fly on the day. In the case of World Flight Australia, a management team was formed several years ago and each of the team has their own responsibilities ranging from administration and fund raising, IT, route planning and crew scheduling. This arrangement frees up the operator to concentrate on getting the simulator ready.

The crews all follow real world procedures and carry out their duties on the flight deck as if on a real aircraft. On each of the aircraft you would expect to see the proper cockpit checks being carried out, briefings and call outs as practiced in the real world with great importance being placed on CRM (Crew Resource Management) where the Captain and First Officer discuss every decision and brief one another on each of the cockpit checks required.

The World Flight Group will often have as many as 30 other aircraft joining the different legs and this can pose a problem for the virtual ATC team that needs to ensure there is no break down in separation standards. In the real world it would be unrealistic to see 30 aircraft file the same flight plan and expect departure clearance when required and so ATC has to insert appropriate delays so that separation in the cruise is assured.

The flights are conducted online with the VATSIM network that now have 130,000 members world wide and the event is closely followed using many of the online tools available such as ServInfo or Google Earth with the VATSIM interface.



SOME OF THE WORLD FLIGHT GROUP

A GOOGLE VIEW OF THE WORLD FLIGHT GROUP

Seven Deadly Sims are made up from teams around the world including;

1. WORLD FLIGHT AUSTRALIA. Boeing 747-400
www.worldflight.com.au

WORLD FLIGHT AUSTRALIA'S FULL MOTION B747-400 SIMULATOR

World Flight Australia commenced operation in 2001 with the view of raising money for the Australian Royal Flying Doctor Service and in the six years of operation has raised $80,000 toward this worthy cause.

The Simulator owner, Matt Sheil of Sydney, has been constantly improving the B747-400 simulator with the addition of more software, additional computers and more recently the addition of a McFadden 310A Motion Simulator. Matt acquired three of these platforms with the view of keeping the two unused platforms for spare parts. He has had many offers to buy them but is reluctant to sell as he is aware of the difficulty of acquiring spare parts for the platform.

For the technically minded, the McFadden platforms have 17 inch stroke cylinders, 480VAC 3 phase 50amp 60hz for the power supply. A 20hp motor drives the hydraulic pumps and it has a 60 gallon hydraulic reservoir, 5 gallon accumulators, a Nitrogen backup tank with oil and air heat exchangers and limit switches.

For safety there is an emergency abort circuit designed so that it will not reach any unsafe or unstable condition.

Installation of the motion platform was a monumental task as the cockpit had to be removed from the mezzanine level and stored, the mezzanine level was then deconstructed and the platform was mounted on the floor beneath its original position.

There was quite a lot of testing of the motion platform to ensure that the motion computer and software were interacting correctly with the platform itself. After these tests the PS1.3 software was introduced and the platform was then "flown" using just a car seat fixed to the platform with a computer monitor and basic controls mounted in front of the seat.

THE MOTION PLATFORM PRIOR TO COCKPIT MOUNTING

The cockpit was eventually mounted on the platform for final testing to ensure that the motion platform could handle the weight and to also ensure that in extreme movements the platform and cockpit did not strike the floor or adjoining wall.

MOTION PLATFORM BEING CHECKED FOR ROLL AND PITCH EXTREMES

With testing complete the Full Motion Simulator was ready for WF2006, much to the delight of all the crew. 15 Crew will take the QF25 B747-400 sim on its round the world flight and each of the crew makes a substantial donation to the RFDS.

2. WORLD FLIGHT AUSTRALIA Team 737NG – Boeing 737
www.worldflightoz737.org/

The simulator used for this event is a fixed base Boeing 737-800 simulator. It is modeled as closely as possible to a Virgin Blue 737-800W aircraft in features and performance.

The simulator is currently in the final stages of construction and testing. The project to build the simulator was commenced in October 2006 by Nic D'Alessandro and Neil Brown of Hobart, Tasmania.

The simulator features some real 737 parts such as the yokes, columns and pedals, and also many synthetic parts that have been purchased from various suppliers around the world, some parts have been hand-made.

When fully completed the simulator will feature many immersive features such as multiple surround sound and vibration systems, 220 degree wrap-around visual system, authentic panels and controls, instructor station, dual EFBs, dual CDUs, and moving auto throttles.

The simulator is also fully configured for online flight on the VATSIM - **www.vatsim.net** - network with transponder and three comms channels.

The Sim is affectionately known as 'Simantha'

"SIMANTHA" A B737-800 SIMULATOR

With the simulator situated in Hobart, Tasmania, many of the 12 crew members will have to travel from as far as QLD to participate and others will travel a short distance across the strait from Melbourne. At this stage Team 737 have 12 crew scheduled.

THE AUSTRALIAN ROYAL FLYING DOCTOR SERVICE WILL BE THE BENEFICIARY OF ALL FUNDS RAISED ON THIS TEAM'S VIRTUAL ROUND THE WORLD FLIGHT.

3. WORLD FLIGHT SCOTLAND – A300B4-200

www.airbusa300sim.co.uk

World Flight Scotland is operated by Steve Masson out of Glasgow and is a full scale A300B4-200 series simulator. Steve came across a procedural simulator in 2003 and did not miss the opportunity to purchase it. Having had previous experience in creating generic simulators for training purposes he was well placed to bring this project to fruition. Using the procedural simulator as a guide he was able to then construct a full sized aircraft cockpit.

THE A300B4-200 SIMULATOR

Many of Steve's cockpit components came from an Indian Airlines A300B4-200 aircraft that was about to be broken up for scrap and so things such as the real cockpit seats have been incorporated into his sim.

MANY PARTS ARE FROM REAL AIRCRAFT

The ORBIS Flying Eye Hospital will be the recipient of funds raised during WF2007 and more details of his simulator can be found at his website.

4. UK WORLD FLIGHT – BOEING 747-400
www.747simulator.co.uk

JOHN DAVIS AND HIS B747-400 SIMULATOR

John Davis started planning for his 747-400 FBS in 1999 and for the next three years he acquired computers and tested software with his first part of the construction completed in 2002. John's brother Martin assisted in the construction and taught John many skills related to the project.

The simulator has many commercially available pieces of hardware and runs about 30 computer programs. A lot of the software was written by friends specifically for this project. John is very grateful for the help and assistance rendered to him by folk from all around the world.

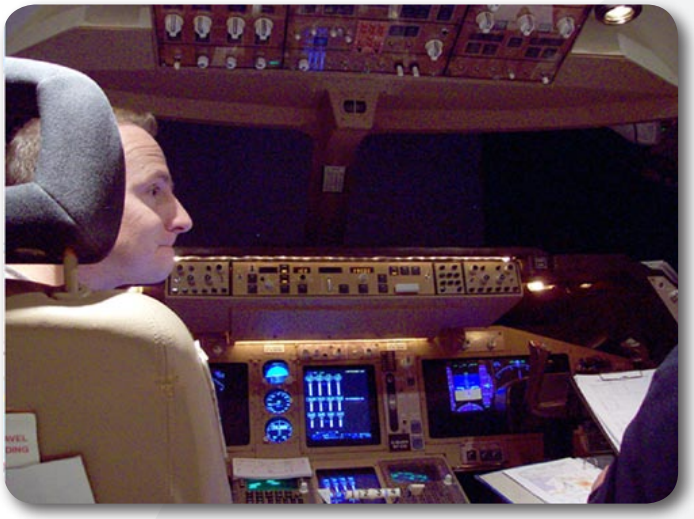
The UK World Flight team have selected the Warwickshire and Northamptonshire Air Ambulance as their targeted charity for 2007.

5. WORLD FLIGHT UK – BOEING 777
www.gary-oliver.co.uk/simfest/index.asp

Gary Oliver started building his B777 simulator in a garage in Camberley England over 6 years ago and is now well into the 10 year project. Realising that software on the market at the time was not adequate for his requirements he teamed up with other people to write specific software for his simulator.

They now have a custom B777 avionics suite and custom built hardware to create one of the most complete B777 homebuilt cockpits in the world today.

THE B777 COCKPIT



THE B747-400 COCKPIT

THE B777 COCKPIT NICELY LIT FOR NIGHT FLYING

Software Features Include:

- PFD / ND
  MFD synoptics can also be displayed on the ND.
- EICAS
  Fully integrated messaging system.
- CDU
  Multiple CDU's are supported.
- MFD
  Including Electronic Checklist.
- Sound Client
  for playing additional system sounds. Multiple clients can be run if req.
- Instructor Station
  aircraft loading/departure and flight tracking is controlled from here.
- Terrain and Weather Radar Generator
  Standard DEM files are used to build terrain data. The weather radar is linked to FS weather.

Other Features include:

- Custom written Autopilot
- Full Autoland
- GPWS
- TCAS
- System Simulation - Electrics, Hydraulics, Fuel, Air Duct Pressure, Cabin Pressure etc
- LNAV and VNAV

Gary's World Flight UK team are supporting Cancer Research UK.

6. WORLD FLIGHT USA – BOEING 737-800
www.wfusa2007.org/

The Simulator based in Washington DC is modeled on a Boeing 737-700 series aircraft. Built around the Microsoft FS2004 software platform, the simulator incorporates nearly all instruments, controls and switches found in a real Boeing airliner.

THE B737-700 COCKPIT FROM THE USA TEAM

The Simulator is currently undergoing a complete overhaul and is offline until October. The 2007 simulator will include a complete cockpit shell and functional overhead panel.

Microsoft FS2004 essentially provides the visuals, what you see out the window. Commercial add-on software is used for the flight model, glass cockpit instruments, real-time weather generation, autopilot and flight management computers.

Although not comparable with a multi-million dollar commercial simulator, the cockpit provides a realistic and immersive experience, requiring the pilots to follow real-world procedures and deal with real-world issues such as fuel and payload management, weather and route planning. Microsoft Flight Simulator 2004 contains all real-world navigation beacons, terrain and airports. This default environment is supplemented by commercial add-on scenery to provide an even more realistic virtual environment. Our pilots will be flying real-world procedures for all arrivals and departures utilizing charts provided by Jeppesen.

The simulator cockpit environment is built using commercially available panels and electronic hardware. The cockpit frame itself was built using good 'ol *Home Depot* MDF. The cockpit panels were provided by FlightDeckSolutions and the primary electronics by CPFlight. Two interface boards from CPFlight are used to drive all switches, Annunciator LED's and the Throttle. CH Products provided the Yokes and GoFlight hardware is used for the Rudder Pedals and engine switches.

THE CREW AT WORK BRIEFING FOR THE APPROACH

The simulator is operated by a network of five Intel based PC's. The primary MS Flight Simulator PC which provides the visuals and the flight model is based on the latest Intel Core 2 Duo processor technology. This ensures consistent frame rates of 30FPS even in the most complex scenery and weather environments. The four remaining networked PC's are used to drive the glass cockpit instruments, flight management computers, weather and ATC services.

Funds raised by the USA team will go to ORBIS INTERNATIONAL.

7. WORLD FLIGHT CANADA – AIRBUS 340-300(343)

www.worldflightcanada.com/modules/em1/

Tim Henry started his A340-300 FBS project in 2000 and is now almost 80% completed. Tim uses MSFS2004 for the visual system and primary software is all Project Magenta with plans to upgrade to more realistic AST software in 2008.

Two sound systems are active using 7.1 Surround Sound systems and three Subwoofers under the floor. Scenery, weather and navigational software are all add-ons. Electronic System boards are Phidget and KE-72.

Overhead panels are fully functional, as are the MCP, FCU, EFIS (2) CDU (3), dual rudder pedals and two Airbus joysticks.

Main views are from a Projector and curved acrylic mirror systems. Side views are on 42" LCDs. The next upgrade will be full IBL back lighting of all panels through FDS.

World Vision will benefit from the Canadian Teams round the world charity flight.

THE TAAATS CONSOLE WITH ELECTRONIC AND PAPER CHARTS

AIR TRAFFIC CONTROL 24/7

The flights are conducted on the VATSIM network in real time and operate 24 hrs each day for seven days and so there is a need to provide ATC (Air Traffic Control Service) for the World Flight Group at all times. World Flight Australia operates an ATC Center from itsheadquarters in Sydney and provides coverage for the flights where there are no local controllers available due to the local times not being suitable.

The ATC Center incorporates;
Three TAAATS simulators each with their own large LCD display, full global overhead paper enroute charts and a touch screen for VSCS air-to-ground and ground-to-ground communications.

Supplementary electronic Jeppesen global terminal and enroute charts with simulator overlay are displayed on the side screen.

A HEAVY WORKLOAD FOR ATC

The WORLD FLIGHT GROUP holds this event each year in November and is continually expanding its operation with the addition of more fixed base simulators.

Visit their websites above between November 5th and November 11th 2007 and enjoy the live cams with audio feeds, and vision from the flight decks! ✈

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THIS MONTH'S PRIZES!

Carenado's U206G Stationair 6 II

This airplane is the real thing! Still it is easy to fly, just like the real one. Nevertheless the airplane is filled with all features for IFR flying and of course includes special effects like moving pilots and many other eyecandies! A very high detailed model with all kind of major details like Interactive highly detailed virtual cockpit, full 2D panel as well as a special VFR version of the 2D panel, full moving parts and retracting gear (amphibian version) and an awesome load of perfect tiny details: Real propellor, 3D modeled full pilots animations, full dynamic effects (shines over the body, night effects on panel) etc.

Realistic performance based on original manufacturer's documents and experienced 206's pilot observations.

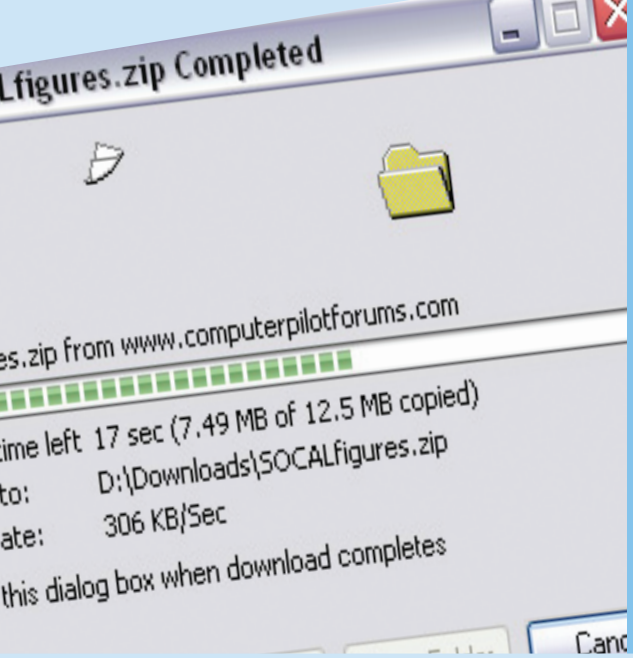
MegaSceneryX: Southern California

The MegaScenery Team raises the realism ante again with the first "LARGE AREA" MegaScenery release - MegaSceneryX: Southern California For Microsoft Flight Simulator X. This is our most asked for scenery from flight simmers around the world... and it's now here!

At 18,000 square miles this new title for Flight Simulator X displays scenery at 1.19 meters per pixel - 16 times the resolution of Flight Simulator 2004. MegaSceneryX for FSX is now hyper-real and FINALLY gives you the scenery world you've dreamed of flying on your PC.... that is, a scenery world that is pretty much as real as real life itself!
Flying VFR over Southern California with MegaSceneryX now takes on a whole new level of realism and clarity.

Drawn 30th October, 2007
Winners selected randomly from current subscriber database

August Issue Winners...
David Spark (UK) - William Hay (New York)



FREEWARE FRENZY

Top Downloads at a Price that is Hard To Beat!

FREEWARE EXPLORERS THIS ISSUE: DAVID WILSON-OKAMURA

By popular demand, Freeware Frenzy has returned to Computer Pilot magazine! Every 2nd issue, we will track down the best freeware downloads available for a wide variety of civilian and combat simulators. Every add-on mentioned in this column can be yours for FREE (Internet connection required) thanks to the great community of freeware developers devoting their time to creating awesome simulation masterpieces. We salute you!

Junkers 52/3m, Version 2 - FS2004 Aircraft (works in FSX too)

Filename: junkers_52_V.2.exe **Filesize:** 35.1 Mb **Author:** Oliver Fischer **Available from:** junkers-52.de

In the 1930s and war years, "Tante Ju" was the face of German aviation, civilian as well as military. Originally designed for commercial use, ferrying cargo and passengers, the Junkers Ju 52 was purchased by airline fleets around the world. During World War II, it was produced in massive numbers for the Luftwaffe, which used the sturdy workhorse to carry troops and supplies, drop bombs, and even explode magnetic mines. Its most distinctive feature was a nose shaped like an old bottle cap: once you know what to look for, you'll notice it everywhere in war movies and old news footage. In Flight Simulator, the Ju 52's closest cousins are the Douglas DC-3, which played a similar role for the Allies, and the Ford Trimotor, which it resembles in having three motors (that's what "3m" stands for) and corrugated skin. If you like these default planes, but want something with a more interesting instrument panel, I recommend this model by Oliver Fischer. It has custom gauges, custom sound, and a full virtual cockpit. Several liveries are included with the initial download, and you can get more by searching the **avsim.com** and **flightsim.com** file libraries for "junkers fischer". There's an installer for FS2004, but I've tested the aircraft in FSX and it works there too. (Techniques for converting FS2004 planes for FSX were described in the January and February 2007 issues of Computer Pilot; this model is one of the easier conversions I've seen so far.)

Town of Nantes, France - FSX Scenery

Filename: nantes-ville.zip **Filesize:** 81.4 Mb **Author:** Marc-Henri Guitteny **Available from:** avsim.com

It's been a year now since FSX started appearing on store shelves, but designers are still learning how to make use of all the new features. This scenery, by veteran designer Marc-Henri Guitteny, combines several of them in one project. Various structures are modeled in 3D, including downtown skyscrapers, dockyard shipping cranes, old churches, and medieval castles. (A map is included, so that you can know what you're looking at.) Custom terrain mesh is provided, and custom autogen so that the generic buildings look more French. Rivers have been remapped to follow more closely their real-world originals, and so have the roads. All of this was possible, of course, in FS2004: it was just a question of whether anyone would do it for a particular region. What's new here is the moving road traffic (a feature of FSX that some people dismiss as eye candy but which I think brings a city to life) and 120 square kilometers of photographic ground textures. These are twice as detailed as what we could usually get in FS2004, and there are separate textures for night flying and different seasons. (Most photosceneries only have one season.) This is an altogether impressive package. An earlier project, by the same author but smaller in scale, is available from **http://marcoh.gratisim.fr.** This depicts the French coastal town of Le Croisic, and demonstrates yet another new feature of FSX scenery: transparent water at the shore's edge.

Tow-Plane Tutorials - FSX Tutorials

Filenames: tutchtwp.zip, tut_cutp.zip, tut_twpl.zip **Filesizes:** 1.2 Mb, 1.2 Mb, 1.4 Mb
Author: Thomas Murr **Available from:** avsim.com

A whole category of simming that has taken a big jump forward with FSX is gliding. Aircraft are more responsive now to air conditions, and it's much easier to locate thermals visually. For the first time (at least in the default sim), you can also climb to altitude by using a tow plane instead of slewing. This works quite well, and requires some care lest you snap the tow-cable. But there's no mechanism for changing the tow-plane (it's always the Maule Orion) or for steering it (so that you can release the glider over the airport, or in a thermal). Happily, there are remedies for both problems. These short tutorials, written in German and English, show how you can select a different tow-plane (by editing a couple of text files) and also steer the tow-plane in a circle. (In its default configuration, the tow-plane always drives ahead on a straight course.) Choosing a new tow-plane is relatively simple, and the tow-plane can be any powered aircraft. I know of one pilot who now uses as his tow-plane the default Douglas DC-3, which in its military incarnation, the C-47, towed gliders on D-Day across the English Channel. To make it look authentic, you'd want to get the C-47 repaint Mark Rooks; search the flightsim.com file library for dakotax.zip. Murr's method for steering the tow-plane is more involved than the one for changing the tow-plane, because it requires you to intervene for every flight; you also need to have the Deluxe edition of FSX and install the SDK that comes with it. To date, though, this is the only way to simulate one of the standard techniques of glider flying, in which the tow-plane circles over the landing field to gain altitude.

