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HARDWARE

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Hardware
Review



**Honeycomb
Aeronautical's**

Alpha Flight Controls

A game-changing yoke



Above: A switch panel includes controls for external lights along with dual master and avionics master switches. Right: Twin rocker switches and two push buttons can be configured for a variety of functions. Left: Honeycomb's Alpha Flight Control yoke is arguably one of the most anticipated controllers to be released in recent years. Below: Control forces are fluid and smooth. An RJ-45 cable connects the base to the yoke as the wiring can't pass through the solid steel shaft.



After more than a decade since Saitek launched the Pro Flight range, there is a real hunger for new controllers in a similar price bracket. So it comes as no surprise that when Honeycomb Aeronautical announced it was working on a new yoke, the news caused a great deal of interest in the flight sim community. Called the Alpha Flight Controls, the yoke was initially set to launch towards the end of 2017 with the Bravo Throttle Quadrant due to be released early the following year. However, the project has been delayed by almost two years as the company has continued to refine the design.

So when Honeycomb CEO, Nicki Repenning approached us with the exciting news that development of the Alpha yoke was complete, it seemed like the perfect opportunity to meet up with him to find out more. Nicki also provided us with a pre-production unit to put through its paces, so we can give you a first impression of this highly anticipated controller.

Honeycomb Aeronautical

Nicki is no stranger to flight simulation.

With more than 10 years experience in the industry, he ran Saitek in North America before launching Honeycomb Aeronautical. He also holds a pilot's licence, so when it comes to designing a flight sim yoke, he is well qualified.

Commenting on the delay, Nicki said the main challenge was to perfect the mounting system, which proved to be more complicated than expected. He also said a lot of work went into eliminating the self-centring forces to achieve smooth and fluid control forces around the centre position where most of the 'flying' takes place; Nicki wanted the yoke to be perfect before release. Honeycomb is now waiting for the tooling to be completed before mass production can begin.

Design

The Alpha Flight Control is a hybrid design made to replicate the look and feel of a typical yoke found in real aircraft. Although it is based on General Aviation (GA) types, it is also designed to work with all aircraft equipped with a yoke including airliners, turboprops and business jets. Nicki explained that

robustness and durability was an important part of the design. Metal components are included throughout and a solid steel shaft connects the handle to the base via two heavy-duty bearings, which prevents the shaft from sticking in flight. As the wiring for the buttons on the handle can't pass through the solid steel shaft, an RJ45 cable connects the yoke handle to the base.

For the design of the internal mechanics, Honeycomb partnered with Precision Flight Controls (PFC) which has almost 30 years of experience building FAA-approved flight controls. The Alpha yoke is based on the same technology PFC uses in its full-motion cockpits but scaled down to fit into a consumer product. Nicki said that he wanted the best in the industry to work on elements they were good at and PFC was the obvious fit. A self-centring mechanism provides a smooth transition to the centre point for the aileron and elevator movement. Rather than using springs that can cause the controls to snap to the centre position, the Alpha yoke uses nylon strings. This results in more uniform control ▶

forces and there is no wear so the tension will remain consistent during its lifetime.

The layout of the buttons and switches is designed to match those on real aircraft. The left handle is home to dual rocker switches that are perfectly positioned for operating the elevator trim, a point-of-view (POV) HAT switch and two push buttons, which can be configured for autopilot disconnect and push-to-talk functions. The right handle also features dual rocker switches and two additional push buttons. A switch panel on the base includes five external lighting switches, dual master and avionics master switches and a starter switch with left and right magnetos, similar to a starter switch on single-engine piston aircraft. All the buttons and switches are however fully programmable and can be assigned to different functions. Nicki explained: "Essentially, the aim was to include all the switches and buttons needed for a basic cockpit setup so users don't have to use the keyboard."

The switches on the base are backlit and can be adjusted through several brightness levels using a button on the back of the base. Additionally, mounting points on the yoke are compatible with other Honeycomb and Saitek devices so it can be easily expanded by adding more controllers or switch panels. In terms of compatibility, the Alpha yoke is designed to work with all simulator platforms including FSX, Prepar3D and X-Plane 11. It will also be compatible with Windows and MacOS, which is great news for X-Plane flyers on a Mac. Driver and configuration software developed by Aerosoft will include custom profiles for various aircraft types. Nicki commented: "They are the best in the business when it comes to software and the obvious choice."

