

## **USAF chooses Lm2 simulator motion modifier for KC-135 training**

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London

Source: Flightglobal.com

15:18 1 Jul 2014

Belgium-based technology company AWx has sold its patented flight simulation motion modifier – known as Lm2 – to the US Air Force to equip its Boeing KC-135 simulator training organisation at Scott AFB in Illinois.



US Air Force

The order was placed in May under an agreement between AWx, the USAF and the Tampa, Florida-based US branch of Canadian simulation company CAE, but has only just been announced. It will result in 19 of the service's operational flight trainers (known as full flight simulators to non-military customers) being equipped with Lm2 lateral motion modifiers.

Lm2 can be fitted to any full-motion simulator, according to AWx managing director Filip Van Biervliet, and makes manual handling, especially for complex stick-and-rudder tasks like crosswind landings, feel so realistic that such landings can be accurately trained in the simulator.

A previous customer, Cathay Pacific Airways, purchased Lm2 for just such training across almost all its types, and AWx's recent launch customer in the USA was Atlas Air, which used it to upgrade the motion systems on its Boeing 747-400F simulators. Atlas's vice-president flight operations Capt Jeff Carlson commented following trials: "Manual flight proficiency is the ultimate human factor in the safe operation of all aircraft.

Lm2 allows instructors to observe and train pilots with a much higher degree of efficiency as well as realism."

Lm2 is a patented software solution that modifies the conventional lateral accelerations applied by six-axis motion systems in full flight simulators – which frequently cause trainees to overreact, resulting in pilot-induced oscillations. AWx is a short form for Acceleration Worx; the company was originally known as Sabena Flight Academy Development.



## Lateral thinking for simulators

By David Learmount on 1 July, 2014 in Uncategorized

Professional pilots know well that full flight simulators are excellent places to learn procedures, systems, crew resource management, and how to make the best use of your flight management system/autopilot/autothrottle.

But you can't learn to fly manually in them, no matter how good the visual systems and how faithful the cockpit model. They just don't feel the same.

In fact they're more difficult to "fly" manually than real aeroplanes are. With a bit of over-controlling you can get into a pilot induced oscillation in a real aeroplane, but in a simulator it's difficult not to get into one even if you play it gently.

Some years ago I tried flying a classic 737 simulator doing landings with a 30kt crosswind. It was not good. But then I flew the same box with an Lm2 lateral acceleration motion modifier switched on. [The difference was dramatic, and you can read about the experience here.](#)

But after that, for Lm2, everything went quiet for a long time, and it has only gradually begun to make commercial headway.

Imagine if you were one of the big commercial simulator manufacturers, and a little guy told you he had a better motion system than you or anybody else, but he had patented it.

Well, the big guys didn't like it much, but CAE has been quietly negotiating with Lm2's inventor, Capt Filip VanBievliet, whose company is now known as AWx, or Acceleration Worx, and things are changing.

Three years ago Cathay Pacific/Dragonair bought Lm2 motion modifiers for its simulators and has been delighted. Late last year Atlas Air bought the system for its two 747-400F simulators.

But the next big one has just happened: the USAF has bought Lm2 for its 19 Boeing KC-135 simulators. Because of the way the military operate, especially with classic types like the KC-135, manual flying skills are even more important than they are with the civvies. Watch this space for interest in modifying C-130 and C-17 simulators with Lm2.

Simulators are no good at teaching pilots to fly landings in a new type. Simulators with Lm2 are good at it. A couple of hard landings that bend the gear – and even the fuselage – should make it worth trying.

747-400F, Atlas Air, AWx, Cathay Pacific, Dragonair, flight simulators, KC-135, Lm2, USAF

One Response to Lateral thinking for simulators

Wayne 2 July, 2014 at 11:02 am #

Most industry changing ideas start in the mind of one person. With a little lateral thinking everything can be improved. I hope Capt Filip VanBievliet gets well rewarded for his efforts!