Rio de Janeiro, Version 8 - Scenery for FS2004

Filename: riodejaneirov8.zip **Filesize:** 37.5 Mb
Authors: Newton Drumond, Fern Marques, Dave Pearce **Available from:** avsim.com

A full year after its release, FSX still seems like the "new" version. Meanwhile, payware and freeware designers continue to develop new products for the "old" sim, or to refine products that (we thought) were already mature. This is an example of the latter category. For Rio, the default scenery is pretty good on its own, and if you've never visited it in the sim, you have a treat in store. Physically, Brazil's former capital has everything that makes a place interesting to explore in the simulator: mountains, water, a major city, and (in this case) a giant statue of Christ the Redeemer overlooking the city. Now, add to this a detailed terrain mesh (which makes the mountains even more spectacular), photographic ground textures, and even more 3D, landmarks. If that's not enough, there's also custom AI for three of the city's airports, including helicopters. (You almost never see AI helicopters in Flight Simulator, even in payware scenery, because the sim has to be tricked into letting them fly.) Normally all of this detail would exact a framerate penalty—especially when, as in this case, the details have been added in stages, over a course of several versions. However, with this version the designers have remade all of the 3D, models with framerates in mind, so that you can enjoy the scenery even if you don't have the latest hardware.

Dynamic Campaign Generators - IL-2 Sturmovik, Pacific Fighters, CFS2

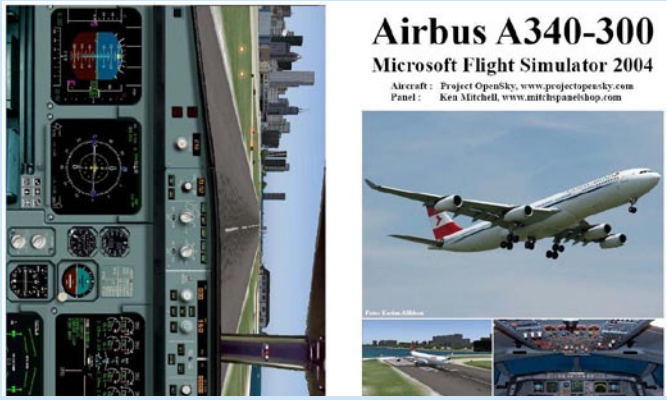
Filesizes: 4.3 Mb (IL-2), 1.9 Mb (CFS2) **Authors:** Paul Lowengrin **Available from:** lowengrin.com

It's not obvious, perhaps, from the name, but this is a tool that can be used on two levels. For the gamer who just wants to fly more historical missions from World War II, the current version of Dynamic Campaign Generator will add campaigns for Norway, Italy, Finland, Tunisia, Burma, and Normandy. On the same website, you can also download campaigns for various battles in China, the Pacific, Africa, and Spain (where, in the late 1930s, Germany developed the air tactics that it would employ against the Allies in World War II). With this one key, then, the novice can unlock a lot of doors, and keep themselves busy, flying and fighting, for many happy months. That's one level, then. For the experienced user who wants to develop his own campaigns, the Dynamic Campaign Generator is a sort of wing man, to aid him in making complex missions with a minimum of hair-pulling. The idea of a dynamic campaign is that what you do in one mission affects the conditions in the next mission. For example, if you shoot up a column of trucks in mission #3, the same trucks shouldn't be driving around in mission #4.

Checklist Manuals - For FS2002, FS2004 and FSX

Filename: search for author's name **Author:** Werner Schott
Available from: avsim.com

Werner Schott seems to have flown almost every plane for Flight Simulator. Default, payware, freeware, it doesn't matter: not only has Schott probably flown it, but he has also put his accumulated knowledge down on paper and compiled a checklist for it. Granted, most aircraft come with a checklist in the kneeboard. But these usually have two shortcomings. First, they can be vague about important details. Second, they weren't designed to be printed out. Schott's checklists usually can be printed on four pages, and bring together in one place the essential information from various sources: kneeboard checklist, flight notes, speed placard, personal experience. If you are learning a new plane, and can't find some important number (such as the recommended settings for cruise flight), search in the AVSIM file library for schott plus the name of the manufacturer, and see if he hasn't written a checklist for your aircraft. As of this writing, he has compiled more than 150 of these checklist manuals, and new ones are coming out every month.



Splash Screen Random Creator - Utilities for FS2004

Filename: splashcreator.zip **Filesize:** 0.4 Mb **Author:** Ivo Trowitzsch **Available** from: avsim.com

This very small program was written by someone actively involved in making AI traffic for Flight Simulator. During the testing process, he found himself watching the splash screen a lot, got bored with looking at the default picture, and decided to write a program that would rotate through his screenshots instead. The result is relatively simple to use: you put the program in its own folder, edit a text file so that it knows where to find FS2004 and your screenshot files, and then run the program whenever you want to launch Flight Simulator. Each time you load, it will display one of your screenshots with the "Flight Simulator 2004: A Century of Flight" logo superimposed, and if the screenshot is the wrong size it will compensate for that too. (Your original screenshot will not be altered, however.) Simple, powerful, fun.
Another way to enjoy your screenshots is with a little-known program from Microsoft. It's called "Wallpaper Changer," and it's quite small: only 183 Kb. To find it, Google site:microsoft.com "wallpaper changer". That should pull it up for you. Once installed, the program sits in your system tray. Configuration is extremely simple: point it to a folder of GIF or JPEG files, and it will display the images in it as your desktop background, one at a time until it gets to the end of the list, and then it will start over. I've used this program for three years now, and it's a fun way to relive old flights through screenshots. I like to set my change interval for fifteen minutes, so that I have new images on my desktop throughout the day. But if rapid change makes you nervous, or you want to study the images one at a time, you can set the change interval for as long as a week. There's also an option to view the images all at once, as a slideshow.

Piasecki H-21C - Helicopter for FSX

Filename: h21c_msfs2004_mickposch_v1.zip **Filesize:** 42.6 Mb **Author:** Mike Posch **Available from:** avsim.com

We conclude this month's Freeware Frenzy with yet another plea to give helicopters another chance. Yes, they take some getting used to, but they are much more flyable in FSX than they were in FS2004, and for exploring scenery they are simply unbeatable. This one looks ungainly from the outside—it's nickname was the Flying Banana—but inside it has great window views, clear gauges, and because it has two rotors, it's actually more stable than your standard single-rotor helicopter. This particular model has a very sharp-looking virtual cockpit and comes with a float version in case you want to land on water. It has its own sounds, and a more complete manual than I've seen in some payware. (The original version, for FS2004, is still available, but it doesn't have a virtual cockpit.) The same author has also made a specialized helicopter scenery for FS2004, called North Haledon, which fills a small city in New Jersey with various surfaces to practice landing on.

Dr Betzy Wong, Flight Sim Therapist

BY BILL SMITH

First Session: August 1, 2004.

'Why don't you begin by telling me something about yourself Michael?'

My hands sweated and I coughed nervously as I gripped the cracked vinyl covered arms of the chair. Feeling far too anxious to speak, I was secretly questioning the authenticity of the array of framed diplomas on her office wall.

'You should know that I can't help you unless you talk to me Michael. You shouldn't waste your father's money like this' she said sharply. Then as if making a concerted effort to hold her irritation in check, she asked me much more gently 'Why don't you start with something simple… have you always lived here in Hong Kong?

'Yes Dr Wong.'

'Call me Betzy. Please continue…'

'I was born and raised in Kowloon'. I am 22 years old and I don't…'

'Don't what?' she snapped.

'I don't have any girlfriends or go to movies. I don't play soccer or basketball. I don't like sports at all, or watch TV. I didn't finish school and I don't have a job. But I like to play on my flight simulator. I fly it every day and every evening; 15 hours a day except for Chinese New Year when I go out for dim sum with my family. I like flight sim very much and I am very good at it.

'Well it's good to have a hobby Michael, and it sounds like there is not much I can teach you about flight sim. So my usual simulator sessions are probably not much use to you.' Then she added,

'Why not tell me why you think your father wanted you to come and see me?'

'My dad says that I suffer from arrested development'.

'Please go on…'

I stared at the well-worn flight sim computer on Dr Wong's desk as over the next fifty minutes I managed to tell her most of my life story. Inside her shabby consulting room I had to speak quite loudly just to be heard over the noise from her air conditioner, which was losing a battle with the stifling mid-summer heat. Dr Wong's interview technique was like something stolen from an old Jackie Chan police movie except that instead of a uniform she wore a lab coat while single-handedly playing both the good cop and bad cop roles. I wondered privately if it was just the heat that was causing Dr Wong's sudden mood swings or something else? Whatever the reason, I found her apparent mental instability quite unnerving.

I told her that I had lived with my mum and dad in the same apartment block in Kowloon for as long as I could remember. Up until July 1998 we lived right under the flightpath of the aircraft approaching and departing the old Kai Tak airport. My earliest memories are of the whole apartment shaking and the windows rattling every two minutes as huge airliners roared overhead. Even when I was very young, if the wind was blowing from the south when I came out of school, I used to rush home to watch the planes coming into Kai Tak. From our front window I could almost reach out and touch them as they roared overhead and then disappeared from view behind an eight-storey office building two streets away. I loved the fact that in spite of the variable wind velocity, all the aircraft always followed exactly the same track across the sky. The sound of the planes sent me to sleep at night and shook me awake again in the morning. The same rhythmic regularity of aircraft traffic that gave me so much comfort had the opposite effect on my poor mother. She badly wanted some peace and quiet and for many years looked forward to the day that the new airport would open at Lantau Island. Unfortunately, when that day finally arrived things unexpectedly became much worse for her. That's because I went nuts.

Tell me what happened that day' said Dr Wong.

'I don't remember.'

It was true that the events of that day and for the next few months are completely blocked from my memory. All that I knew was what my parents told me later. Apparently I could not sleep on the first night that the planes stopped flying over Kowloon. The next morning my mum found me on my bed rocking back and forth. I could not even speak and my dad was obliged to take time off work to get me to a doctor. I had to be sedated before being sent back home. I could not continue my schooling and I lost all track of time. It wasn't until months later, sometime in 1999 that I started to speak again but I never left the house. My dad borrowed some money to buy a computer and some games to help get my mind functioning again.

'Is that when you first started using the flight simulator?'

'Yes Dr Wong…I mean yes, Betzy'

'It is a very complex program for a novice' she said with a terseness that seemed quite unnecessary. 'You must have found it very difficult to learn to use'.

'No, not really. I am good at mathematics and after all, aviation is all about numbers and applied physics. It is all very logical, and anyway FS98 had step-by-step lessons included. I learned quickly and as soon as I could fly the Cessna properly I moved on to try the adventure called "Hong Kong Checkerboard Approach". This was a short 737 flight starting at Kai Tak Runway 13. After takeoff I had to fly a wide left-hand turn over the sea at 6000 ft then back in and over Cheung Chau. In order to successfully complete the adventure I had to strictly follow Air Traffic Control instructions and slow to 200 knots before making a steep procedure turn for a heading of 88 degrees over Kowloon. Finally there was a steep right hand turn before touching down again on Runway 13.

'Yes, yes, I remember it'

'Sometimes there would be a random autopilot failure which made the approach very challenging. At the end of the exercise, an instructor's voice would comment on my flying. I found it very satisfying and I flew it again and again.'

Dr Wong interrupted me by saying 'Michael, I can remember that adventure. But I also remember that FS98 was the first flight simulator program with worldwide scenery. So tell me this; after you had mastered the Hong Kong approach, what was the first destination you flew to?

'I didn't fly anywhere else. I just flew the Hong Kong approach over and over, perfecting it. Sometimes I set the weather to low visibility conditions and I still flew the approach perfectly. Every time!

I always had the sound turned up quite loudly so that it reminded my of when the planes used to fly over our apartment. I found the noise of the repetitive circuits and landings very comforting but it drove my mother into a state of nervous exhaustion.'

'What about your father? Did he express any concern about your apparently obsessive behavior at that time?'

I explained to Dr Wong that my dad wasn't bothered because he left for work at 6.05am and did not return home until 8.15 PM. But my mother was at home with me most of the day. She only managed to cope by buying earplugs and lots of alcohol. She became increasingly distressed by my obsessive-compulsive pattern of flight simulation and one day, in a state of complete confusion she poured vodka in her ears and swallowed the earplugs. She very nearly choked to death and when my dad got home that night she broke down and begged him to do something.

'So what did he do?'

'He bought a set of headphones for me to wear so that the noise would not disturb my mother. He also gave me a copy of the latest flight sim program, FS2002. He said that with 20,000 airports to choose from it would add a lot more variety to my flight simulation. Kai Tak was still there in the scenery set, but as it was now closed, there were no buildings or runway lights.'

'And how did that make you feel?' she asked.

'At first I wasn't happy. I had to begin all my flights at the new Airport, Chek Lap Kok, and fly across to Kai Tak. I had to learn to fly the same approach without any navigational aids. Then I would touch down, retract the spoilers immediately, and power up while simultaneously half retracting the flaps for takeoff. I flew south, then east and then landed back at Chek Lap Kok a few minutes later. To begin with I found the presence of other traffic overwhelming and I was confused by the communications from the air traffic controllers. There was ground control for the taxiways, then tower control on the runway, then departure control, approach control and then tower control again on final approach. Sometimes I was ordered to go-around because of conflicting traffic on the runway'.

'How did you deal with this new challenge?' she asked.

I didn't answer. She insisted that I answer her question. I did not want to admit that I sometimes cheated on final approach, simply by turning the simulator's time clock forward by one or two seconds thus causing the conflicting traffic to simply vanish. I felt ashamed when I finally admitted to her how I completely avoided missed approaches at Chek

Lap Kok. She spoke to me sternly and reminded me that flight sim is not a game.

‘Microsoft goes to great lengths to make flight sim realistic. You can’t just go on avoiding conflicting traffic just by making it disappear.’

Then she surprised me by saying ‘You know Michael, you look just like your father and I don’t mean a physical resemblance. I mean that in my brief meeting with your father I noticed that he never looked at me when he spoke. I see now, that is your habit too. Did you know that?

(I did not know that!) She then said that we only had a few minutes left to talk until the end of our first session and she needed me to tell her a little bit about my father.

‘What does he do for a living? Is he involved in aviation?

‘No’.

I told her that until very recently my dad was a captain on the Star Ferry. He carried passengers across the harbor from Wan Chai to Tsim Sha Tsui. Then, ten minutes later he sailed from Tsim Sha Tsui to Wan Chai. And then back again. Back and forth, six days a week for as far back as I can remember. Until he had his accident.

‘A ferry accident?’

‘No, he was at home standing on a chair looking to see if my mum had any whiskey bottles hidden on the top of the wardrobe. She opened the bedroom door at just the wrong moment and there was a terrible crash. I didn’t actually hear it of course because I was wearing my flight sim headphones. Anyway, he hurt his back quite badly and cannot go back to work until he gets a medical clearance. Worst of all he won’t be able to travel with my mother on the plane to Sydney in a couple of weeks. It was to be their first overseas holiday ever, and my mother was looking forward to it so much. When she insisted that I take my father’s place and go with her, I freaked out.’

The vibration of the air conditioner in the wall of Dr Wong’s office suddenly seemed to get much worse and she raised her voice a few more decibels before asking me

‘So you’ve never travelled on a plane before?’

‘No! I once took the bus to Stanley Markets’ I shouted back at her, ‘but that’s as far as I’ve ever been. I’m terrified at the thought of leaving Hong Kong but I must go for my mother’s sake. I need help! My dad can’t afford a psychiatrist but he saw your advertisement at the bus stop and came here to ask if you could help me.’

‘Well I’m the best in the business, she said proudly. ‘And the cheapest!’ she said as she stood up and banged the air-conditioning unit with the heel of her closed fist.

The compressor shrieked and then the aircon unit went dead. Dr Wong swore in Cantonese before addressing me again.

‘We only have time for one more session before I leave for Osaka on business. Come back here on Monday the ninth at 2.00pm. Don’t forget to bring my fee and don’t worry, I’ll make sure that you get on that plane with your mother.’

I only wished that I could share her confidence.

To be continued…✈

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Citation X Review

BY ROB SCOTT

The Citation X is a medium sized business jet aircraft, and is currently the fastest flying civilian aircraft in the world, reaching speeds of up to Mach 0.92 (700 mph). It is powered by 2 Rolls Royce turbofan engines and so far around 250 have been built since production began in 1996. Now, Wilco Publishing and FeelThere give you the chance to fly this speeding jet in Flight Simulator.

Production was scheduled to begin in 1995 but the development process hit several delays along the way. The first customer was the golfer Arnold Palmer, who in September 1997 set a speed record in the Citation X of 473 knots. In October 2000 Cessna announced that as of January 1st 2002, all new Citation X's would have a 5% increase in thrust, a 400lb increase in MTOW and improved avionics.

The Citation X has a service ceiling of 51,000 ft and a range of 3250 nm (6020 km). The aircraft can perform a number of Trans-Atlantic routes (New York-Paris) and most Trans-Pacific routes. It can also fly between any 2 airports in mainland USA, which makes it the ideal aircraft for the business tycoon on the move.

This offering from Wilco Publishing (developed by FeelThere) is part of their 'Luxury Aircraft Collection' and has been Pilot-In-Command approved, so there is quite a lot to live up to. This package is compatible with both FSX and FS2004 and comes as a download for US$39 or a boxed version for US$43 (these prices are taken from the Wilco website so they may vary from retailer to retailer). For the purposes of this review I will be looking at the boxed version for FSX.

Product Features

Some of the features of this package include a luxury VIP interior which includes a camera view from inside the VIP cabin. The cabin itself looks realistic and has a monitor displayed next to the pilot's door which gives the passengers important flight information such as speed, altitude and ETA. The package boasts that the flight dynamics have been tested by an active Citation X pilot, so you can be sure you are purchasing a realistic simulation. Testing by active pilots is becoming more and more common amongst add-ons, but telling you about it on the box serves to reassure you a little bit more that your money will be well spent. There is also a working fight attendant which moves around the cabin carrying out different duties at each stage of flight. I've not seen this before in an add-on package, so it was something a little different and it didn't seem to kill my frame rates either. The Citation X comes with a full glass cockpit with an advanced digital avionics suite, all indicators that this is quite an advanced aircraft. At four major airports around the world (Paris Le Bourget, Frankfurt Main, London Heathrow and JFK) and at Santa Monica airport when you park in designated areas (shown in the manual) and tune NAV 2 into 117.50 you are given a VIP welcome of limos and red carpets, although this was a little tricky at times to get the aircraft lined up properly. This feature isn't just specific to the Citation X either, you can use it with any aircraft as long as you park in the correct area. The boxed version also comes with a printed 66-page manual written in English and French which includes a full tutorial. Although the manual does its job, it wasn't to my liking. I prefer manuals to be written in a 'We are flying from A-B, this is how you do it' format. This manual doesn't seem to be laid out in a methodical manner. Normally the tutorials would be at the end of the manual, but this one is in the middle between the information about how to operate the plane. The tutorial is laid out in much the same way in that it guides you through all the start up procedures and taxi to the active, and then it goes on to tell you where you are flying from and to, and how much fuel you need. Surely that should have been at the beginning? I strongly suggest that before you attempt to fly the aircraft you should read the manual through a couple of times. I didn't do this to start with and it got frustrating trying to find something when it wasn't where I though it should be.

Complaints aside, the tutorial is good and helps you to get to know the aircraft well. I didn't like the way the tutorial came across. Rather than it being written down 'to get the engine's started do this…' it's written like your best mate is explaining something to you. For simmers that aren't used to using more complex aircraft the tutorial would come across quite well, but personally I didn't like it. As I mentioned before though, it does do its job in showing you how to operate the aircraft.

Flying Performance

So how does the Citation X perform? Very well is the answer. Once you have read the manual through and understand how to operate the aircraft, it's a lot of fun. The advantage of this biz-jet is that it can land on most runways, so you can fly between major airports or in-between the municipals and it'll be right at home doing either. Taxing around the airport is easy, the Citation X will move around quickly at idle thrust. During the turns just make sure you slow right down or you may end up digging the wing into the ground! After takeoff, which comes very quickly, she climbs like a rocket and you will need to trim down quite a bit just to maintain a rate of climb that won't alert NASA. Achieving the service ceiling of FL510 is very easy, no need to step climb. Flying by hand is very rewarding and fun to do because the model is so stable at all phases of flight, and for some approaches it's a lot more fun than allowing the autopilot to do it.

