



The AMA History Project Presents: History of the KNIFE EDGE SOFTWARE

Since 1995



Written by JS (05/2010); Reformatted by JS (05/2010)

Jay Smith wrote the following, published in the About Us section of Model Aviation magazine, May 2010 issue.

About Us: Knife Edge Software

Knife Edge Software is the company behind the hugely popular RealFlight line of RC flight simulators. I interviewed Jim Bourke, Knife Edge Software's general manager, to learn about his personal RC experiences and learn more about the company.

Jim was involved in full-scale aviation at an early age, because his father sold full-scale airplanes. Jim flew everywhere his father went, and the experience became as common as riding in the family car. Delivering aircraft, stopping at out-of-the-way places for the famed \$100 hamburger, and attending air shows gave Jim an early appreciation for the recreational-aircraft way of life.

As a child, paper airplanes and rubber-band-powered gliders were Jim's main focus. He created airfoiled wings for them and then tried to improve on their designs.

His first RC flight was at age 16, piloting a yellow Sig *Kadet Senior* with his art teacher. These experiences led Jim to obtain his first RC model – the popular Goldberg *Gentle Lady* glider – and a job in a hobby shop.

Jim made the decision to serve his country and spent four years in the US Air Force. During this time, he worked in the Martin Bomber Bay in Nebraska, where the *Enola Gay B-29* was built. His duty station tied in with his childhood; it was where he saw the Navy's Blue Angels perform for the first time.

In 1995, Jim started on a quest to promote electric flight in model aircraft because he thought it was destined to become the dominant power system. A frequently-asked-questions piece that he sent out via e-mail lists soon grew into a Web page, and then The E Zone and RC Groups.

That year was also when Scott Kemp founded Knife Edge Software. His original vision was a CD-ROM encyclopedia about RC models that included the process to build an airplane and an RC simulator on the CD.

When Scott pitched the idea to Great Planes, the company was most interested in the RC simulator, and Knife Edge Software was born. It was tasked with creating the first 3-D-capable RC flight simulator.

Jim got involved with Knife Edge as a programmer, and in 2002, he was given the opportunity to run the company during the development of RealFlight G3. Although his job as general manager entails many duties, he shared with me one of the most important.

“My job is to make people comfortable with RC, making it approachable,” he said.

To help him reach that goal, Jim has a talented group of employees who know the subject matter. Each is required to know how to fly RC aircraft.

If you have ever tried a version of RealFlight, you might wonder how the models and flying sites are chosen. Jim explained that the aircraft are a mix between new airplanes and those that are commonly found at hobby stores. The goal is to have a little of everything.

The Knife Edge staff also likes to throw in a couple off-the-wall subjects, such as one of Jim’s favorites: the *Wolf Spyder*. It is powered by four engines on four pods that rotate 90 degrees. The flying sites, especially Photo Fields, are based on places that the team visits or popular locations, such as the E-Fest indoor arena.

Once the models are selected, it is confirmed that they fly as closely as possible on the screen to the real airplane they represent. In earlier versions of RealFlight, this required more work. Now the software can get the subjects extremely close, based on the aircraft parameters. But Jim or his team still tries to fly every mode, to fine-tune it for the most realistic experience possible.

Jim shared with me that Knife Edge Software is driven by customer feedback. It’s also under continual development, including bug fixes – which are given the highest priority – new features, and expansion packs.

The company even focuses on hardware included with Real Flight. It upgraded the USB transmitter to have digital trims and menu buttons when G4 was released.

Jim also stressed that he and his staff are constantly flying RealFlight for testing purposes as well as to be a learning tool. This was never more evident than in Jim’s broken wing incident with a real RC aircraft.

During the development of G3, the new “break apart feature” was implemented. It enabled models to have components such as the rudder, landing gear, or wing broken off and continue to fly, but the airplanes would react differently depending on what was missing.

Jim tested this program feature repeatedly by purposely breaking off a model’s wing and then trying to successfully pilot the aircraft. After roughly a week, he was comfortably piloting the airplane and landing it with half of the wing missing.

While at the flying field piloting a friend’s *Yak*, its left wing unexpectedly broke off in a snap roll because of a weak point from a previous repair. No other damage was done to the model. Jim calmly rolled the airplane into knife-edge flight with the remaining wing on top.

He was able to land the *Yak*, and he did so without damaging it further. Jim put it down on its wheels on the runway! He was thrilled not only to save his friend's aircraft, but also to learn that RealFlight G3's physics for flight failures was accurate.

Jim's love of aviation, both full-scale and RC, is shared by his son, Raymond; daughters, Camma and Haley; and fiancée, Annette.

In addition, he is the proud owner of "*Russian Thunder*," the only full-scale *Yak-54* that is currently flying in the U.S. The *Yak* is also one of the models in RealFlight, but it was available long before Jim became *Russian Thunder's* pilot.

Knowing that, I had to ask him on more questions: "Which do you like more: RC or full scale?" He replied, "I like them both; they are not the same thing even though they are similar.

"Flying an Unlimited class aircraft is such a rush! RC provides a wide variety; you can own and fly all different types of aircraft you could never own."

-Jay Smith

Sources:

Knife Edge Software
885A NW Grant Ave. Suite A
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www.knifeedge.com

The E Zone
www.ezonemag.com

RC Groups
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