

'Home made' B747 circles the globe

The round the world flight in a Boeing B747-400 built by Matthew Sheils in his factory at Chipping Norton in Sydney was six months in the planning and a labor of love from Matt to ensure that the simulator was fully operational by the departure date of November 9.

The simulator has taken three years to bring it to the stage it is at now and the total project is spanned over ten years with the finished simulator being full motion driven by hydraulic rams. Eleven computers and 36 programs were needed to provide the realism that was experienced during the flight.

Interested groups all over the world watched the progress of our flight on their home computers that were connected to VATSIM. (Virtual Air Traffic Simulation Network). Special software freely available from the net enabled a World Map to be displayed that showed the progress of our World Flight Group around the world.

As departure time approached (Thursday November 8 1900hrs Zulu), preparations went into overdrive with arrangements being made for crew rostering, catering arrangements by Gate Gourmet and a thousand and one other small tasks that had to be attended to.

The B747-400 simulator crew consisted of, captain, first officer, second officer and a dispatch officer. The captain, first and second officers were in the simulator while the dispatch officer was in an office outside. The pilot flying and pilot not flying duties were rotated as they are in real life and the addition of a second officer was necessary due to the complexities of the radio frequency switching problems associated with the online software.

The dispatch officer obtained real world weather reports from his system and prepared the flight plan using real world software found in many airline dispatch officers around the world. Approach plates for each airfield visited were provided courtesy of Jeppesen and were all current issue. The completed flight plan together with en route conditions and



**By Terry Scanlan
World Flight 2001 Director**

charts were handed to the crew at a briefing prior to boarding the simulator.

The first leg of the flight was from London's Gatwick Airport to Manchester with a planned duration of 1:03. Traffic in the London TMA was heavy as it was their peak hour (1900hrs) and some delays were experienced in getting clearance for departure.

This may seem strange as we were sitting in the simulator at Chipping Norton but as the flight was conducted online using simulated ATC we had to fit into the heavy traffic patterns in the UK. From Manchester we flew across to Copenhagen and then down to Zurich where we waited for the other aircraft in the World Flight Group to catch up.

Two home built Simulators were used and the other aircraft in the team were home based desk top PC's using Flight Sim 2000 software by Microsoft all being flown online with the VATSIM net-

work.

Our team consisted of 15 dedicated real world and virtual world pilots and we were able to share the load between us. The Dutch team consisted of one pilot flying his sim from the lounge room sometimes staying with us through three crew changes before going onto autopilot for some rest.

By the close of DAY 1 we were well into the flight and passing through Istanbul, Tel Aviv, Dubai and Bombay. These flights did not exceed 3:30 in duration but the long hauls were fast approaching.

Gate Gourmet meals kept us well sustained with the crew taking their hot meals on their lap on plastic airline trays that you would find in any aircraft galley once again adding to the realism of the flight.

DAY 2- Found us doing the longer sections, Bombay, Bangkok, Darwin, Brisbane and then out over the Pacific to Nadi in Fiji.

By this time all the crew were familiar with the operating systems of the simulator and really got into the swing of things.

Food was not simulated

AOPA staffer Gregg Lucas "flew" a sector with World Flight and was pleased to report that there was nothing simulated about the food -

Sometimes it seems a little hard to choose an international airline - but after completing a sector in a B747-400 based at Chipping Norton in Sydney's south west, I can heartily suggest you won't go wrong if you choose your next international flight by choosing an airline which uses Gategourmet as their caterer.

At Chipping Norton I hear you ask - well that's right! We completed a sector from Seattle to Regina, Canada, in the 747-400 simulator as part of the World Flight Australia Round The World Flight, where a group of aviation enthusiasts are flying around the world in a home-built jet aircraft simulator in order to raise money for charity.

It has Boeing 747 seats, it has Boeing 747 yokes, it has a glass cockpit - a very clever glass cockpit I must admit, but none the less a glass cockpit, Boeing lighting, FMCs, and a front projection which displays the real time action out the front window.

So when we landed at Seattle, there was Seattle which replicated the layout on the Jepp chart. First Officer position also has the fair dinkum Boeing fitout and the Second Officer position also has the innovative glass cockpit fitout.

The leg in which I occupied the jump seat was flown by Matt Sheil AOPA Member 35717, First Officer Jeff Baker, Second Officer Dean Constantinas, and on the despatch desk was Ed Parker. In all about twenty pilots and crew were involved in the flight.