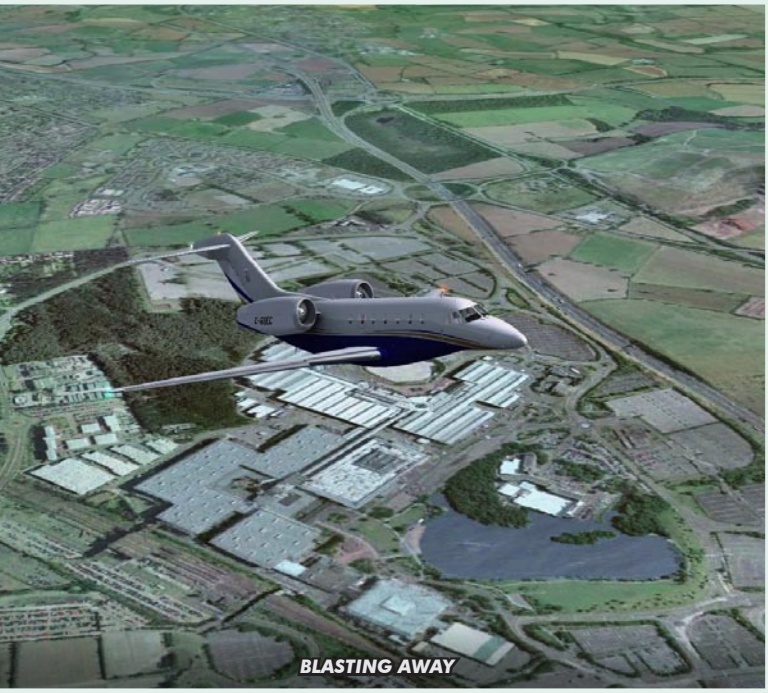
2D PANEL

STUNNING EXTERIOR

VIRTUAL CABIN

MY NEW OFFICE

PILOT'S VIEW OF THE CABIN


BLASTING AWAY

SMOOTH LINES

JUST CRUISING

SURE LOOKS FAST

VIRTUAL COCKPIT

DESCENDING TO FINALS

WELCOME!

Using the autopilot is fairly self-explanatory, but on this aircraft the controls for the heading and altitude are not on the panel, but on the pedestal. I'm more used to them being on the panel, so when the atc is giving instructions, it became a bit annoying have to constantly switch to the pedestal to change direction or flight level. This just seems to over complicate things a little, especially when in the real world there are two pilots flying the aircraft. Maybe a compromise between realism and simplicity would have been good here.

When you are flying the Citation X by hand, you certainly get the impression that you are flying a fast and powerful jet, maybe even a little over powered, but it's still lots of fun to fly. No matter what stage of flight you are in, there is always something to do. There isn't an auto-throttle so you need to monitor that constantly to make sure you don't over speed because this aircraft likes to go fast. The throttle is a kind of hybrid between Boeing and Airbus; like Airbus there are detents (CRU, CLB, TO/MC and MAX, but like Boeing there is an area of free play to enable you to manage the speeds more accurately.

When you are set up correctly for the cruise, it's time to head to spot view and have a look at the exterior of the aircraft, which doesn't disappoint. You can tell straight away the amount of hard work that has gone into this aircraft to make it look as good as it does. The lines are very smooth and the liveries that come with the package are simple yet make the Citation X look so much better. If you want to try creating your own paint-job there is a paint kit available for free download from the Wilco website.

Inside the aircraft both the 2D and virtual cockpits are nice, but didn't bowl me over compared to the cockpits from other add-ons I own. A plus point for the cockpits is that they don't hog resources and my frame rates remained at a good level throughout all phases of flight. When in the VC however, some of the gauges were difficult to read which meant I had to go back to the 2D panel to check them. The main gauges though were easy to read so switching cockpits doesn't happen too often. On my version I noticed that the ADI didn't work, it was always lop-sided. I re-installed a couple of times and still no joy. Another problem I encountered with the cockpit was that when I selected 'cold and dark start-up' from the configuration utility the right EICAS display never loaded up, but when I selected the other start-up options it did. Also when trying to start the aircraft as described in the manual, it would never fire into life for me. Every time I loaded the aircraft I tried to start the engines the correct way, but each time I had to resort to Ctrl+E to get them going. During flight for some reason this package caused FSX to freeze for long periods of time (10-15 minutes) and then just fire back into life again as though nothing had happened. This doesn't happen with any other aircraft I have so maybe it's just specific to this package. Then when I've finished a flight and I try to exit back to the FSX main menu FSX will crash every time without fail. Again, this didn't happen before I installed this aircraft and only happens with the Citation X so might be a specific problem to the package? Might be battery related issues too?

Debrief...

So would I recommend the Citation X to other simmers? Although I may seem to have done nothing but moaned about the bad points of the package, the good points outweigh them by a long way. If you can see past the niggles of FSX freezing up, the EICAS not loading from cold and dark, and having to resort to Ctrl+E to start the engines you will have a lot of fun with this add-on. I feel that the price is a good reflection of the quality you get with this add-on, despite all its little problems (which can be fixed by an update if one comes). The money you will pay for this is money well spent, and if you like flying the default Lear or CRJ in FSX, then buying the Citation X would be a good choice. Available at all good flight sim retailers. ✈

FS DISCOVER!

REVIEW BY GENE DAVIS

Landmarks and geographic locations can, at times, be overlooked in MSFS simply because one may not know exactly where they are at, or are foreign to the area. No matter what version of MSFS you use there are many little things called Easter Eggs; they are locations and objects that were placed during the sim's development by the designers as an added bonus. There is little published about these "Easter Eggs" and they are usually found totally by accident. The folks over at Flight 1 have a wonderful program called FS Discover! What this program does is give you access to not only geographic locations and landmarks, but also an easier way to find those little Easter Eggs hidden throughout the virtual world that is Flight Simulator!

What It Is and What You Get!

FS Discover is a unique little program that gives a welcome environment to that of the VFR flyers in MSFS by displaying geographic information and labelling for airports, rivers, cities, landmarks, and pretty much anything else that has a name and resides in the Flight Sim scenery world. It essentially gives you a sight seeing guide from the comfort of your own virtual cockpit by pointing out locations in text on your screen when looking out of your aircraft. In total there are over 3.6 million geographic features and over 1900 points of interest in FSX and over 600 points of interest in FS9.

Not only does this program offer a virtual sightseeing guide, it also offers its own Flight Planner and a simplistic map program that also displays all of above information in a quick and easy to use interface. Most amazing is the inclusion of the visual representation of your flight plan when looking out of your cockpit. This coupled with FS Discover's flight planner makes this a fantastic add-on. You can

also search for specific locations in map mode; this not only includes airports but also geographic locations and points of interest. So, if you are flying in Egypt and need to know what direction the pyramids are, simply go to the map program and do a search for the Pyramids of Egypt.

Along with the map, the tour guide and the ability to tie in a flight plan FS Discover also incorporates a simple to use autopilot that will fly whatever legs you have set up in your initial flight plan.

Setting It Up

Installing FS Discover to either FS9 or FSX is relatively easy, its getting into it understanding how it works is the hard part; at least it was for me! This is one that I thought I could go into without reading the included manual and my end result was that I didn't think the program was working correctly.

When you go to activate the program, you bring down the drop down menu and activate each option by choice. The choices are geographic locations, airports and points of interest;

Initially I was only seeing the geographic locations and the airports. So, figuring I had something wrong I set out to figure it out and I was able to narrow it down to the delay for the program to cycle through the POI and refresh them on the screen; I had originally set it up to static thinking that would leave them in place, this option should be set to none if you want them to remain in place. Otherwise you will find that as you fly over each location they will cycle off and on and that can get a little confusing.

The next problem I had was that with the default distance for each option set at what it was I had an enormous amount of information being displayed over the surrounding terrain masses. In total there are over 50 different options to select under the options screen, but be warned that selecting to many can create problems, at least it did for me. What I ended up doing was only selecting those related to the United States, rather than selecting the world data files. This allowed me to use FS Discover without any issues, selecting both sets of files resulted in a CTD in FS9. So, my next fix was to set the distance to about 10 NM, this was because with the figures set where they are at you get an enormous amount of data being displayed at once, so giving it a lower visibility arc from inside the cockpit was the best choice for me.

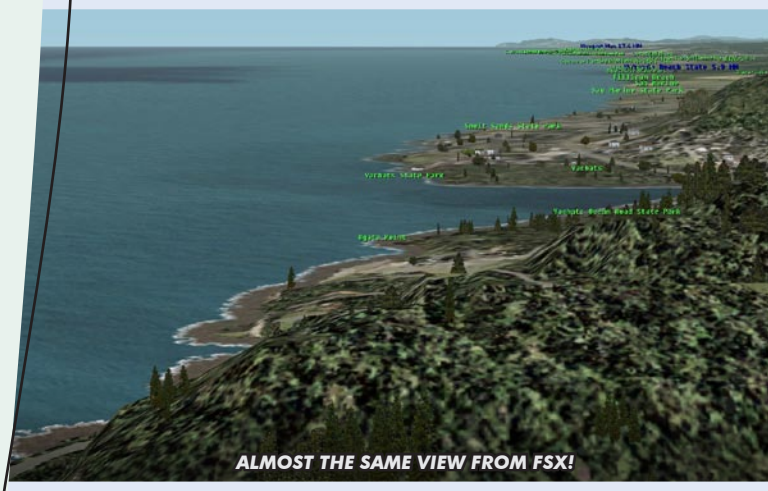
Setting up the program is really a matter of preference and depends on what you want to see at any one time. At any given time there can be an enormous amount of data being displayed over the Flight Simulator scenery and depending on how much you want is entirely up to you, I prefer to tone it down.

Flying the Virtual Skies with an Onboard Tour Guide!

Depending on which sim you choose; FS Discover will be available under the Flight 1 drop down menu in FS9 and under the Add-On menu in FSX. Once you open the menu you will be able to turn the program functions off and on or you can go directly to the FS Discover map utility and get it ready for a flight plan, but before you do anything make sure you turn on its basic functions.

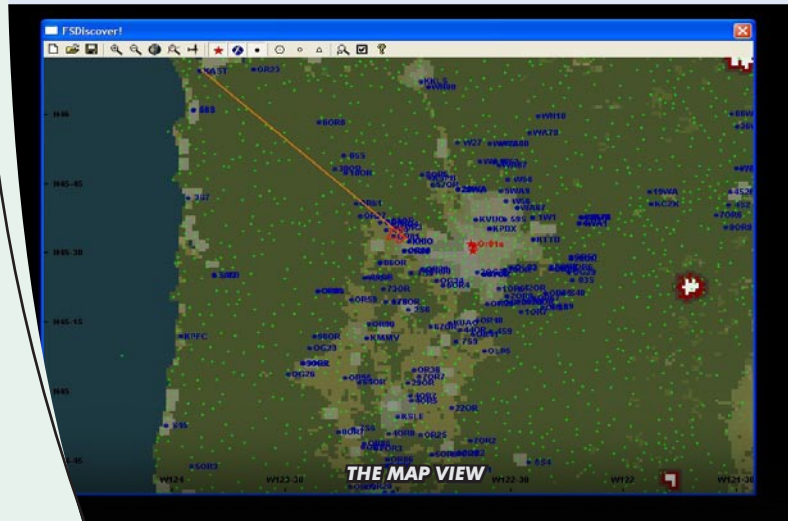
For my test flight I chose to fly from Portland- Hillsboro to the outer most tip of the Oregon Coast near Astoria in FS9 and then fly south to Newport in FSX. I wanted to see how the program would run in both simulations and that is why I chose to break up the flight between the two.

THE VIEW FROM CAPE PERPETUA NATIONAL PARK



ALMOST THE SAME VIEW FROM FSX!

LEAVING PORTLAND-HILLSBORO BOUND FOR ASTORIA



THE MAP VIEW

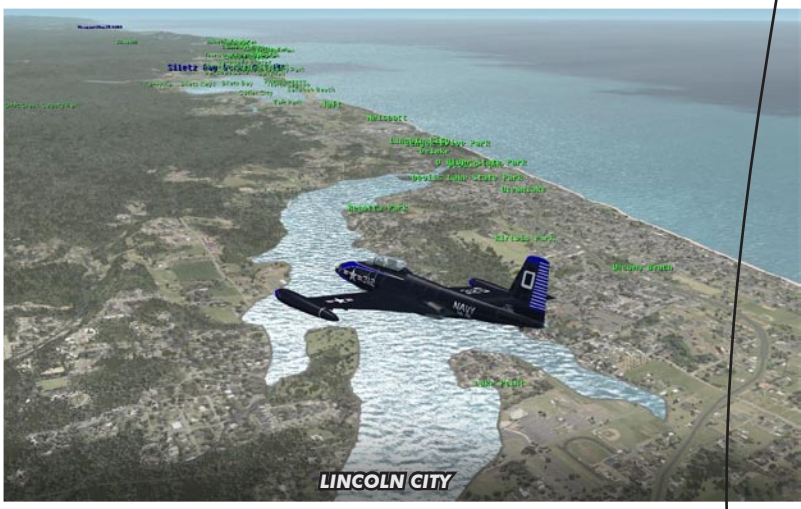
ARRIVING NEAR ASTORIA

NICE DAY FOR A FLIGHT ON THE COAST!

OVER NEHALEM BAY

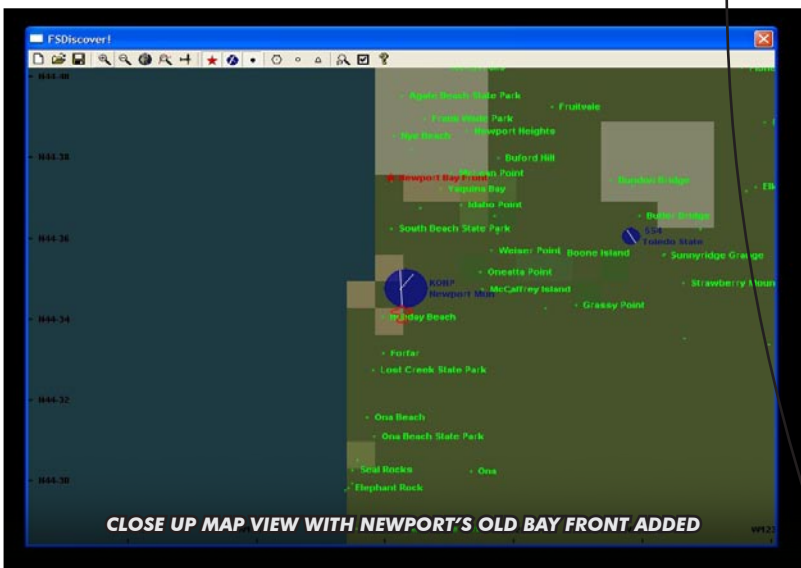
ROCKAWAY BEACH OREGON!

HAYSTACK ROCK AND PACIFIC CITY



LINCOLN CITY

NYE BEACH AND NEWPORT



CLOSE UP MAP VIEW WITH NEWPORT'S OLD BAY FRONT ADDED

If you have ever been to Oregon, whether in the air or on the ground, you will know about its beauty. The Oregon Coast is simply stunning and there is really nowhere like it in the world, and people from all over the world travel here to just see it.

I am one of the lucky few to live here, and although it can get a bit crowded in the summer time, I wouldn't trade it for anything. That being said this is definitely a favorite for me when I am flying my virtual planes in MSFS. The weather can be on the challenging side and conditions can change within a matter of minutes!

The first leg of my flight took me from Portland Hillsboro to Astoria. I was amazed at how much information was displayed even while running MegaScenery's Pacific Northwest package. As I made the transition from Flight Scenery's Portland package to the default terrain I found that the small parks, mountains, and rivers were all labeled and when I did finally make it to Astoria I was pleasantly surprised to see the bridge names as well as the many different parks that litter the Astoria area there in all their glory. This may sound really funny, but I was unsure about where exactly Fort Stevens State Park was in relation to the airport (it has been a long time since I have been up there). Although I had a pretty good idea I still wasn't sure. With FS Discover the Point Of Interest for Fort Stevens was there and it did actually match the photoreal scenery for that region and I could almost make out the outline of some of the buildings as well as the old cannon placement that resides on the park's property.

Switching from FS9 to FSX was quick and easy and I was up and flying in no time. Initially I chose to fly the Real Air Marchetti, but ended up settling on something faster to get me down the coastline; the newest Razbam offering, the Banshee!

Anyone that knows anything about this particular region knows that there are a lot of scenic viewpoints, parks and day use facilities as well as a wide array of Geographic locations. Who would have ever thought that Smugglers Cove existed on the Oregon Coast! As you near each town you will find a lot of critical data. If you have ever driven through places like Nehalem, Rockaway Beach, Tillamook, Pacific City and Lincoln City you know what I am talking about and I was pleased to see that information such as bays, rivers and mountains are all labeled as well as the little scenic viewpoints and day use parks that litter HWY 101.

The flight from Tillamook Bay south to Pacific City is simply gorgeous in FSX and if you have *Ultimate Terrain X* installed from Flight 1 these little towns that litter the coastline in Oregon exist in Flight Simulator in amazing accuracy and with FS Discover you have a visual reference to tell you exactly where all these places are, as well as the key tourist attractions.

I have made the trip between Lincoln City and Newport many times and two of the places that I really enjoy stopping at are Boiler Bay State Park and Cape Foulweather. These two locations are shown in FS Discover and from what I can tell are 100% accurate. As you near Newport Oregon you will notice that Nye Beach is shown, and anyone that has been here knows about Nye Beach, it was the true hub of activity for Newport back in the 1920's and is still a major tourist attraction. A couple of things that I couldn't find were the Old Bay Front in Newport and the Oregon Coast Aquarium - there was no label. So, quickly using the POI editor I was able to add them using Flight Simulator's slew mode with out any real trouble. Do understand though that this merely adds a label, not scenery! There are programs out there if you are feeling creative. In FS9 I had a wonderful Light House package and I really miss that in FSX.

Further south and in my neck of the woods is that of the little community of Yachats, Oregon and Cape Perpetua. Now Cape Perpetua is the highest point on the Oregon Coast and it provides a rather incredible view looking either out over the water or north towards Yachats or South towards Florence. This National Park was used as a lookout during the war and it is rich in history with miles and miles of trail heads. It is a very popular spot for both tourists and locals alike as you almost feel like you are standing at the edge of the world when you are high atop Cape Perpetua. What I have done is provide a picture in this article from atop the Cape and looking north towards Yachats as well as providing the same picture from almost the same spot in FSX - it it really does look convincing and all of the provided information in FS Discover matches remarkably well.

In all, my flight from Portland Hillsboro, out to Astoria and south to Newport was quite remarkable and FS Discover made my flight not only a flight from point A to point B, but also gave me a way to see places that I didn't know existed, perhaps something I could use in my real world travels up and down the coast.

Performance

I noticed very little problems in either simulation in the way of performance, though I did get a CTD the first time out when I went to use it. I had activated all of the features and I think I merely overloaded FS Discover and it crashed Flight Simulator. As I stated early it is also important, at least it was for me, to change the range of each function.

In The End

This is a wonderful program if you are into VFR flying; it gives the virtual pilot a chance to say "here is where I am in relation to a real world location." Would I have bought this product had I not had the opportunity to review it? Well, probably not. I don't like things that take away from the look of realism, but I think after having had a chance to use FS Discover I have to say that I would have really missed out, because it adds a whole new element to the Flight Simulator World and the whole virtual flying experience.

That said, go anywhere in the world and FS Discover will be your tour guide through the virtual skies that is Flight Simulator! FS Discover is available on CD for US$29.95 from all good flight sim retailers. ✈

Matrox TripleHead2Go Digital Edition

BY FRANÇOIS A. 'NAVMAN' DUMAS

As you may recall I reviewed the first TripleHead2Go box last year. The TripleHead2Go (or 3H2Go for short) is a little black box filled with electronics, distributing the image from one monitor (1 graphics card outlet) onto three monitors. The version I previously tested was for VGA connectors only. The new version (called 'Digital') has DVI connectors all around (although the VGA input connector is still present).

So when I was offered the new version for review I scratched my head, thinking what difference would there be?

What it does

As I mentioned before, the box takes the monitor signal from one of your graphic card's outputs (only ONE works, as I discovered), and 'spreads' it over THREE monitors. Actually, there is also a 'Dual' Head2Go, for people who don't think they are going to need/want/have three of them.