Finally, a single USB C cable connects the yoke to the computer and no power supply is necessary. Not only is it the fastest USB standard currently available, the connector is also unidirectional and is more robust than micro or mini USB connectors.

Dual mounting solution

The Alpha yoke features an innovative dual mounting solution to accommodate tables that are too thick for traditional clamps. Firstly, a large 170mm micro-suction cup fixes the base to the desktop via a detachable mounting plate. While the 'stickiness' can be lost due to dust or dirt, the mounting plate can be separated from the base and rinsed under water to remove any particles. This effectively regenerates the 'stickiness' of the micro-suction cup. However, as long as you make sure you attach the unit to a clean surface, it will firmly stay in place. As well as a sticky cup, the Alpha yoke comes with heavy-duty metal clamps to really fix it in place.

Flight test

We put the yoke through its paces on all the main civil flight simulators including FSX, Prepar3D and X-Plane. As it was a pre-production version, we didn't have any aircraft profiles so it was configured within the



A robust dual mounting solution secures the yoke to a variety of surfaces.

simulator. To get an idea of how it performed across the board, we started with the Cessna 182 before moving up to the Beech King Air, Boeing 737-800 and the 747-400.

The micro-suction cup does a great job of securing the unit to the desk. I had it on my desk for a week and it stayed in place with no sign of coming loose. Combined with the clamps, it feels rock solid. I also like the ability to separate the mounting plate from the base so the yoke doesn't get in the way when you are attaching it to the desk.

Hooking the yoke up to the computer is as simple as it gets. After connecting the single USB C cable, it is automatically detected by the operating system (I used Windows 7 and 10), which takes a couple of minutes. Once that is done, you can fire up the simulator and configure the yoke, which works just like any standard controller either using the simulator configuration interface or FSUIPC in case of FSX and Prepar3D. With everything hooked up and configured, it was time to go flying.

The Alpha yoke provided an excellent flying experience on all the aircraft I tested. On take-off, the controls had a reassuring 'weight' to them, so on the climb-out you are quickly reminded if you are out of trim. The weight of the controls is also evident during manoeuvres. Steep turns or stalls require a lot of back pressure, while for normal flight, smooth precise inputs were needed. One thing that struck me was that the self-centring force around the pitch axis was hardly noticeable.

Although the yoke moves through a full 180° for the roll and pitch travel is 15cm, most of the flying takes place around the centre point and here the control inputs were precise and fluid with no dead zone. This strong centring force is an issue I have always had with many spring-loaded yokes but with the Alpha yoke, it is hardly noticeable. Overall, I found it did an excellent job in capturing the weight and feel experienced in a real aircraft both in normal flight and at the extremes of the flight envelope. The combination with a switch panel and a well thought-out button and switch layout will take you a long way in achieving a keyboard-free flight simulation experience.

Conclusion

I think it is safe to say that Honeycomb has easily met my expectations and quite possibly even exceeded them. For the price, it is by far the best yoke I have come across. Build quality is superb and the mechanics feel robust so I see no reason why it won't last for years. On top of that, the combination of precise and weighty control input provides an excellent flight experience. Although this is a pre-production unit, I still have no hesitation in awarding this a score of 98% and our coveted Platinum award. Great job!

The Alpha yoke is due to be released in early September and will retail at \$249.99 (£199.99). It will also come with a five-year warranty and free lifetime technical support.

By Richard Benedikz

PCP



PC Pilot Verdict

At a glance: The combination of excellent build quality and high precision provides a truly authentic flying experience at a price that is hard to beat.

Developer: Honeycomb Aeronautical

Price: \$249.99 (£199.99)

Website: <https://flyhoneycomb.com>

PC Pilot Score:

98

Left: The left handle features a point-of-view HAT, dual rocker switches and two push buttons which can be assigned to autopilot disconnect and push-to-talk functions.