All of the weather is real-time, taken off the NOAA satellites and fed into the



network which comprises nine computers in the sim, three computers at the despatch desk outside, and utilising 39 computer programs.

When we left Seattle we received the ATIS advising, and when approaching Regina we were advised by the controller there by voice over the network, that amongst other things the OAT on the ground was -2 degrees. There was even a misting of snow on the ground when we arrived, and, when we were preparing to leave the terminal, and as we passed through certain flight levels on climb and on descent, Flight Attendants voices could be heard briefing the passengers on safety items such as seat back, trays and seatbelt signs.

Programs in service are PS1, a dedicated 747-400 flight sim from Aerowinx, Flight Sim 2000, Squawk Box and ProController.

This all needs some co-ordination, and the World Flight sim is connected by a standard modem to the Internet where other online aviators and ATC operators assist with the realism of synthetic flight. In fact AOPA Member 41964 David Palmer while operating the despatch desk provided support as Bombay Approach and in an air of further realisation, spent

the whole thirty moments in character with the correct accent.

Of course none of this would have been possible without the sponsors:

- * National Australia Bank
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- * Aerowinx
- * JeppView
- * Gowans and Sons Printers
- * CSI Cockpit Simulation
- * Command Fliteware International
- * UK Scenery 2000
- * PS1 Flight Planner

AOPA got a mention on the World Flight webpage.

Matt Shiel and the team have done a wonderful job of this project sitting in a corner at Matt's factory.

You may be thinking that you have "flown" virtual flight simulators before (and yes I have had my go at FS 2000 pro and networking MS CFS2 with my nephew Jordan) - but none of those are a patch on this Flight Simulator.

To read more about the world of silicon-based flying, go to www.aopa.com.au, then Useful Links, and under Virtual Aviating you will find SATPAC, an AOPA Affiliated Aero Club where you fly to your hearts content without leaving home.

Rest periods were forgotten with some of us going for 30hr stretches before noticing that we had not taken any rest. A quick two to three hours on a mattress in a back office revived us for another long stint.

Mechanical problems with the simula-

tor were few with the major one being a total power outage of the building whilst we were in the cruise. Fortunately being a simulator it only took us around 20 minutes to reboot all the systems and get underway again. During the five days it

was necessary to shut all the systems down and restart several times to clear bugs out of all the software running.

DAY 3- and we were approaching the North American Continent en route from Honolulu to Seattle.

The other aircraft in the World Flight were always visible to us on our TCAS system as we could see them out to about 40nm from our position and it was nice to be able to chat with the other aircraft via our "ROGER WILCO" software that allows us to use voice communications across the internet.

Our crew was in Chipping Norton, the UK group in London, the Dutchman in Amsterdam and another Australian on the Gold Coast - but all our aircraft were in the same airspace over the Continental USA chatting like we were next door to each other.

After a short time spent in Canadian Airspace the route then took us South to Denver Colorado with a spectacular nighttime approach to Denver, 5400ft in altitude. Snow capped peaks could be seen off both sides of the aircraft with snow showing on the runways.

DAY 4 -The days are passing so quickly with so much to do, crew changes, meals, flight planning and very little time for sleep. Some of the crew were able to return to their homes between flights as they lived nearby whilst other members remained at World Flight Headquarters for the five days and camped where they found a quiet part of the office.

From Denver we once again held a southerly course and headed on down to Houston, a flight of about 2hr:30mins. These are the nice legs as there is not a lot of time between the departure and arrival. All pilots would appreciate that the most interesting and challenging part of flying is in the take off and landing of any aircraft.

Our B747-400 simulator was equipped with full auto landing capabilities but we were all "encouraged" to do the landings manually. This all added to the challenge of flying the simulator and as we all found out, the manual landings were far more rewarding than using the auto land facility.

After departing Houston in marginal conditions the flight then headed for the South American Continent with the first stop at Quito in Ecuador - an airfield situated at 9250ft and located in a valley between high mountains.

The skilful South American controllers were quite familiar with approach procedures and armed with our Jeppesen charts we were able to negotiate our way down into this high altitude airfield. Landing at altitude brings in a lot of factors as the air is thinner and flap and auto brake settings are somewhat different to those at sea level.