How it works

I'm no 'techie' so I can only tell you what Matrox tells me and tells you. See their website here: **http://www.matrox.com/graphics/en/gxm/products/th2go/digital/tech_brief.php**

Basically your computer and graphics card already provide the wider image, not the Matrox box. What Matrox does is to allow this super-wide image to be displayed on three different monitors. You could theoretically take the same image (let's assume the widest possible, i.e. 3840 x 1024) and display it on ONE monitor. You would then see a very small (in height) image with tiny characters and two wide black bands above and below it. ENLARGING that brings it 'full size' onto three monitors.

Difference between old and new

This version is called 'digital' and that's because it now has DVI input and output connectors. DVI is the new graphics standard as opposed to the 'old' VGA. Mind you, it still works with VGA monitors (I tried), but you will need DVI-to-VGA adapters at the ends of your monitor cables.

The Digital 3H2Go comes fully equipped with two cables to connect the box to your graphics card, a VGA and a DVI cable.

The second difference with the previous model is the Monitor Bezel Management Feature (and for not-so-English speakers 'bezel' means the plastic frame around your monitor).

This I really wanted to test and it indeed is a huge improvement over the old system. But more on that later.

The third difference is that to power the box you no longer get a power adapter with the kit. Instead the black box is powered via the USB connection and taps into your PC's electrical resources that way. I am not entirely happy with that solution to be honest. I feel that too many add-ons are already doing that (like my Logitech wheel and my Saitek HOTAS).

NOTE: when NOT playing games you will NOT want to use the Bezel Management, because it will block out part of your data.

Let's try and get the thing to work, shall we?

Problems getting it all to work

Truth be told, I had my moments with this thing. I consider myself as an 'experienced' PC user, with 35 years tinkering with computers, although not an expert or even 'freak' (my wife would tell you different). And it still caused me some headaches to get it all working as advertised.

This is not all the fault of Matrox. After all, operating PCs has become increasingly difficult, as totally opposed to what Mr. Gates set out for and wants us to believe! There are now so many different configurations, bits of hardware and software and settings, that it is totally impossible to make something that installs easily on every PC.

But, there are a few points of critique that I don't want to withhold here, and perhaps a few tips for you to get it installed a little more easily.

There are not many parts - just the main box (which is slightly bigger than the old one) and two cables. And, oh yes, a CD with the software (that you can also download from the Matrox website). The kit comes very neatly packaged and properly secured against possible shipping damage.

Since I'd done it before, albeit little over a year ago, I did not read any manuals. So I took the protective covers off the cable connectors, pulled the cables of my monitors off the PC, connected the DVI cable between the PC graphics card and the 3H2Go box, then inserted the three monitor cables into the box on the other side. And lastly, plugged in the USB cable to a free USB connector (you can't have enough of them these days).

Then I started the PC. Probably the wrong way of going about it, but it seemed to work. I had already downloaded the software (both the Power Desk software and the 'SGU' setup) and installed those two utilities now. I did not notice the new icon on the launch bar, only the large SGU icon on my desktop.

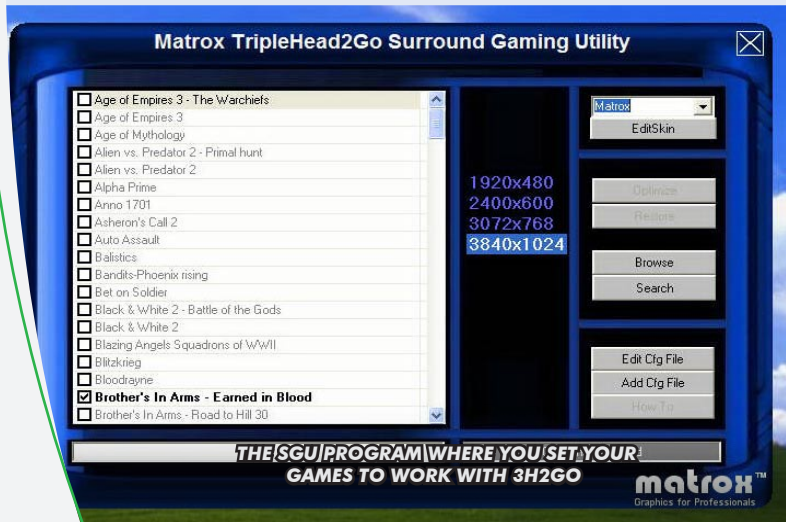
The SGU (Surround Gaming Utility) is the software that makes changes to the config or .ini files of your games and also adds a new icon on the desktop for each game. There are currently some 150 titles supported (and growing), but not all of your favorite games are covered. Mind you, many games work without having to adapt them with the SGU, so in fact there are much more than 150 games supported.

Anyway, I started the Control Panel and went to the Windows Display utility, where I could now extend my desktop to 3840 wide (it gave me that option). So I did. And then I started FSX…. And it looked okay… WIDE!

THE BOX WITH ITS DVI AND VGA INPUT CONNECTORS

THE NEW 'DIGITAL BOX' IS CONSIDERABLY LARGER THAN THE ANALOG VERSION

THIS IS WHAT YOU GET IN THE PACKAGE



THE SGU PROGRAM WHERE YOU SET YOUR GAMES TO WORK WITH 3H2GO

THE THREE MONITORS IS JUST ONE MAIN IMAGE AND YOU CAN MOVE OTHER (SUB)WINDOWS AROUND ON IT

IT DOES NOT WORK WELL WITH 2D COCKPITS THOUGH

COMPARE..... THE 'NORMAL' 1280 X 1024 VIEW

VERSUS THE 3840 X 1024

ONCE MORE..... MY POOR 'LIMITED' 1280

... VERSUS THE NEW SHINY 3840!

NO REAL FPS LOSS, NOT EVEN IN VANCOUVER PLUS FSX... BUT GREAT VISTAS!

KINGAIR COCKPIT ENHANCED

EVEN THE BEAVER COCKPIT LOOKS BETTER

3840 IS HERE TO STAY ON MY SETUP!

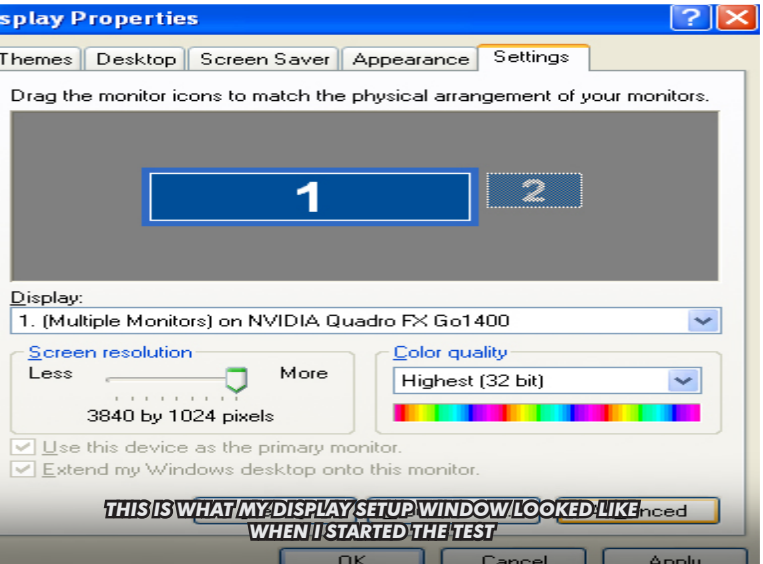
HERE IS WHAT THE BEZEL MANAGEMENT TOOL DOES. WITHOUT IT....

... AND WITH BEZEL MANAGEMENT

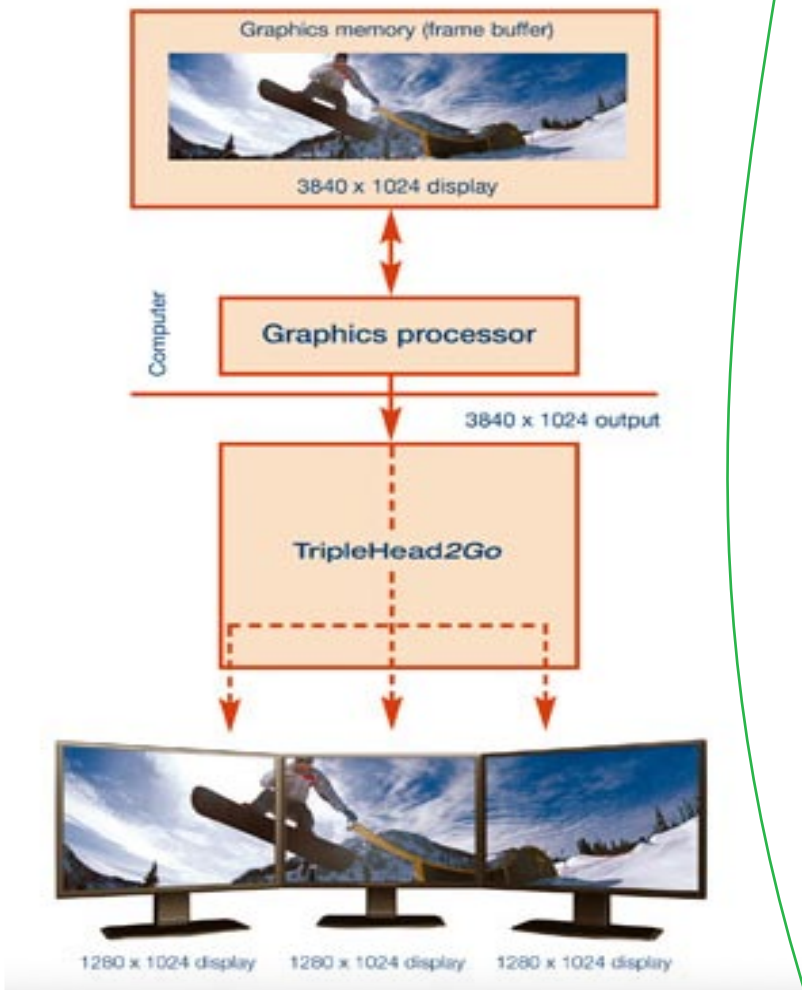
ANOTHER ONE WITHOUT.....

.. AND WITH. IT FIXED MY HELICOPTER'S TAIL BOOM!

MY USUAL MESSY 'TEST OFFICE'



THIS IS WHAT MY DISPLAY SETUP WINDOW LOOKED LIKE WHEN I STARTED THE TEST



HOW IT WORKS IN A DIAGRAM

After that initial success, things started going wrong. The next game I tried was GT Legends and it crashed. Long story short, it was because of something in the game. But I didn't know that of course. So I started trying various things, somehow messing up my settings and in the end I could not choose from the highest resolution anymore. I could not choose the Bezel Management either, the button being grayed-out. This took me a day to fix, even after I got the proper initial maximum resolution of 1280 x 1024 to show again. It still would not show the games used any higher than 1024 x 738 x 32.

To cut a long story short, and give you the solution in case it happens to you: In the GXM software (the icon in the launch bar, bottom-right) there is the option to select resolutions from a column on the left and move them to a column on the right. When I started the app for the first time, there were three different resolutions listed on the right - the highest possible one and two lower ones. It made sense to me, because my three monitors and graphic card could show any of them. But it turned out in the end that to get things back running on the highest resolution, I had to remove the lower ones and keep only one there. After I did that, it all worked again.

In discussions Matrox told me this should not be necessary, so I don't know what I did wrong there yet. Oh, and you may also have to tinker with the third item on the GXM drop down list: Configure Desktop Divider. I first had it at Automatic and that worked fine, until the trouble started. I found that moving it to 'Use default settings' brought me back on track. Afterwards I moved it to Automatic again, because that seems to work better with applications that run on one monitor only (like games that are NOT included in the SGU and run fullscreen automatically).

The hiccups

So, all in all, there are a few points of critique:

- The documentation could be more extensive, especially bearing in mind that this is a product for gamers and not necessarily for graphics specialist, like I suppose the main group of Matrox customers are.
- Starting the Power Desk software is strangely slow. You have to wait many seconds for the window to open.
- Not sure I like the solution of tapping power via my USB connector. The previous version had its own power adapter.
- There are many things and many programs to 'run': like changing your display settings, the SGU program (which changes your games' .ini files), the Power Desktop and the various setups within. All has to be 'in synch' and it is not always obvious.
- Not all games that are in the SGU work without a hitch. For instance Race Driver 3 would not work whatever I tried. Flight Simulator is no problem though!
- When I turn the PC off in Bezel Mode, I have to reset my monitors when I start up later on. Not sure why this is, could be a monitor issue.
- My favorite shooter, Call of Duty 2, is still not included! Apparently because of the graphics engine used?

Neat things

Of course the 'ultra-broad-view' is ultra neat. That's what this is all about, after all. And the fact that it adds actual 'information' to the image (you get to see MORE than on a regular monitor).

But also neat are the additional icons on your desktop with the 'surround' indication. This is handy when you want to occasionally still use the games with only one monitor (why on earth would you do that?).

Also extremely neat is the fact that I can hardly see a difference in performance in our already legendary 'resource hog' - Flight Simulator X. So if FSX runs good… alright, reasonable, on your current setup, it will continue to do so with 3H2Go added. I found hardly any negative effect running it on FS2004 or FSX on my machine.

Some Questions I received

While testing it I received a few questions in our forums. Here are some of them, with the answers:

Q: What about performance?
A: No problem as far as I have seen, see above.
Q: Can I run it on widescreen monitors?
A: There is an option in the GXM setup window for that, yes.
Q: Can I mix digital and analog monitors?
A: No, you can run EITHER though, 3 analog or 3 digital monitors!
Q: Does it only support NVidia cards?
A: Nope, a wide range of ATI cards are supported as well.

The results

The end result, i.e. once you have it all working as advertised, is nothing less than stunning!

I tried the previous version, so I already knew what to expect, but I didn't have Flight Simulator X then, nor GT Legends. These two programs improve so much with 3H2Go. Since I also use my 'games/test PC' for other things (like testing), I could not leave my home cockpit built up, nor could I leave the 3H2Go 'active' before.

But this time I think I'll leave it 'on' and just take the fact for granted that my 'main' monitor is on the left, and all my launch bar icons are on the right monitor, and that I have to turn ALL THREE on to be able to use my 'regular' Windows.

Or I could quickly unplug the 3H2Go DVI plug, and two of the monitor's DVI connectors, and plug them back into the graphics card directly. And, oh yes, reset the display settings accordingly. Hmm… perhaps I just leave the stuff plugged in then, since I am lazy, I mean, since I am so stressed for time!

My hardware/software spec

Probably interesting to know too: I ran it on my AMD 4400+ dual-core, 64-bit machine, with Windows XP Pro 32-bit, 2Gb of RAM and an 'old' GeForce 7800 GTX 256 Mb video card. Three 19" Acer monitors to provide the eye candy.

I tested games like FS2004, FSX, GT Legends, Race Driver 3 (didn't work), Brothers in Arms and MS Office apps. Ran OK.

Last minute addition

Matrox was kind enough to support me and also to check my story above. They acknowledged the fact that GXM is slow to start and are working on improving this.

They also acknowledged the fact that when in 'single-monitor' mode the image is displayed on the left-most monitor instead of on the (more logical) middle one. They have already sent me a patch to change this and that works!

The Matrox TripleHead2Go Digital Edition is available for around US$330 from all good computer and hardware suppliers and selected flight simulator retailers. Check **www.matrox.com** for the latest 3H2Go information. ✈

Winning In The Air

How to gain the advantage - Part II

BY JOHN ACHOR

This is the second of two articles where I discuss the fundamentals of aerial combat in flight simulators. If you missed part one, check last month's issue for all the information.

Situational Awareness and more …Where are You? Where is the Enemy?

Where Are You? Here there are again two aspects. First, what is my current attitude, i.e., which way is up in this part of the airspace and where is this piece of the sky in relation to your home base. Let's say you find yourself in a knife fight with a bird that can out turn you. You make a decision to break off the engagement and bug out. With situational awareness, when you disengage you'll be on course for a safe haven. Without it, you may find yourself heading deeper into enemy airspace.

Keeping track allowed me to successfully deadstick planes back home. The first was an F-4 Phantom, in Chuck Yeager's Air Combat. I disengaged from a fight because I was low on fuel and flamed out a few miles short of the runway. Playing the altitude, airspeed and turns, I was able to plop it on the concrete. When you know where you are, or know how to call up the landing waypoint, it's a simple task to head for safety with minimum wasted time and energy.

Along with knowing your own position, you'd better have some idea of your best glide speeds, stall speeds and how much altitude you'll lose in a 360 degree no-power turn. If this was real-life, the aircraft technical manual would solve these mysteries. In a flight simulator, sometimes it may take time and test hops to figure out the details.

Second — where are they? Where are the bad guys in relation to your position? Here, there is a tremendous difference between real-life and the flight sim. In an aircraft, the physical sensations, G forces and peripheral vision help you maintain your orientation. All those clues are lost in the flight simulator, so you'll have to rely on other tools. Obviously, there are cockpit instruments and possibly a HUD (Heads Up Display) available for assistance. Padlock, in the sim or real-life, means your eyeballs are locked onto the opponent no matter where he is in relation to the nose of your aircraft. When you go to Padlock View in a combat sim, the physical cues are not available.

Padlock View varies with the flight simulator, because every game programmer has their own idea of what it should look like. Most of the time, it takes a tremendous effort to acclimate yourself to that particular view. The first one I encountered was in Falcon 3.0 (F-16) from Spectrum Holobyte (Microprose, later Hasbro). It had an outside the cockpit view looking at the enemy, not the nose, and three small frame windows across the top of the screen. Those windows included an attitude indicator and afterburner/thrust clues among others. Falcon 4.0 totally revamped the Padlock View. This time the extra window is down the left side of the screen. There is a "standby" altimeter and attitude indicator, which are hard to read and "canopy" clues to show the lift vector and where the bad guy is in relation to your nose. There's a new learning curve with each combat sim you fly. Invest time adjusting to them, and the benefits will become obvious.

Real Life versus Flight Simulators - These Work for Me

Templates

I discussed building keyboard templates for your flight simulators in an early issue of this magazine. If you're flying one simulator, these aids may not be necessary. I've had a half-dozen flight sims loaded on my computer at one time, and I find the templates indispensable as I switch between sims. These cut-outs that fit my keyboard remind me of the shortcuts, and I color code some of the more critical commands. I generally use just two colors — don't go overboard. I might use red for items like the keys that put me in "Padlock View" and "Padlock Incoming Missile." Keys for dispensing Chaff and Flares might be in green.

Turn Roll-out and Reverse Under

In Figure 1, an F-22 Raptor (from Novalogic Lightning 3) is in an 85 degree hard turn to the left. How do you roll-out of the turn?

FIGURE 1

We're used to rolling the opposite direction of the turn to get back to straight and level, but that may not be the most expedient. Once into a left turn, you have two choices for the returning to level flight: reverse the direction of roll-in, i.e., roll 90 degrees to the right (see Figure 2), or continue the direction of roll-in and roll 270 degrees back to level (Figure 3). The 270 degree roll out is handy when coming out of a turn to nail a heading i.e., roll-out on a terrain feature or on a waypoint heading. In the sim, without peripheral vision it's tough to locate the points. By the time you see that geographical element or the course cue on the heading tape, you're too late and will overshoot. Using the 270 roll-out let's you nail it.

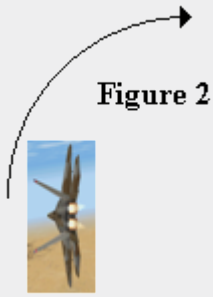


Figure 2

Let's say your opponent is behind you and trying to pull lead for a guns kill. Holding a high G turn makes tracking difficult for your opponent, and every time you reverse the direction of turn using the "normal" method; you unload (drop the G forces) and give up some of your advantage. In our original example, if that bad guy is still on your tail, you can roll 180 degrees to the left and you will have reversed direction, still be pulling maximum G's, but at this point you're now in a hard right turn.

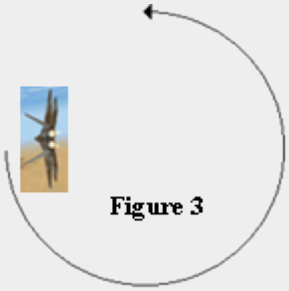


Figure 3

Reverse Course and Target Acquisition

When you make a 180 degree level turn to reverse course, you end up offset geographically from your original flight path over the ground. There are at least two ways to reverse course and wind up over the same spot on the landscape. The 90/270 turn is flown in the horizontal plane. Example: you passed over point "A" heading south and you want to come back over that exact point again. Once past the original target (point "A" could be an actual target, or a runway, etc.), turn either direction and hold a level turn to execute this maneuver. Back to the original premise, headed south and I start with a right turn. As I complete 90 degrees of turn and approach a westerly heading, I roll-out and immediately roll back into a turn to the left. I hold that turn for 270 degrees until my heading approaches North where I roll-out. I'm north bound, aimed directly back toward point "A" (no wind). Sounds easy when using cardinal compass points, but for other headings, brush up on your math.

The second method to reverse course is to execute one-half a Cuban Eight, which is flown in the vertical plane. Using the same example as above, I cross the target (point "A") heading South. After clearing the target, I continue for a few seconds then begin a hard pull-up. Bring the nose over the top and hold back stick until approaching 45 degrees nose down (inverted). At that point, stick neutral and roll 180 degrees to an upright attitude. Now you're headed northbound back toward the target. The Split-S works in a similar manner. The caution here is to ensure that you have enough altitude to execute the maneuver. Don't misjudge it and become a lawn dart.

It's hard to acquire a ground target from extremely low altitude, and you'll need some vertical clearance so you're not caught in your own bomb blast. You're inbound from the Initial Point, on course to the target at 200 feet; a few miles short of the target pop-up to 3,000 or 4,000 feet and then roll inverted. Pull the nose back down to the horizon and then roll 180 degrees to an upright attitude. You're at a decent delivery altitude and you didn't unload the bird (lose G's) by shoving the nose down with forward stick after the pop-up. You should still be on a direct course to the target.

Kill the Overshoot

You're in a lead pursuit curve for a guns kill on your opponent. Looks great for a while until you discover too late, the bad guy has reduced airspeed and maybe slipped in partial air brakes or flaps to dump speed. You're going to overshoot and snatch defeat from the jaws of victory. What to do? What to do? Remember the Barrel Roll I mentioned in the first installment. Here's where it works, and the maneuver dates back to at least World War II.

Let's assume you were originally in a left turn pulling that lead pursuit. As soon as you recognize the overshoot situation, think Barrel Roll in the opposite direction. Picture the enemy fighter as the center of the circle and do a right-hand roll around the circumference of

the circle while reducing thrust. Traversing the outside of the circle, you're traveling a greater distance than the opponent, and bleeding off some airspeed as you pull up into the roll. As you approach 360 degrees of roll, begin pulling hard into the original turn and acquire the target again. It's handy if the sim has a "Look Up" feature to help locate him. The High Yo-Yo should also work in this situation, but I find it easier to use the Barrel Roll. In a Yo-Yo, I have to maintain visual contact with the enemy which is hard to do in a flight simulator.

Corner Speed (Vc)

I discussed Vc (Vee sub C), the best turn rate in the first installment of this story. Now how do I find it? Hopefully, the software manual describes Vc and gives you a hint. Some modern aircraft combat sims, show corner speed on the HUD. It may be a horizontal Vee (<) pointing to the airspeed tape. Match the current airspeed to the " < " and you're smack on Vc. Lacking these clues, it's a matter of test hops and experimentation. Use a medium altitude (Vc varies with altitude, air temperature, etc.) and look for an airspeed that gives you the best turn rate without bleeding off too much airspeed. Turn rate is the number of degrees per second of heading change.

Key Guards and Wrist Rests

Figure 4 shows one of the key guards I use to keep from pressing a crucial key at an inopportune time. In one F/A-18, Hornet combat sim, the <Enter> key fires the selected weapon, and Shift +] is used to deselect a target. On my keyboard, the "Shift" and the "]" keys are immediately below and above the <Enter> key. I found myself accidentally hitting Shift + <Enter> trying to deselect a target and inadvertently firing a missile. Lots of wasted weapons. In another combat sim, the Waypoint key (W) lies between the Q key and the E (for Eject). Here I found myself in a "silk letdown" (ejected) when I meant to reset a waypoint.

FIGURE 4

Decide which keys you don't want to hit in the heat of battle and create Key Guards. Simply cut up some of the manila file folder scraps left over from the template you also created. Cut a rectangle, long enough to go around the key (with some overlap) and about three-quarters of an inch high. Fold it to fit around the key and tape the overlapping ends together. These may also be used to locate keys you do want to identify in the heat of battle.

I find that flying a joystick for extended periods puts a strain on my hand and wrist. To reduce the possibility of Repetitive Stress Injury (RSI, or Carpal Tunnel Syndrome), I put old keyboard wrist rests to work. A standard keyboard length can be cut into three or four sections. In Figure 5, I've stacked four thicknesses of the old wrist rest.

FIGURE 5

I can put my wrist on the top of the stack and that's a good height for me using a Microsoft Sidewinder Pro joystick. You may need another height depending on your physical build and your joystick.

Put it all together

Do you take advantage of the "Cheats" built into the combat sim? Due to lack of Gs, peripheral vision, etc. I don't consider them cheating. Think of them as tools you're using in Gunnery School. Use the Padlock View, set enemy skill level to Rookie, include Unlimited Fuel and Weapons, and make yourself Invulnerable. When you hear 20 mike-mike shells pinging off your fuselage and you don't go down in flames, pretend you hear the other pilot calling "Guns, guns, guns" over the radio. Figure you lost that round and do better next time. At least the Invulnerable setting lets you continue flying without having to restart the mission. Don't frustrate yourself when learning — as you become more experienced, crank up the enemy's skill level, carry a realistic fuel and weapons loads and shed the Invulnerable cloaking device.

Remember the story in the first installment about running the AI enemy fighter out of fuel? Here are a couple of quotes on point: "Dog fights are not won, they are lost." I can't locate the source of that one, however, Lt. Jim Harris, USN, U.S. Navy Fighter Weapons School Instructor said, "He who wins is the guy who makes the fewer gross mistakes." If I hadn't been able to stay behind that Russian fighter, he might have been the one going home instead of me.

FS GLOBAL 2008

Over 12 Gigabytes of new terrain data provides up to 63 times more detail for your WHOLE Flight Sim world!

If you are looking to make your Flight Simulator experience a more dramatic affair, then this is the only product that delivers pretty much a world-wide upgrade! Six DVD-ROMs provide the very latest data sourced 2006 directly from NASA's Space Shuttle missions.*

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While the standard scenery in your Flight Simulator world is rendered with elevation points a massive 1.2km apart, FS Global 2008 provides new ‚mesh terrain' with points only 76m, in some areas such as The Alps only 19m apart – that's up to 63 times more detail! No longer will your favourite areas appear a poor representation of real-life – now mountains soar as they should and valleys plunge. Even coastlines and rolling hills will be more lifelike making every flight, wherever you are in the world, a genuine delight.

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With the upgraded world available – you'll want to jump back and fly VFR and discover the beauty of the virtual world in ever changing shapes and contours during hundreds of hours of exploration flights - be it the Altai Range in Mongolia, some remote peak in Afghanistan - or some place in your own backyard. Or if you prefer IFR flying, you will see breathtakingly real looking landscape enroute.

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FS Global 2008 has been completely redesigned and is a vast improvement over previous versions (FS Global 2005/SE). High quality data by Jonathan de Ferranti brings resolution up to 19m!

Why buy anything else - when this gives you everything in one box? This is the most complete terrain upgrade available - ready to fly whenever you are in either FS 2004 or FS X!

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This scenery is based on Shuttle Radar Topography Mission (SRTM) data. In February 2000 a radar interferometry device installed in Space Shuttle Endeavour obtained elevation data on a near global scale to generate the most complete high resolution digital topographic database of Earth. We used the newest version of this data (released in 2006) topped off with other high quality databases to conceive this most complete scenery product for Flight Simulator. Check our website at http://www.fsim.net for details on just how this incredible product was developed.

PILOT'S

www.fsim.net

Special upgrade offer for users of FS Global 2005 through our website.

Also available:

Flight Operation Center

Your personal dispatcher!

Finally...

Know and be able to execute basic air combat maneuvers. Be able to recognize which maneuver, or combination of maneuvers, will give you the advantage over your opponent. Learn your bird, the combat simulator and how it works. Know your best glide speed, the best corner speed and how much altitude you'll lose in a 360 power-off turn or a Split-S. Be aware of where you are, which way is up and where your adversary is. Fly with a stiff index finger on the stick. Don't fire your guns by accident in the middle of a hard turn. When you're in the enemy's six o'clock position, there is plenty of time to squeeze the trigger.

In my earlier story about the T-28, I was able to close on the opponent by using flaps. Set buttons on your joystick so you can extend and retract flaps. Include a speedbrake switch as well. That will allow you to use these controls by "feel" without looking down at the keyboard.

Two maneuvers I haven't touched on — they're desperate actions when you haven't been paying attention. The first one is a Break — a hard turn pulling maximum G loads in an effort to avoid giving the enemy an advantage. The other is the Jink — truly a last ditch attempt to avoid being shot down when tracer bullets are flying past your canopy. It's a rapid series of uncoordinated turns and changes in altitude hoping to throw off the bad guy's aim.

A combat flight simulator is not like flying the real thing. There are dozens of small but critical clues and cues that are missing in the flight sim. Use everything available to even the odds. Happy hunting.

And Never Forget — Check Your Six! ✈

X-15

Add-on Rocket Aircraft for Microsoft® Flight Simulator

(FS2004 and FSX compatible)

X-15-1: The Original X-15

The X-15-1 was the first of three experimental X-15 aircraft built in the late 1950s to demonstrate the ability of pilots to fly rocket-powered airplanes out of the earth's atmosphere and back to precision landing. *Contains 4 versions of the X-15-1 rocket aircraft (XLR-11 and XLR-99 engines).* **$34.99**

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The X-15A-2 is an advanced version of the X-15 aircraft, with a longer fuselage and two large external propellant tanks. In 1967, the X-15A-2 set the top speed record of the X-15 program, attaining Mach 6.7* in the fastest manned aircraft flight recorded to date. *Contains 3 versions of the X-15A-2 rocket aircraft.* **$34.99**

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Microsoft Flight Simulator X

Tips, Tricks And Trips

BOOK REVIEW BY ADRIAN LAZZAROTTO

Abacus Publishing's latest literary offering to the flight sim crowd comes in the form of Microsoft Flight Simulator X Tips, Tricks and Trips. Written by experienced Flight Simulator users, Scott Slaughter and Adam Howe, the 264-page book offers something different for FSX fans. In Abacus's own words; "This is not another book about "the basics of using FSX". Instead, we'll take you on rides, show you techniques and present info that you won't find anywhere else."

Let's take a closer look!

Chapter 1 – Recovering from Stalls & Spins

"A stall is as a condition in which the angle of attack exceeds the wing's ability to produce lift. There are three types of stalls you may encounter while flying. The type of stall depends on different factors, including altitude, maneuvers and location. The three types of stalls are Power-off stalls, Power-on stalls and Accelerated stalls.

Understanding why an aircraft stalls, but more importantly, understanding how to recover from that stall are important in becoming a good pilot."

Want to know how to do this? You'll have to read the chapter! Through a scenario in Flight Sim, it will take you through practicing a power-off, power-on and accelerated maneuver stall recovery. The chapter is concluded by looking at a special type of stall called a 'spin', with again, a lesson on practicing spin recovery.

Chapter 2 – Don't be afraid of the Dark

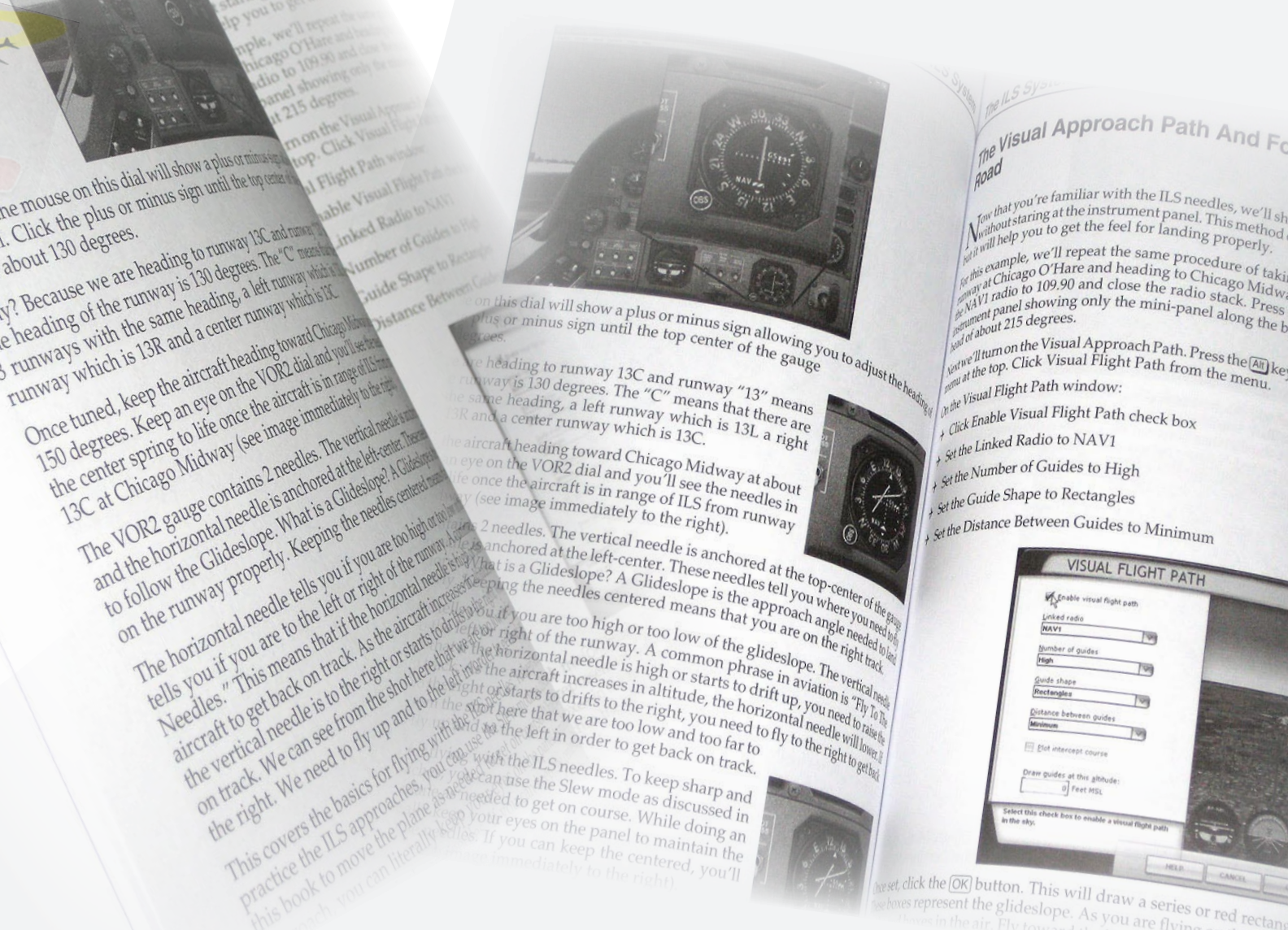
Some pilots may be intimidated by flying at night, whilst others find it easier, if not more enjoyable than daytime flying due to impressive night-time views, particularly around large cites such as New York or Las Vegas.

"Navigating by familiar objects on the ground during a night flight is not as easy as during the day. Stars, city lights, airport lights, taxiway lights and runway lights will likely replace your familiar visual daytime landmarks."

So there are many reasons to be afraid of the dark while flying, and this chapter hopes to take away some of those fears. It starts by talking about the lights inside and outside your aircraft, and all those white, red, blue and green lights at the airport. It then concludes by taking a step-by-step nighttime flight to get you comfortable with the dark.

Chapter 3 – Uh Oh! You've just lost your Engine – Now what?

"A good pilot is always prepared for engine trouble (including partial or total power loss) at any time during the flight. The question is how prepared are you to do this emergency? Your piloting skills will be tested when your aircraft suddenly becomes a glider and you need to land safely and quickly. To do so requires practice to ensure your procedures and skills are good enough to handle sudden engine failures."



This chapter looks at suggestions on how you can handle these situations in Flight Simulator during flight and immediately after departure.

Chapter 4 – Understanding Sign Language

Who believes their flight begins by starting from the 'active runway' and ends with a successful landing and don't care about the ground portion of their flight? Too many of us FS Pilots!

"FSX has increased the realism of flight more than ever before and designers have created excellent airport scenery – we're seeing many real world visual indicators in our FSX flight experience. So, the more you know about your airports, the more skilled you'll become as a pilot."

Hence the content of this chapter – it looks at airport signage and markings.

Chapter 5 – Flying in the Great Outdoors

The next chapter gives the reader a break from learning, offering a fun and relaxing flight in the great outdoors over the south-western United States. It's a step-by-step scenic flight from Death Valley, California to Leadville, Colorado, supported by airport and runway information, VORs and other navaids enroute for you to reach Leadville.

Chapter 6 – Are you under the weather?

"Flying in perfect weather conditions or even 'Fair' weather conditions can become less interesting after a few flights. So, did you know that you can change the weather conditions in FSX at your destination airport or at any point during your flight?"

This chapter talks about weather conditions and also allows you to set up a flight to show how easy it is to change weather at a destination airport.

Chapter 7 – Rolling Over With magical Aerobatics

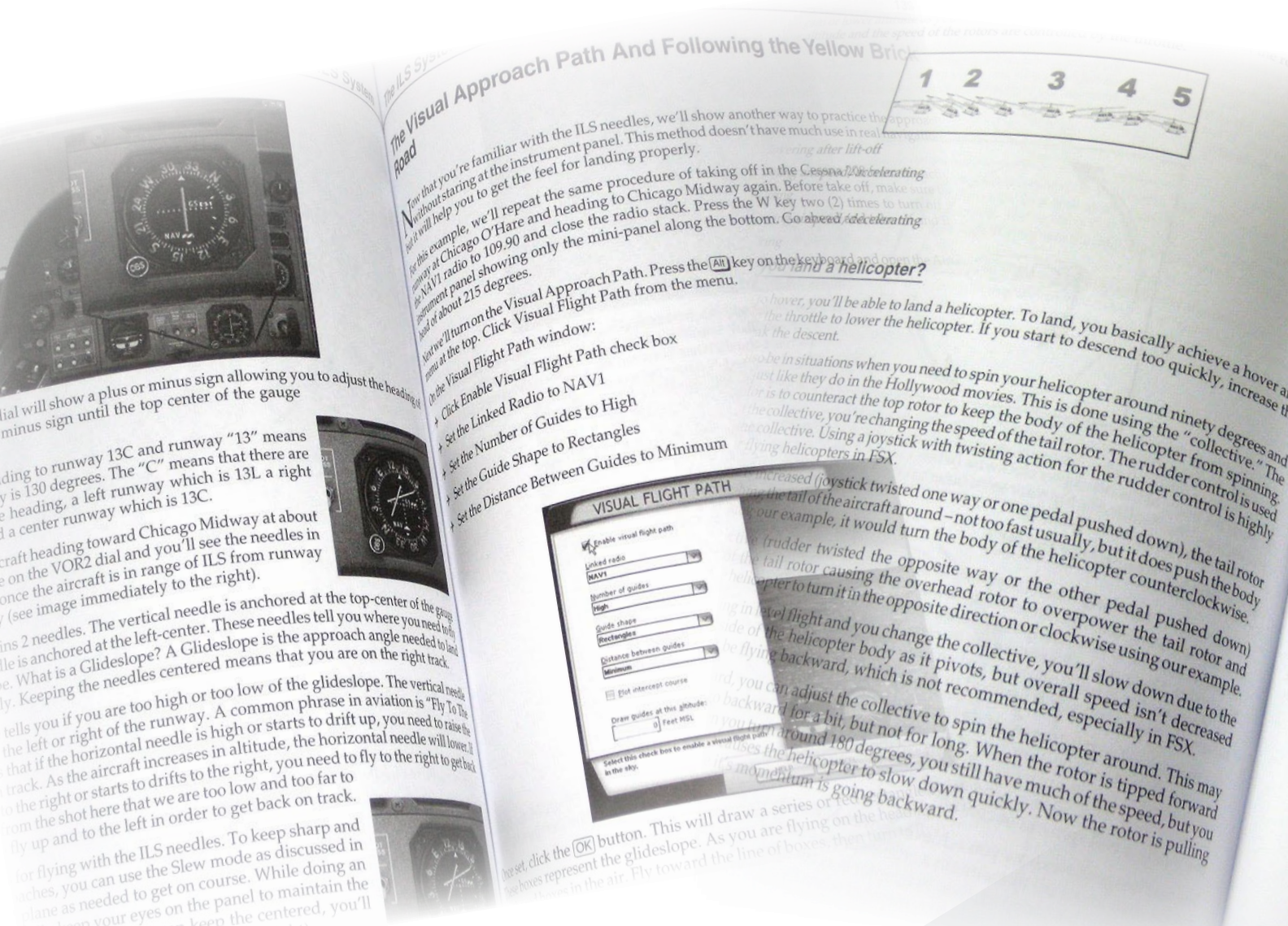
"If you've ever attended an airshow, you must have marvelled at the aerobatic artisans as they perform their aerobatic manuevers."