The scenery that we had on approach

to Quito was stunning with high snow capped mountains. There were three aircraft ahead of us on approach and it was fascinating to see them making their way down through the mountains to Quito.

The stop at Quito enabled us to change crew, service the aircraft and once again enjoy a hot "Gate Gourmet" breakfast. During World Flight we crossed through a lot of time zones but we used our local time in Sydney to plan our meal service.

From Quito a three hour run found us making an approach to La Paz in Bolivia. This airfield is at 13300ft and you almost need to be on oxygen when the aircraft doors are open.

I had a quick look around during our stop to see if I could see "Butch Cassidy and the Sun Dance Kid". Unfortunately we could not meet them, as they were out robbing banks somewhere. For those old enough to remember, this was the movie filmed in the early 70's with Robert Redford and Paul Newman as the stars. The movie ended with a shoot out somewhere in Bolivia.

Next stop, Rio de Janeiro - "River of January", that fabulous city in Brazil where I promised the crew I was going to go and find the "Girl from Ipanema".

Time for a reality check - after spending so much time in the SIM and looking at the great scenery installed for the flight, that is was necessary to take a "reality check" every so often as one can get a bit carried away with it all.

The flight from Rio de Janeiro to Cape Town is about eight hours and for this leg we had scheduled a crew change mid flight.

DAY 5 - All the crew is holding up remarkably well due to the number of volunteers we had. It is to their credit that they all kept to their scheduled flights and not once were we short of any crew.

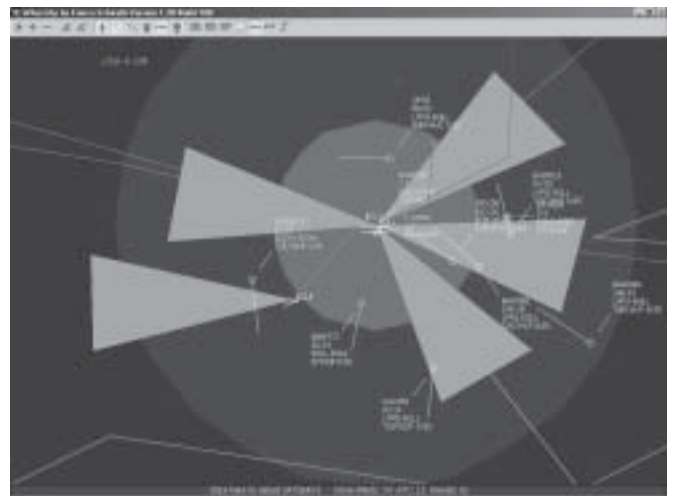
Cape Town to Johannesburg, a flight of about two hours and flown with some of the best ATC during the trip. The South African controllers were courteous and very skillful and it was to my surprise that I found that they were all fairly new to the Simulated ATC system

The route then took us on up to Milan via Nairobi and Cairo. At Cairo we ob-

tained the weather forecast for Milan and it was not good. There was fog, low cloud and the visibility was at the minimums. To add to the realism we tried to schedule an alternate for Milan but most of Europe was closed in and we decided to depart anyway. By the time we reached Milan, the weather had lifted and was quite acceptable for our arrival

DAY6 - The final day and we have already started to talk about next year's World Flight.

Milan, Paris and London - two short flights of a little over one hour each depending on traffic etc. Our QF25 arrived at Paris's Orly airport first and we decided to wait there for the arrival of the other World Flight aircraft. This was particularly hard as we were all dead on our feet



QF25 on the downwind leg for London's Heathrow Airport, the other a/c in the frame are WF a/c that accompanied us on our Round the World flight

and wanted to finish the flight and go home.

With all the aircraft assembled at Orly we departed for London's Heathrow airport and the paint on the "Radar" screen was impressive with all the World Flight aircraft following QF25 in trail.

It was Tuesday November 27, 1700hrs Zulu time for our arrival and the UK Flight Sim community had turned out in force to provide ATC and traffic to make the approach into London's Heathrow more interesting.

A safe arrival saw the 747-400 parked at the gate and the crew made a hasty departure home as it was 0400 on Wednesday morning.

Total time "in flight" was approximately 100hrs with a total overall time from departure to arrival 118hrs.

With World Flight 2001 for the RFDS now behind us, planning is now underway for next years flight where we hope to reach a target of \$50,000 for the RFDS.