We'll now it's time for more fun, without the G-Forces aerobatics normally produce! This chapter will take you through performing a Loop, Aileron Roll, Immelmann Turn, Split-S Maneuver, and the more thrilling Hammerhead.

Chapter's 8, 9 and 10 – Controlling FSX with its menus, The ILS System and Slew Mode and Camera Views

"The menus in FSX allow you to control just about every aspect of the Flight Sim environment from changing airports and aircraft to adjusting image quality and screen resolution."

To start understanding what FSX can do, this lengthy chapter goes through the menus one at a time and explains what each option will do. Whilst an experienced simmer may only pick up a few hints from this chapter, it's ideal for the novice.



Next, the book covers the ILS (Instrument Landing System).

"The ILS helps guide your aircraft by showing you how to line up with the runway and, in some cases, the proper angle needed to land. To activate the ILS, you'll need a set of runway-specific frequency on your aircraft's NAV (navigation) radio."

The chapter starts with some basics of shooting an ILS approach and then shows how to accomplish this with relative ease.

The book then looks at Slew Mode and Camera Views.

"The idea of slewing is simple: Moving your aircraft in FSX without actually flying. If you're practising an approach and realize you are off course or about to crash, enter slew mode, raise your aircraft up, and/or move it back to help you get back on course, then turn slew mode off and resume flight."

The chapter will show you, using your Joystick, mouse or keyboard, how to operate all the Slew commands in FSX which include:

- **Raising or lowering the aircraft**
- **Raising or lowering the nose or pitch of the aircraft**
- **Raising or lowering either wing or the bank**
- **Moving the aircraft forward or backward**
- **Moving the aircraft left or right**

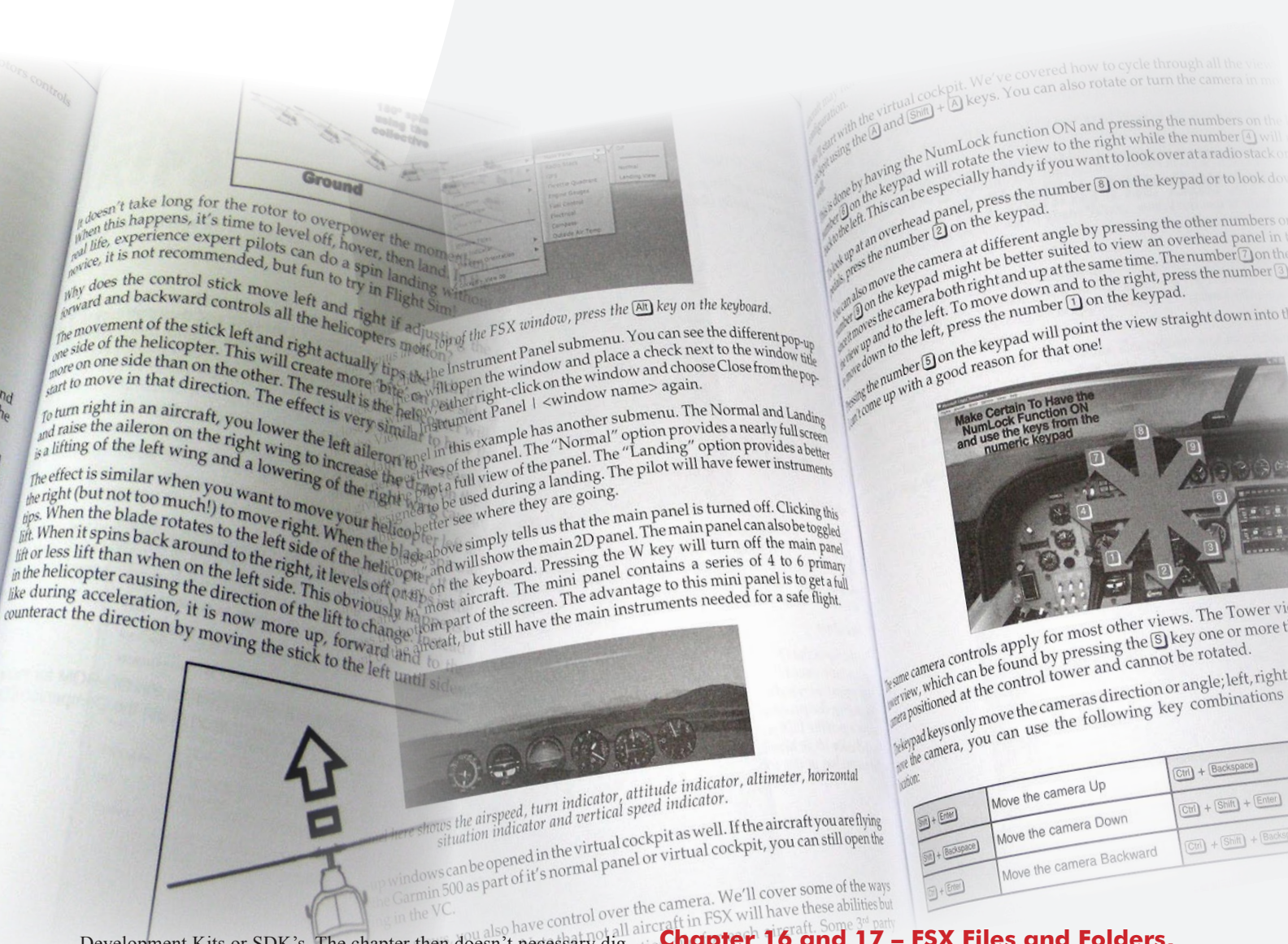
Chapter 11 – Floatplanes and feeling the Salt in your hair

Ever considered a diverse flight in the Bahamas, the Azores and remote Lakes and rivers? If so, you should consider flying a floatplane or seaplane because doing so will add new experiences of flying in Flight Sim. Firstly a brief Seaplane History lesson is given, and then it's time for more fun with a refreshing change in you flying - Time to pilot FSX's deHavilland Beaver (or any seaplane you wish) in some remote and exotic locations.

Chapter 12 – Man on a mission

"Do you enjoy flying missions? Most FSX users do because missions add a new element to flight simulation. By combining the realism of flight simulation and a sense of game play, missions have broadened the appeal of flight simulation to a whole new generation. For those of you who are unfamiliar with the term 'Mission', a mission is basically a flight situation in Flight Sim where the user has to perform certain tasks. These can be anything from flying an aircraft through hoops, to landing an aircraft on a certain runway or they can be much more involved like landing a helicopter on an oil platform. The difference between a mission and a simply saved flight is that a mission provides real-time instruction and feedback as you're flying. If you succeed at a certain task you are given a new task, if you fail, the mission has ended and when you successfully complete a mission, you are rewarded."

Creating missions involves using tools that come with the Flight Simulator X Deluxe Edition. These tools are referred to as Software



Development Kits or SDK's. The chapter then doesn't necessary dig into all the aspects of creating a mission, but looks at the tool that can be used to create a mission. This tool can be used to do more than just create missions – it can also be used to customize scenery.

Chapter 13, 14 and 15 – Pimp my Panel, Flying Using Your Keyboard and Don't be afraid of the Blades

Pimp my Panel looks at the structure of your aircraft's instrument panel so you can better understand how these panels work in your aircraft.

"Despite the impressive range of Joystick, yokes and other controllers now available, many simmers still feel more comfortable using their keyboards to handle certain aircraft controls and to select commands and options."

Dozens of keyboard commands are available, but since you'll probably never use most of them, you won't need to learn all of them. But remembering the most important keys, you'll become a more expert simmer. Therefore, the more common commands are described, as well as instructions on how to change keyboard assignments.

We have all probably experienced at some stage or another that flying the helicopter in Flight Sim isn't easy! "Don't be afraid of the blades" explains how a helicopter differs from a fixed wing aircraft with some tips on flying and landing the aircraft.

Chapter 16 and 17 – FSX Files and Folders, and Managing New Scenery in FSX

Did you know there are approximately 42,000 files in the FSX folder! To get a better understanding of FSX the next chapter takes a look at the files and folders used by FSX on your system. Obviously it can't cover the exact purpose of every file, but it does cover quite a few of them.

"Besides adding new aircraft to FSX, adding new scenery is the most frequent activity for users. You have more than one way to add new scenery files to FSX and how you add them depends on the type of scenery that you're adding."

Apart from the glossary that then follows, the book concludes by discussing how to configure FSX to use new scenery.

Conclusion

Even without the use of color, which is probably my only criticism, screenshots and pictures are good. And if it's kept the cost of the book down, then there's certainly no need for color in my mind. Explanations are good, and it also includes a CD-ROM complete with videos explaining various tricks and tips mentioned in the book plus many other FSX goodies. At around US$27, it's certainly a book that no novice should be without, and at the same time a very useful companion for the experienced pilot. Grab it from good flight simulator retailers, or direct from Abacus Publishing. ✈

Meet Your Makers! - Jon Patch

BY FRANÇOIS A. 'NAVMAN' DUMAS

Jon Patch made FS fame not so long ago with his freeware Ogden Point and Victoria software, and his much appreciated VancouverPlus commercial titles. Since Jon also works with me, it was easy to approach him for an interview and present the 'man behind the scenery' to you.

CP: Our readers are really interested in knowing a bit more about the person behind the 'Vancouver+' and other products. But perhaps you could detail that rough description a bit? Where do you live, where were you born, education, career?

Sure. I live in Victoria, British Columbia on Vancouver Island off the West Coast of Canada. I was born and grew up on the other side of the country, in Montreal, Quebec, then went to the University of New Brunswick in Fredericton, where I earned my BSc in Electrical Engineering. I majored in Computer Engineering, the first time such a specialization was offered in those days. From there I spent a couple of years in graduate school in Nova Scotia, studying digital systems. I then spent the next 8 years working up the ranks from Engineer to Operations Manager at companies developing custom products, image processing systems and satellite ground stations. Since then (18 years ago), I've had a diverse career that's included operational management in other industries such as mushroom (legal!) exporting and tourism. I've had an open-line radio show and newspaper column on social issues. Prior to mucking about with the flight sim world, I was COO for a music technology company.

CP: You spend a lot of time on making these wonderful landscapes and cities... but you also do other work. Could you explain a bit about your other activities? Consulting? Project Management? The 'thing' with the 'single men' (excuse my ignorance here)?

My consulting services, according to my official blurb, include Program Management, Organizational Development, Succession and Growth Planning, Partner and Strategic Synthesis (the distillation of complex issues into simple actionable components). My emphasis is on facilitating clients to be more effective in their business and personal lives. Often

we look at beliefs and preconceptions that may be getting in the way of their success. Currently for example, I'm assisting an entrepreneur with the development of her business plan, and for another client, presenting a workshop on communication techniques for difficult situations.

The ManKind Project 'thing' is for all men, not just singles. And affiliated organizations work with women as well. The premise of the organization is that many, if not most men are largely behaving as big kids, still making decisions from the place of a scared or angry child. The mature masculine balances compassion with action, creativity and blessing/mentoring. To make this transition, an intense initiation experience has been created that pushes men to their physical, emotional, mental and spiritual limits in a safe way that gives them an opportunity to break out of old non-constructive patterns. That's done in a 48-hour weekend process, with follow up and support and trainings. I work to organize ongoing groups and some of the follow-up trainings.

CP: Apart from what you make and where we can find it (more on that later), readers will be interested to hear how all this started? Did you 'play' FS for years and then got the idea of building something? Were there any people that served as an example for you?

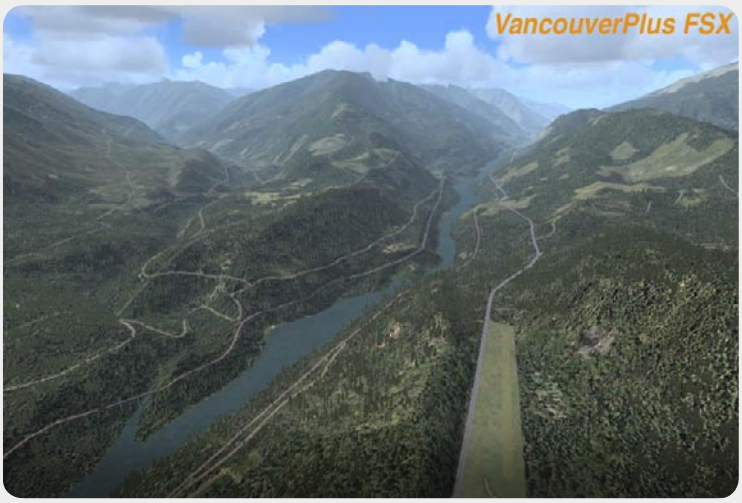
Indeed I started relatively recently, "playing" with FS2002. By the time FS2004/FS9 rolled around, I was getting irritated at little inaccuracies as I flew around Victoria. For example, I liked the better mesh available, but a number of local lakes ended up in plateaus or pits. So I created some simple flattens. The ocean here is very busy with water traffic and I wanted to liven it up, so added some boat traffic. After a few months I decided to experiment and create something a little more sophisticated with an eye to seeing (a) how it was received by the community and (b) determining if my work might catch the eye of a distributor for commercial sale. Indeed Ogden Point was well received, and I was approached by a couple of distributors. The end result was Vancouver+.

Innumerable people served as examples: those who took the time to create and post an add-on for the community, and the many who were (and are) eager to help out on the scenery design forums. There are far too many to single out anyone.

CP: Also, since making 'anything' for FS these days is pretty complex, how did you find the tools and the knowledge to learn to do this? Was it part of your education at all, or just self-taught because of an interest?

There's no doubt that having an Engineering background was a big help in understanding the design paradigms and the tools. I've programmed in dozens of languages over the years, and managed the development of complex hardware/software systems. But really anyone with persistence, patience, time, an eye for detail, a willingness to learn and be humbled, and an understanding of improving the user experience can create something. I'd have been lost without the forums and the support there. I also have built a personal network of developers in different areas of expertise that I can assist, or can assist me when I have an issue. It's also very helpful to be on beta teams: I've beta-tested a number of products, including FSX.

CP: The 'insiders' (and your customers) know that you are one of the best people in terms of direct support, both for your freeware and commercial products. That of course begs the questions: where the heck do you find the time to do it all?



There's a couple of sides to this question. First: good support saves time, it doesn't add time. By having clear manuals and installation instructions, good FAQs and a great test team, we can keep the customer well informed of possible issues and solutions. An overall objective is to have the user experience as seamless as possible: so we try to design our installers and configurations, using professional programmers, to handle all the potential issues we can think of. Public support forums allow users to help each other, and provide visibility to existing issues so we don't have to answer the same questions over and over. And the number of hours per week needed for support is not that many, especially when there are a few people on the design team who can share the load.

Second: doing it all (design, development, beta-testing, community involvement, support) does need a few hours a day overall, and it would be difficult for a developer to do this with a full-time job.

CP: On to the products. What was your very first foray into the world of scenery design? Is it still available somewhere? What other products have you made over time?

I've had a narrow focus, so the scope of what I've done is mostly limited to a series of releases for Victoria and Vancouver. The lake flatten fix for Victoria was my first release. Then I did several Victoria bits before pulling them all together in the Ogden Point release. That then has been enhanced a couple of more times, adding to the geographic scope and detail. Each release replaces the last, so in a funny way the original stuff is still available. I've contributed bits to other projects, like PAGY for Glacier Bay. In summary:

- August 2004, flattens for Vancouver Island
- November 2004, boats for Victoria Harbour
- November 2004, some simple objects for the Victoria area
- January 2005, Seaplane AFCADs for the Pacific Northwest, primarily focused on Ultimate Traffic destinations (superseded by Norman Meznarich's later release)
- March 2005, Ogden Point (vicenh04), combining previous Victoria scenery and adding a lot of detail around the cruise ship terminal
- May 2005, airport corrections for Vancouver, correcting airport elevations and other data for the Vancouver area
- September 2005, Victoria (vicenh05), greatly enhanced and expanded version of Victoria scenery, in collaboration with Holger Sandmann
- December 2005, Vancouver+ for FS9 (with Holger Sandmann, and support from a host of developers and others)
- October 2006, simple building fix for CYVR for FSX
- November 2006, Vancouver+ for FS9, V1.1, updated and enhanced
- December 2006, Victoria (vicenh06), further enhancements of Victoria+ for FS9
- February 2007, Skagway and Carcross components of Glacier Bay V2 for FS9 (joint project with team led by Holger Sandmann)
- June 2007, Vancouver+ for FSX (with Holger Sandmann, and support from a host of developers and others)

I've also released a couple of object libraries for scenery developers.

CP: You made a number of freeware products (for FS2004). Do you have plans for further freeware products?

Nothing new is planned at this time, as we're still in the process of conversion to FSX, and that's a big job. So the next no-charge release will be Victoria+ for FSX. There's lots of exciting possibilities though once we get through the FSX conversion period, and I welcome suggestions.

CP: What would you say are the biggest challenges for a commercial FS designer, both from a technical perspective and from a business point of view? Perhaps compared to the 'life as a freeware designer' before?

Technically, the designer has to choose what type of modifications/enhancements they want to contribute. The scope of the sim is immense: airports, aircraft, terrain, buildings, flight plans, utilities, etc. So balancing what is most fun, with what is technically doable and what is marketable takes some experience and thought. And that is the biggest challenge: defining what the market wants, that provides a reasonable return. The quality of many add-ons is excellent and customer expectations are high. That means balancing scope, features, technical sophistication, and development time with the potential return. A "freeware" designer who has limited time can focus on cleaning up problems with the default sim, or enhancing their local area without too much effort.

CP: By the time this gets printed we are all using Service Pack 1 for FSX. What are your thoughts about FSX, knowing that quite a few things got changed internally? What do you think are the new features that can excite the user base in the years to come, especially with an eye on your landscapes? [by the time this is printed we may be all using SP2!]

I think FSX was a gutsy play by ACES, and there have been some rough spots and some amazing results. There are features of FS9 I miss, like the superior ground texture appearance at a distance, but overall I'm enjoying the immersion that FSX provides. I think customers have understood in general that a higher end system is needed, and so FSX is not for everyone. Conversion of scenery elements to FSX has been a big effort, but with the vastly improved support from Microsoft, show-stoppers have been avoided. I'm surprised by the added realism of moving road traffic, and reflective water. What the user can't see is that in general it's easier for developers to make their sceneries compatible with each other, but they benefit from fewer support issues and quicker time to market for the products. Missions are exciting for many simmers. My favorite landscape enhancements are the higher ground resolution and higher mesh resolution at a distance: the ground looks more realistic close up, and at a distance, the horizon contour looks much more realistic. As an example, the characteristic outline of the mountain peaks north of Vancouver known as the Lions was indistinguishable in FS9, except very close up. Now, in FSX as in real life, their distinctive humps are clear.

One disappointment is the perception that the entry point for scenery developers is higher, ie it's more complex than FS9. Yes, it is more complex, but as great tools like SBuilder and some of the Airport facility editors come on line, I don't think designers should be intimidated.

I'm very pleased that ACES choose to respond to issues with FSX with extensive Service Packs, SP1 and now SP2.

CP: Last but not least.... 'Patch aficionados' are of course curious as to what you are working on now... and when it will be available (just kidding!)?

With Bill Womack finished his excellent Dillingham project, I will be supporting him with CYVR for FSX. Date: TBD. And I'm working with Holger on Victoria+ for FSX.

Thanks very much for your time and in-depth answers, Jon!

If you want to learn more about Jon's products, past, present and future, you should look for his name on **www.FSAddon.com**, on his (and Holger Sandmann's) 'freeware support forum' on simFlight (**http://forums.simflight.com/viewforum.php?f=231**), on the new FSAddon.eu forums here: **http://forums.fsaddon.eu/portal.php** and on the **www.avsim.com** file library. ✈

VIRTUAL AVIATOR

ONLINE FLIGHT SIMULATION RESOURCES

BY DEAN BIELANOWSKI

Here we are again on the hunt for some of the best and most useful, or most interesting flight sim websites in cyberspace. Grab your virtual surfboard, your virtual pilot's license and your compass as we travel to the ends of the digital universe!

Microsoft Flight Simulator X – Get That Jet!

Now here's a cool little site with a browser-based game that you can waste hours on while making that next Trans-Atlantic or Trans-Pacific crossing. It's called "Get That Jet" but I'm not entirely sure why because it involves trying to throw a paper plane through an office and out the window, while avoiding common office objects like a slicing and dicing ceiling fan and a window frame. Basically you drag and release the paper plane using your mouse, and based on your speed of throw and trajectory, you either make it out the window, get diced in the fan, crash and burn on the office floor, or worse yet, never even reach the takeoff point! You receive a score depending on the distance the paper plane travels, and this score is ranked against every other person who has played the game before you. And with over 88 million games played since the site's launch, you won't be making the top ten the first few times you launch your plane. Well, you would have to be extremely lucky, or extremely good to nail a perfect flight on the first few attempts. In fact, I sat here for a good 35 minutes trying to just get the paper plane out of the office window, which seems absolutely necessary if you want to post at least a half decent score. The best I could do was rank in the 18,000's or so. Not very good I admit. But it is no push-over either, and you could spend hours trying to make the grade or, like me, give up in frustration after about half an hour! Nonetheless the game is a little distraction from every day simming and worth at least a few attempts. Check out the game at **http://flightsimx.archive.amnesia.com.au/**

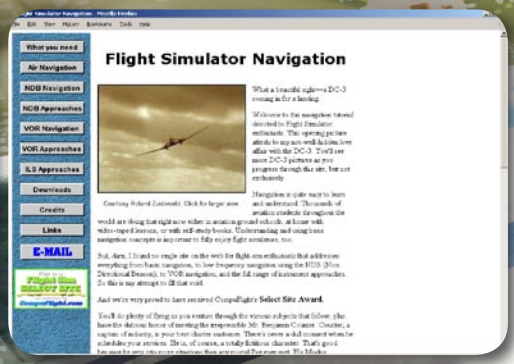
Flight Simulator Navigation

If the complexities of navigating an aircraft have you stumped, a trip to the "Flight Simulator Navigation" site might be a worthy investment of your time. The site offers several navigation tutorials covering the basics like Air Navigation, NDB Navigation, NDB Approaches, VOR Navigation, VOR Approaches and ILS Approaches. Furthermore, each section is divided into relevant topics for that area of focus for even more detail. The tutorials are basic in nature, but perfect for the beginning virtual pilot, or anyone struggling to come to grips with flying by instruments. The site is not the snazziest going around in terms of flare, but the design itself is a winner. Why? Because it takes you straight to the information you need without clicking 50 times or searching in vain for a menu system buried somewhere in an overcrowded main page. It may be clever that the site is teaching you navigation, but even if you know nothing about finding your way around in an aircraft, you can easily navigate this website. There are numerous relevant, but basic diagrams and illustrations for each tutorial and each offering will provide a good foundation for further navigation study. Best of all, it's FREE! So head on over to **http://www.navfltsm.addr.com/** to start studying today.

FS Easter Eggs

Ever found an Easter Egg in Flight Simulator? You know, those funny little surprises that are probably inserted by one of the sim coders/developers in some strange out of the way location when the project manager wasn't looking? These are known as "Easter Eggs". Some simmers spend hours on end hunting these elusive anomalies, and often with nothing to show for their time. They are as elusive as gold or diamonds it seems. But, some have been found, and the locations of these can be found with even more painful searching, but this time in cyberspace, not in your flight sim software. The website at **http://www.simtours.net/eastereggs.php** shows the location of some pseudo-easter eggs. That is, unique objects and buildings, or animated events or structures that are not found everywhere in the world, but are worth a look at in FS. Most are not true Easter Eggs, but provide the surprise and wow factor nonetheless. The site lists some of the better eye candy to be found in both FSX and FS2004, including Disney World, the Hollywood sign, Red Square (China), Stonehenge (UK), Taj Mahal (India), Victoria Falls (Africa) and some animated extravaganzas including the Fireworks in Las Vegas on 4th July, the Kilaueau Volcano eruption in Hawaii, and the Northern Lights.

GET THAT JET!



THE FLIGHT SIMULATOR NAVIGATION SITE

GET EASTER EGGS AT ANY TIME OF THE YEAR!

THE SCENERY HALL OF FAME

GET ENGAGED WITH ENEMY ENGAGED 2

A GREAT VA FOR X-PLANE PILOTS!

These provide an interesting distraction to the rigors of long range airline flight and are great to find and observe in a light aircraft or helicopter. Check out the website and find a few Easter Eggs for yourself.

Scenery Hall of Fame

Although I am sure we have featured this site in the Online Resources column many years ago, it deserves another mention. The Scenery Hall of Fame is not just about scenery however. The site offers a little bit of everything but it continues to hold a good repository of scenery design utilities, and most importantly, these can still be download for Flight Simulator versions going back to FS5 and earlier! It is very hard to find such utilities for older sim versions on the net these days, but the Scenery Hall of Fame has them all it seems… well a good selection of them at least. Other things to check out on the site include the large array of aviation related screensavers that can be downloaded, although you must ensure you get one that is compatible with your operating system, or you can grab yourself a copy of the old BAO Tower simulator, which, in its time, was a very advanced Control Tower simulation. And even today it still looks good! I am sure I had it running on Windows Me a while back, but not sure if it will work on Windows XP or Vista, but it's worth a try at least. The product is now available freely and legally on the internet, and you can get it on this very site. So if you are into Scenery design or want to grab some free goodies, point your browser to **http://www.scenery.org/**

Enemy Engaged 2 Official Site

The official website of Enemy Engaged 2 can be found online at **http://www.eech2.com/** This helicopter sim title featuring the Commanche chopper has only been out for a couple months but is proving popular as a fast action combat rotor sim. The website offers the usual marketing assets including a cool intro movie that plays as you enter. A feature list and gallery also offer further information on the game's content and visuals. A Frequently Asked Questions section deals with some common user problems when installing and running the game, which includes the usual "update your drivers" type solutions etc. My personal experience with the game has resulted in no problems so far however. The site is quite basic but gives you a fair idea of what you can expect from the sim, and given that there are very few new combat chopper sims coming onto the market these days, this one is worth a look, and some support from the community.

California Airlines

California Airlines is one of the longest running virtual airlines online for X-Plane enthusiasts.

"Among the many unique features offered to our pilots is our Golden Bear Premier Passenger Service, the Golden Cub corporate flight operation, and the Special Operations Fleet for special events and operations. The service offers our more advanced pilots challenging certifications, flexible routes and luxury appointments for our passengers. CAX pilots also enjoy network based fly-in events using the VATSIM and IVAO networks and Squawkbox for X-Plane."

In addition to regular fixed wing operations, the VA has also just started up rotor-wing ops under the banner of "California Heli Services". The airline features five hubs around the globe, so it is not just a US-based operation. Their website is extremely well presented, well designed and very lively with color. And of course there is plenty of information on the airline itself, all easily navigable from the left side menu bar. A pylon racing league is also offered by the group for those who feel the need for speed, and for the heavy pilots, a simulated ACARS system is in place to use in flight. The virtual airline appears to be quite well setup and would definitely be worth a look if you are flying X-plane and looking for more direction on your next virtual flight. Check out California Airlines VA at **http://www.californiaair.net/**

Stay tuned for more useful and informational websites as the Virtual Aviator column makes a return to Computer Pilot Magazine. And, as always, if you know of a great flight simulation website, send us an email with the site address to **editor@computerpilot.com** and we will consider it for a future issue!

Note: All website links were correct and working at time of publication. Due to the unstable nature of the internet and site links, not all links or sites may be functional or at the same address. If the site cannot be found, try searching for it using a web search engine and appropriate keywords. ✈

VFR Flying in the Water Wonderland

BY TOM KURTZ

I thought it would be fun to fly VFR and tour my home state of Michigan "The Wolverine State", and invite you to tag along!

I am flying my Piper Archer II by Carenado. It is an add-on aircraft for both FS9 and FSX. I know many of you will not have the Cherokee Archer II (too bad) so fly this VFR tour with any plane you want. Ok, jump into the right seat and let me tell you a little about the Archer II before we take-off.

"Sic quaeris peninsulam amoenam circumspice"
(If you seek a pleasant peninsula look around you)
This is the motto of the State of Michigan.

The Archer II is equipped with an AVCO Lycoming 0-360-A4M air-cooled flat four engine that produces 180 HP. The Vne speed (Never exceed speed) is 148 kts. She will cruise at 124kts. Stall speed is 49 kts. Climb rate is 740ft/min at 76 KIAS. The service ceiling is 13,650 ft and the range is 670 nm so if we have a full load of fuel we should be able to fly from Detroit all the way up to Sault Ste. Marie without refueling (Yeah, right! Not the way I fly!). The maximum flap speed is 102 KIAS. The best speed in turbulent air is 113 KIAS. Landing with 40 degrees of flaps is best at 66 KIAS. Designated crosswind velocity is 17kts. (I also own the Cherokee Piper Dakota by Carenado - it's great too.)

Ok, let's go. I hope to fly this VFR in three parts. In part one we will tour the East Coast of the state. In part two, flying the FSX default DH Beaver over the Upper Peninsula. And in part three flying the FSX default Grumman Goose down the West Coast. There is a lot to see in this beautiful state. First we'll take-off from Detroit Metro

Airport (KDTW) and fly across southwest Detroit and up the Detroit River. You are probably wondering why the state is called "Water Wonderland". Well, almost half of Michigan is water. The state fronts 3,177 miles of shoreline, second only to Alaska. Lake Michigan, Lake Huron, Lake Superior, and Lake Erie surround the state. Plus there are 10,083 inland lakes. Also, there are more than one million registered pleasure boats.

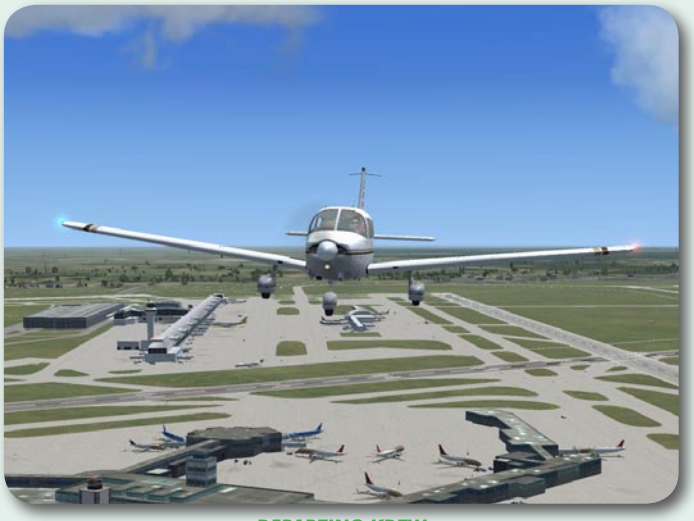
While I am bragging about Michigan let me tell you a couple more things while we are waiting for clearance to take off on Rwy 04. Ok, the French were the first Europeans to come to Michigan. The French named the territory Michigan after the Chippewa Indian word "Majigan" which means "clearing". They established the first settlement, Sault Ste. Marie in 1668. In 1763 the British ousted the French during the French and Indian War. During the war of 1812 the Americans took possession. To make a long story short Michigan was admitted to the union January 26, 1837.

Today Michigan is the leader in motor vehicle production and many other manufacturing and processing lines, including prepared cereals, airplane parts, machine tools, refrigerators, hardware, and furniture. The state also produces important amounts of iron, copper, iodine, gypsum, gravel, and cement. Michigan's farms grow apples, cherries, beans, potatoes, and sugar beets. The forests contribute significantly to the state's economy. Other industries are tourism and recreation.

TAKE-OFF AT DETROIT METRO KDTW

I just heard ATC give our clearance. Take-off was very smooth. Let's fly a little SE toward the river. You will see Grosse Isle off to the right. Grosse Isle was a U.S. Naval Air Station during WWII and the Korean War. The station was closed many years ago, but local sport pilots still use the airfield.

PIPER ARCHER II 2D PANEL



DEPARTING KDTW

PIPER ARCHER II VIRTUAL COCKPIT

THE DETROIT RIVER

As we fly up the Detroit River Windsor, Canada is off to the right. You can see the VASI lights of the airport when the weather is clear, like today. Directly ahead are the Ambassador Bridge and the City of Detroit riverfront. Let's swing around the downtown area for a look. Also, you can see Detroit's Belle Isle Park and bridge. I spent many a happy hour there as a kid fishing, riding bikes, and canoeing.

DETROIT'S AMBASSSADOR BRIDGE

THE AMBASSADOR BRIDGE

DETROIT RIVER FRONT

DETROIT'S BELLE ISLE BRIDGE AND PARK

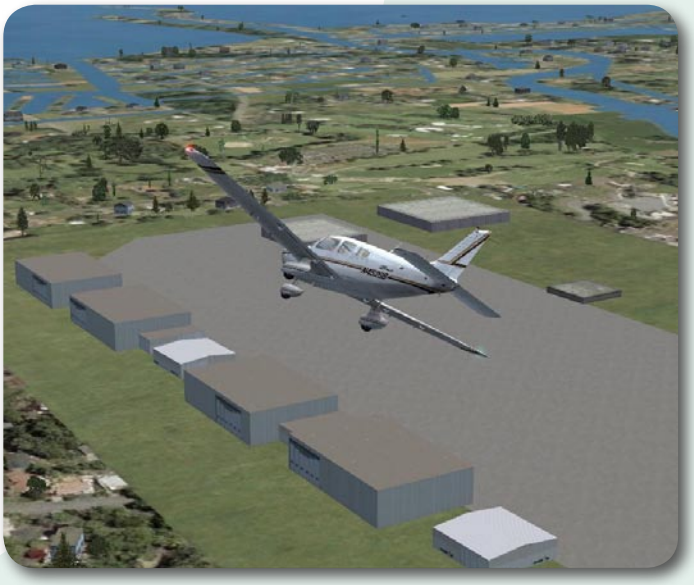
Ok, let's turn left to about 35 degrees and fly over the Detroit City airport KDET. The airport is also known as the Coleman A. Young airport in honor of a former mayor. Mayor Young served in the U.S. Army Air Force with the Tuskegee Airmen in WWII.

DETROIT CITY AIRPORT KDET

I know the area quite well and fly by pilotage, or as some pilots call it, IFR (I Follow Roads). Some of you may want to set up this flight using GPS, or VOR, and ADF - the numbers are available in your flight planner. Let's fly farther to the NE and take a look at Lake St. Clair. Turn north and follow the lakeshore to Selfridge Air National Guard Base. The guys from this base have pulled a lot of combat duty in Iraq and Afghanistan. They won't mind us circling the base. I don't see any planes down there today. F-16 fighters from the 127 Fighter Wing have been patrolling the skies over Michigan since 9/11. I am glad they are on the job. Look down, we are passing over the Clinton River. No, it is not named after President Clinton.

LAKE ST. CLAIR AHEAD

THE CLINTON RIVER MT. CLEMENS, MICHIGAN



SELFRIDGE AIR NATIONAL GUARD BASE

Let's turn NW and head for the Oakland/Pontiac International Airport KPTK, land and top off the gas tanks. After we take a little break I'll fly you over the famous Pontiac Silverdome, the former home of the Detroit Lions and Pistons. Back in January 1976 I attended an Elvis Presley concert at the "Dome". It was his last performance in Michigan. After taking off from the KPTK active runway turn south toward the Silverdome. Fly over the "Dome" then turn north toward Flint, Michigan. We are going to visit Bishop Airport, which is fast becoming a very important HUB in the state. The airport is a main stop for FedEx cargo planes and the Northwest Air-Link Mesaba. Let's grab a $100.00 hamburger at the restaurant airport. Take a break and then head east to Port Huron.

CROSSING SELFRIDGE ANG BASE RUNWAY

LANDED AT BISHOP INTL. FLINT, MICHIGAN

DEPARTING OAKLAND PONTIAC AIRPORT

CITY OF PORT HURON, MI AND THE ST. CLAIR RIVER

THE FAMOUS PONTIAC SILVERDOME

There's the Port Huron airport KPHN below. Up ahead is the famous Blue Water Bridge over the St. Clair River. The bridge connects the USA to Sarnia, Canada. Going through Sarnia provides a short cut to Niagara Falls and up state New York. Today we will just buzz over Sarnia. They can't check our ID up here. Wait! Is that a Canadian fighter on our six? No, just a large seagull!

We could follow the shoreline to Bay City, Michigan or we could swing west and follow I-75 north to route 10 interchange and turn right toward Bay City. Actually following the shoreline is a longer way because you would have to fly all around the "thumb" of Michigan (Michigan's lower peninsula is shaped like a mitten). So, I turned northwest until I saw the I-75 interchange at route 10 then turned east to check out Bay City airport 3CM and Saginaw Bay. Let's turn to about 10 degrees and fly up Lake Huron across the Straits of Mackinac to Mackinac Island. We'll fly around and take a few pictures and land at the Mackinac Island airport KMCD.

I-75 INTERCHANGE NEAR BAY CITY, MICHIGAN

PORT HURON AIRPORT BELOW

BAY CITY, MICHIGAN

While we are waiting to get cleared for landing let me tell you a little about Mackinac Island. This is one of Michigan's best and most famous tourist attractions. Visitors from all over the world come to Mackinac Island. The governor of Michigan has a summer home on the island and there are many year-round residents.

The Grand Hotel is the best place to stay on the island. The hotel was built in the 19th century and it is beautiful. I understand the current rate is about $174.00 per person based on double occupancy, but the price includes two meals. Of course there are other less expensive accommodations. The Hotel's big claim to fame is that the movie "Somewhere in Time" starring Jane Seymour and Christopher Reeves was filmed there. The movie has become a classic.

TAKE-OFF FROM MACKINAC ISLAND AIRPORT, MICHIGAN

OVER THE STRAITS OF MACKINAC

We'll fly over and take a look at the hotel and the docks. I have spent many happy hours on the island. There are no motor vehicles allowed on the island. You can walk, rent a bike, or take a tour in horse drawn carriage. There are many arts and crafts shops, art galleries, and restaurants. The only way to get to the island from the mainland is by high-speed ferry boats, or fly in like we are doing. Of course if you want you may swim the straits. Don't worry there are no sharks. Ok, there's ATC with our clearance, let's land and I'll show you around the town and buy you some Mackinac Island fudge.

It is the best in the world. We can also try the ice cream, which is heavenly! I also want to show you Fort Mackinac. The British built the fort during the American Revolution in order to command the Straits of Mackinac. The British and Canadians held the fort until the War of 1812. Two battles were fought over the island and the fort. The Americans won and acquired the island for Michigan. The fort was closed in 1885 and is now a designated National Historic Landmark.

Well, the tour of the town was sweet (no pun intended), but we have to move on. Let's take off and get a look at the Mackinac Bridge. The bridge is directly across the straits from the airport. The Mackinac Bridge, built in 1957, is the third longest suspension bridge in the world. It was the first until 1998 when Japan and Denmark built theirs. Japan is now first and Denmark second. The suspension portion from anchor pier to anchor pier is 8,614 feet. Including all approach spans the bridge is 3.4 miles long. Actually, from the entrance to the bridge and exit on the Upper Peninsula it is 5 miles long. The governor of Michigan leads a walks across the bridge every Labor Day. The walk is now a tradition of Michigan. Our current governor Jennifer Grandholm was the first to run the five miles. Isn't it a beautiful sight? Just to give you a good look I am going to fly under the bridge. I don't see any U.S. Coast Guard boats down there to report us. Hang on here we go! Now that wasn't so bad. Was it? I once flew a P-51 Mustang, a WWII fighter plane, under the Golden Gate bridge in California. Did a couple of loops, buzzed the tower at the San Francisco airport and was having a ball. Suddenly ATC came on and said, "Ok, buddy thanks for the air show now get back in the traffic pattern if you want to land."

FLYING UNDER THE MACKINAC BRIDGE

Let's head north again to Sault Ste. Marie (pronounced Soo Saint Marie) and take a look at the Soo locks. The town is called Sault Ste. Marie on both the Canadian side and the Michigan side of the locks. It is also a tourist attraction. There is a maritime museum, restaurants, and gift shops. Lodging is available at very reasonable rates. You can even book an evening dinner cruise through the locks. The Soo locks are the busiest in the world more than 12,000 ships pass through each year. When you realize that the locks are closed during the winter from January to March, that is a lot of traffic. The locks provide a bypass of the rapids of the St. Mary's River where the water falls 21 feet from Lake Superior. The locks provide a connection between Lake Superior and the lower great lakes.

SAULT STE MARIE, ONTARIO, CANADA

TAKING OFF IN THE RAIN AT SAULT STE MARIE, MICHIGAN

BUZZING THE SAULT STE MARIE TOWER

Well, let's take a few pictures, buzz the tower on Canadian airport side (they love it when I do that!), land and refuel at KANJ, the Soo airport on the American side. I hope you enjoyed the trip. Oh, you can fly us IFR back to Detroit - just follow I-75 South. I am going to take a nap.

Happy Landings! ✈

INBOX

Subject: Vail Departure

Dear Computer Pilot:

Earlier this year my wife and I went to Vail, CO for a ski vacation. Living in Chicago, we are fortunate in that we are able to get a direct flight to many destinations, including Vail. During the winter there are daily flights from Chicago to Eagle County Regional Airport (KEGE) near Vail. Our flights to and from Vail were on a Boeing 757 aircraft.

The flight from Chicago to Vail was in good weather and was non-eventful. Although there are several other airports in the Rockies where the approaches are more challenging, our flight provided magnificent views of the snow covered mountains on the final approach into the valley.

The return flight home, or at least the initial phase of the flight was more interesting. First, our flight was delayed slightly because the incoming flight from Chicago encountered a flock of birds on final approach, some of which were unfortunately ingested by one of the engines. After the engine was inspected to verify that no damage had occurred, we boarded the plane and taxied to the threshold of Rwy 7. The plane remained in this position for 15 minutes. Then the pilot made an announcement stating that due to heavy tailwinds, the plane would need to takeoff from the other end of the runway (Rwy 25). While the plane was taxiing to Rwy 25 the flight attendants made a discreet count of the number of children onboard to estimate the total weight more accurately. After a short time at the threshold to Rwy 25 the plane took off and the remainder of the flight was non-eventful. Shortly after takeoff, the pilot explained that the child count and weight estimate were necessary to determine if the required rate of climb could be achieved with one engine out.

Upon returning home, I practiced the Gypsum Three Departure from Rwy 25 using flight simulator. The procedure involves a left turn immediately after takeoff to avoid a mountain at the west end of the airport. I noted while at KEGE that at least one private jet took off due west over this mountain and that the procedure is apparently not mandatory for general aviation. I found that flight simulator with add-on scenery for Colorado provides a reasonably accurate depiction of the mountains surrounding the airport.

"Michael Rosen" WINS 12 MONTH COMPUTER PILOT SUBSCRIPTION/EXTENSION!

I have been involved in flight simulation for nearly 10 years. I enjoy simming because it is educational, challenging and is constantly evolving in terms of graphics and flight modeling. Not to mention the multitude of high quality commercial and freeware add-ons that are readily available. The magazine offers a great way to stay involved in flight simulation. Keep up the good work.

Michael Rosen
Libertyville, IL

[Michael, Thanks for the letter. It reminds me of a go-around on a flight to Sydney one year aboard a 737. We were not far from touchdown when the engines roared to life and around we went again. There were no birds on final, but apparently another pilot spotted something coming off the previously departed aircraft, so a go-around was requested for safety. I think it ended up being some rubbish just blown up from the engines! – Ed]

Subject: Am I Alone?

Each month when I receive your magazine I try very hard to put it on one side and not open it as I know if I do, I will just read the whole thing in one sitting. Sometimes I can go for two weeks at a stretch. Needless to say, I enjoy the magazine very much.

Now comes the however. However, I find that there are less articles that I can relate to. You seem to have started doing more articles on kit building, designing missions for FSX and other exotic things. There is less and less articles that suit me. Let me explain. I have been a FS user since it started but I sometimes put it aside for a while and then always come back to it. As a result I have never progressed to the point of flying the "heavies". I try but I don't get to use all the fancy equipment and always result in "overspeeding". Give me the single engine Cessna every day. I need more articles about how to fly. The tutorials in FS9 and FSX don't quite cut it. Don't forget that some people reading the magazine may be first timers and so I think I am suggesting that you get back some basic things. You could do whole articles on the use of the trim for example. I do think that you are now catering to the top end of the market , people who are at home flying with the virtual airlines rather than the lower level players such as myself.

Thanks for listening..
Peter Evans

[Peter, thanks for your email. You have some fair comments there. Of course, our recent series on mission building and building your own home flight deck are not going to be around forever. So we will definitely not be steering the magazine down a narrow alley in terms of scope. Now and then we choose to look deeper into certain aspects of the sim. This we believe is justified, and we have had a lot of readers comment on the usefulness of such articles. It is tough to give every single reader what they are looking for each issue, so we do try to offer a broad range of articles. You will probably find the next six issues or so will start looking at other entirely different areas of flight simming. The flight sim world is constantly changing, and we also like to think we change our content to match this. The majority of our content is shaped by what we hear back from readers, so naturally, your letter will also be considered along with the many others we receive on a regular basis. But stay tuned, we will be offering articles for all skill levels and reader interests through to the end of the year, throughout 2008, and beyond! – Ed].

Write To *Computer Pilot INBOX*

If you have something you want to share with fellow flight simulator enthusiasts, then Computer Pilot INBOX is the place to be heard. Each issue, we'll choose the best letter as the letter of the month and reward that reader with a prize!
The easiest and quickest way to submit your letters is by e-mail to: *inbox@computerpilot.com*

THE ART OF DESKTOP INSTRUMENT FLYING

Instrument Scan - Seeing is Believing

Skill Level: **Intermediate - Advanced.** Instructor....**Roger Curtiss**

The last reported weather was stated as "wind 310 @ 14 gusting to 21. Visibility ½ mile in rain. Sky conditions 200' overcast thunderstorms in the NE quadrant altimeter 29.88". The pilot could hear the rain pounding against the windscreen and metal skin of the Cessna and the lack of any visual reference outside made it obvious that the actual conditions were certainly not any better than that report. The occasional bolt of lightning was not reassuring either. But the pilot persevered.

ATC issued the clearance for the ILS approach and the pilot turned to intercept the localizer. The localizer indication moved toward center and the pilot turned to keep it centered and then slowed the airplane, set the flaps and began to follow the glideslope toward the runway. Keeping the needles centered required a slight crab to the right to counteract the quartering headwind. As the airplane neared the decision height the pilot looked up from the instruments to peer out the windscreen…nothing-just solid grey and rain. Back to the instruments…glideslope is about ½ a dot low…add a little power and pull back slightly on the yoke.

Another look outside…was that an approach light? Looking intently the pilot waited as another wisp of cloud passed by…yes-those are the approach lights…now…where is the runway? Looks like I am a bit right of the centerline - must have overcorrected for the wind or is it a bit calmer here…correct to the left.

Look inside the cockpit…hmm…airspeed is a little low - add power and keep the nose from rising…there…speed is good. Back outside…damn, drifted too far to the left and I am a bit low. Add a bit more power…raise the nose a hair and ease the airplane to the right---get that centerline back and now flare and land.

The wheels hit and the airplane slowed. Exit the runway, run the after landing checklist and taxi to parking. Once the airplane has been parked take a moment to relax and think about that landing. There must be a better way! Indeed there is.

Another approach to the approach

The weather was not favorable. There was no question of attempting to look out of the cockpit windows for guidance as night skies were further darkened by an overcast cloud layer reported at 500 feet with rain and fog reducing visibility to no more than 1.5 miles.

This was of little concern to the 737-200 flight crew preparing to fly the approach as the cockpit instrument displays provided them all the information they needed to guide their 60,000 lb jet to intercept and fly the precise path for runway intercept.

"You are 7 miles from the outer marker. Turn left heading 190. Maintain 3000 until established. Cleared for the ILS 16C approach." Air Traffic Control provided the vector to the final approach course and the airplane's navigation radio received the localizer signal. The plane turned smoothly onto the final approach course and the First Officer watched as the glideslope indicator moved down from the top of the scale as the aircraft now intercepted the vertical guidance signal.

Throttles were pulled back to reduce airspeed to the computed Vref +10. As the blue outer marker beacon illuminated, full flaps were selected, the landing gear was locked down, the ground spoilers were armed and the autobrake switch was set. "Landing Check complete" announced the Captain as he stowed the checklist. The aircraft was now configured for landing and the FO maintained a practiced crosscheck of the attitude indicator (AI) against the airspeed indicator (ASI), altimeter (ALT), vertical speed indicator (VSI) and heading indicator (HSI). This instrument scan continued in a steady flow AI-ASI-AI-ALT-AI-VSI-AI-VSI-AI as the 737 continued its descent to the runway.

As the aircraft dropped below 500' the heavy overcast passed overhead and the cockpit became incrementally brighter as that curtain was no longer enveloping the windows. But the FO was oblivious to this as she maintained her instrument scan AI-ASI-AI-ALT-AI-VSI-AI-HSI. The localizer and glideslope indications remained centered as the aircraft precisely tracked the ILS vertical and horizontal signals.

"Approach lights in sight" called the Captain and the FO lifted her eyes from the instrument panel for the first time since commencement of the approach. She looked out of the cockpit windscreen to take in the visual picture. This was not as simple a task as it may appear and it signified the beginning of an extremely critical phase of the approach - the transition from instruments to visual in order to complete the approach and landing.

Reliance on instruments requires a variety of mental gymnastics to be performed as each instrument indication is perceived and then interpreted and related to the conclusions obtained from the other instruments' readings to form a mental picture of the airplane's status, movement and trends.

To now utilize direct observation of the outside scene meant that some of the interpretative functions were simplified but still the visual picture had to also be perceived, analyzed and then compared to the mental construct gained from the "instrument picture."

The FO had an idea of what that visual picture would be prior to lifting her gaze from the panel but there was a necessary adjustment in shifting her focus from the narrow confines of the primary instruments to the outside view and the direct sensory visual input. And this transition had to be accomplished while the 737 was moving at 150 kts airspeed and descending at approximately 700 feet per minute.

Once that visual picture was confirmed and found to be adequate; the runway environment appeared where it should be and at the correct angles; it was incumbent on the FO to keep it that way. This would be best accomplished by once again refocusing her attention to the instrument panel and scanning the primary gauges. But since this was not an aircraft capable of autoland it became necessary for her to look out of the windscreen in order to get the airplane on the runway in a condition that would allow it to also get OFF of the runway after arrival. However, focusing attention outside denied the pilot the information available from the instruments- airspeed, altitude, and adherence to the localizer and glideslope parameters. This was not a problem since she had another pilot who could relay those instrument indications to her. She maintained her outside view while listening for the Captain to call out any instrument indications that would warrant her attention. The 737 was flown to the flare and landing in a precise manner resulting in yet another standard arrival executed by a competent and professional crew working together to achieve that end.

What a difference from the single pilot in that Cessna. Of course, two heads are better than one and the solo pilot does not have the luxury of being paired with another crew member. But safety does not care how many bodies are in the cockpit. So for the solo pilot there needs to be another way found to maintain situational awareness.

The solution; as it is for so many things in life; compromise –using both instrument and visual references.

INSTRUMENT SCAN USING AI AS PRIMARY INSTRUMENT

LANDING SCAN WITH OUTSIDE VIEW ADDED AND USED AS PRIMARY

Working it out

A very effective way to accomplish this goal is to have the pilot utilize the visual environment outside the cockpit but not relying solely on that view. Instead, the pilot takes that visual information and incorporates the visual scene as another aspect of the instrument scan. So the same rules of scanning technique apply; take a quick look out the windscreen, interpret what is being seen and then return to the instrument panel to view an instrument. The only change to the scan technique would be to give the outside view the priority that previously was held by the attitude indicator in that it (the visual scene) becomes the primary "instrument". Any look away from the visual to an instrument is followed by a re-visit to the outside view before looking at another instrument.

As tedious as this technique may sound it should be remembered that this is only being utilized during the final phase of the approach so it will not be necessary to maintain it for an extended period of time. Further, it is only needed during poor meteorological conditions so it need not be used on every landing.

One potential disadvantage to this technique is that it can be difficult to make the transition from focusing one's eyes on the close up instrument panel to re-focusing on the more distant outside view and then shifting back to close up focus and repeating this procedure.

Some of this difficulty is minimized somewhat by the fact that by having paid close attention to the instrument indications the pilot should have an idea of what to expect when looking out the windscreen. If the ILS needles have remained centered then the runway environment should be expected to appear pretty much centered in the windscreen view. Likewise, once an outside visual picture has been obtained; the look back to the instrument panel will be mainly to verify that the instruments are still indicating a precise arrival path and proper airspeed. Because this is a relatively quick scan it is reasonable to believe that there will not be much variation in between the check in with each instrument. The instrument scan then becomes simply a confirmation that everything continues to be correct.

In addition, the outside view is providing a great deal of information- lateral and vertical flight path can be quickly discerned as well as a good idea of forward speed. By utilizing the outside view as the primary "instrument" the rapid return to this view after checking a single indication gives the pilot the "big picture" update every few seconds.

As the runway end becomes progressively closer the need to check instrument indications will decrease until a point where the final landing maneuver is conducted visually. There are no set rules as to when this will occur - it will obviously vary on each landing in accordance with the meteorological conditions present at the time.

It is generally considered that landing is the most difficult activity in flying. There is no question that once one has committed to a takeoff it will at some point be necessary to land- so doing it right is vitally important. A significant amount of primary pilot training time is spent in airport traffic patterns - and rarely is that because the student pilot needs more practice getting the takeoff right. And the ability to land on an aircraft carrier's miniscule and pitching deck is how naval aviators earn their gold wings. Furthermore, rightly or not, those watching a pilot judge the skill level by the landing so there is a pride factor at stake here as well.

The key to a good landing is a stabilized approach- that is, once within 500' AGL the aircraft should be on a steady descent of no more than 700 fpm and in the correct configuration and at the proper airspeed for landing. If such is not the case the landing attempt should be terminated and missed approach procedures initiated.

These factors are easily verifiable when on a visual approach. If the approach is being conducted on instruments in adverse weather conditions then it becomes a much busier affair unless one has the luxury of simply activating an autoland function. But since real pilots land airplanes by hand it is well worth examining the critical transition from instruments to visual (to say nothing of the fact that quite possibly one day that autoland button will not engage and there will be no choice but to manually land the aircraft).

An instrument approach is unparalleled at providing precision guidance from a considerable distance out from the runway, however, its usefulness ends just before the runway threshold and the pilot must go from instrument guidance to visual cues in order to effect a landing. And that transition from instruments to visual can be difficult and demanding. One way to tame the beast is to have that transition be a gradual one.

Much has been written (and by writers more expert than I) about proper instrument scan techniques and I do not intend to launch into a dissertation on that subject at this time. There are variations on the exact technique but the principle remains the same in all instances:

- **Interpret each instrument's indication**
- **Do not fixate on any one instrument**
- **Keep the eyes moving in an established scan of all the relevant instruments**
- **Maintain a mental picture of what the instruments are telling you about the airplane's position and movement**
- **Verify what each instrument is indicating by cross-checking with other instruments**
- **Stay ahead of the airplane by quickly responding with appropriate control movements to any indication that begins to stray from what is optimum**

When operating in solid Instrument Meteorological Conditions (IMC) and on final approach there is little room or time for guesswork. Have I broken out of the overcast? Is the runway environment visible? Is the runway clear of other traffic? But obtaining answers to these questions is needed in order to complete the approach and landing. And that information can only be obtained by looking outside the airplane.

In the multi-crew cockpit the workload can be divided. The Pilot Flying (PF) maintains a constant vigil on the instruments while the Pilot Not Flying (PNF) looks out the windscreen and reports when the approach lights or the runway come into view. At that call the roles are reversed; the PF can now use the outside view as the primary reference while the PNF watches the instruments and makes the appropriate callouts if necessary.

This sharing of responsibilities is readily apparent when listening to recordings of perhaps the most difficult landings of them all- the six Lunar Module approaches to the moon's surface. The PF kept his eyes outside while PNF voiced a nearly constant stream of guidance cues reporting descent speed and forward speed.

The use of the visual environment as another instrument in the scan allows the solo pilot to have close to the same level of situational awareness. The only thing better is to use a heads up display (HUD) that projects instrument readings in the pilot's line of sight when looking out of the windscreen. This has been implemented in computer flight simulation, most notably by John Gibbs with his Allied FS Group HGS system (**www.alliedfsgroup.com**). The HGS was designed to work with FS2k and FS2K2 but unfortunately has not been reworked for use with FS9 or FSX cockpits.

There is no such thing as too much situational awareness and this scan technique definitely helps to maximize the amount of information available to assist in responsible cockpit decision making. Give it a try and see if it helps to make you a better pilot. ✈

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COMING UP...
...in the November 2007 Issue

VFR Flying in the Water Wonderland – Part II
Want to undertake more adventurous flights in the Water Wonderland? Well, Tom is back with another round of sight-seeing bliss as we adventure more around the state of Michigan in the USA.

Flight Simulator X: Acceleration Preview
Microsoft is set to release their new update pack for FSX. We take a look at what simmers will be enjoying in the first official add-on pack for Microsoft Flight Simulator in many years. Plus we have a behind-the-scenes interview with the development team!

Flying Green with Farmboyzim – Greenland
This time around, we are going to head over to Greenland, and see for ourselves (virtually of course!) just what is going on with the North Polar Ice Pack and the Ice Sheet that covers Greenland. So put on your thermal underwear, crank up the heat in the cockpit, don't forget to turn on the pitot heat, and settle in for an adventurous and chilly flight in the great northern expanses!

Making it Real – Part II
If you've been flying MS flight simulator for as long as Gwyn Perrett has, there's no doubt you already take real weather for granted. Now you can uncover the boundless possibilities of integrating real ATC into you flight sim experience...

Running Flight Sim X on a Quad Core System!
Ever wondered how the power hungry FSX would run on a Quad Core processor system? Or perhaps even a double Quad Core system? The wondering is over! David Smith brings you the real results as he puts FSX to work on a processing beast!

Lesson: The Approach Into Lukla
If you search through most of the flight sim forums on the internet, at some point in time the question will have been raised 'What is the hardest airport to fly into?', and just about every time one airport comes out on top... Lukla.

Lesson: Spin and Stall Recovery
We take a look at recovering from some nasty in-flight aircraft attitudes. Learn how to save yourself from a serious incident!

Reviews
We have planned reviews of these great new flight simulation products:

- Vox ATC X
- MegaSceneryX titles
- Flight Tales 1
- Airport Facilitator X

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More great freeware offerings, found and reviewed!

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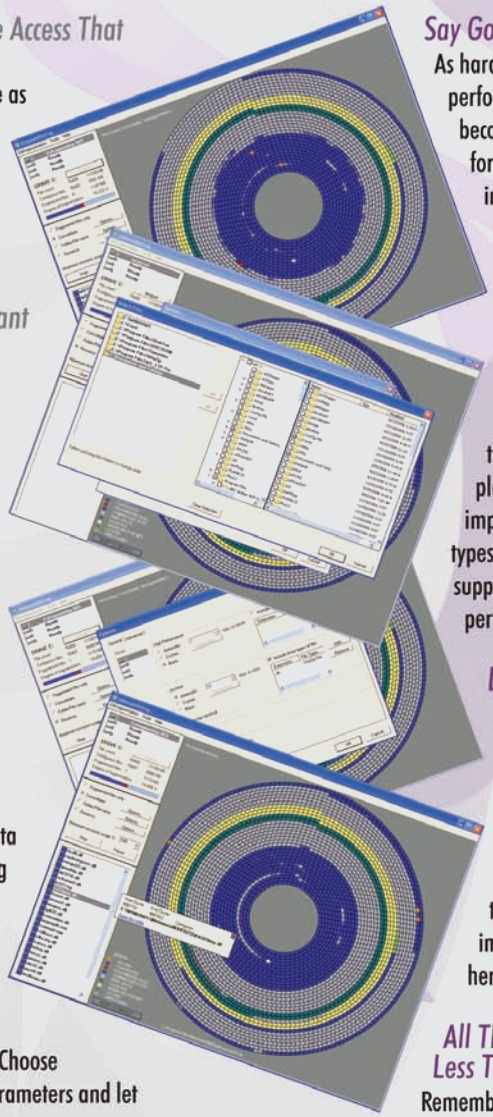

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