



## Dave Brown Products RCFS 2001 Flight Simulator

By Frank Granelli



Dave Brown has been U.S. National Precision Aerobatic Champion and is one of the “legends” of model Aviation. His company offers those “hard-to-find” accessories that advanced sport and competition flyers need. Items such as ultra-light wheels, affordable aluminum spinners, and a simple, practical and inexpensive fueling system (see Sport Aviator’s review of this [fueling system](#)) are just a few that most model pilots don’t know they need until they see them for the first time. Then it is hard to fly without them!

Flight Simulators are discussed in general in Sport Aviator’s “[Way Up High in the Virtual Sky](#)” article. This article series will examine every simulator in detail. Not to compare them, but to highlight the features of each. Since Dave Brown Products was probably the first company to produce an RC Flight Simulator, we will examine theirs first.



Photo 1

Dave Brown Products RC simulator comes in a small box but includes everything you need to soar into the virtual skies. The program itself is on a CD-Rom and includes 14 different aircraft representing all the major RC types. A five-channel “transmitter” with “[dual rates](#)” on elevator and aileron controls is also included. The fifth channel is used to operate retractable landing gear.

## Computer Requirements

This simulator has minimal computer requirements. The Central Processor (CPU) needs to only be a Pentium 266 MMX or equivalent. The RCFS 2001 is compatible with Windows 95, 98, 2000, ME, and XP operating systems. The software only uses 16 MB of RAM and takes up just 50 MB of disk space. A 3-D graphics accelerator card, with at least 4MB memory and Direct X support, a gameport and at least a 4X CD-ROM drive round out the computer requirements.

These very minimal requirements allow almost any PC-compatible computer made in the last decade to run this program in the basic graphic mode. Surprisingly, the basic graphics are very good and not that much different from the “picture quality” graphics available with a slightly more advanced computer. Using just a Pentium 400 with 64 MB RAM, the same operating system choices and a 16 MB graphics accelerator yields photo-quality flying site graphics. A sound card is also a good thing to get the most out of any RC simulator.



Photo 1A

If your computer has only USB connections without a game port, you will need the Radio Shack USB adaptor No. 03A04. The setting should be adjusted to no. 4 “wheel” and the USB plugged into your computer. The SimStar “transmitter” plug attaches to the adaptor’s game port input.

If there is another game controller connected to your computer, it must be removed before using this simulator if the operating system is Windows XP. The program requires that the SimStar controller be the first one listed in the controller inventory. XP seems to make that adjustment itself and places the SimStar in second position.

## Models and Flying Sights Available

There are four flying sites available in this simulator. Two are at Muncie, IN, the AMA 1,200 acre flying field open to all AMA members. In reality, there are three main RC flying sites at Muncie. The simulator flying site is Site 3, located in the middle of the grounds. This site has two runways placed at about a 30 degree angle and no obstructions within about a mile.

Even so, there is always a crosswind at this site (from personal experience). Of course, the pilot controls all the wind and field conditions in the simulator (more on that later). The second Muncie flying field is also Site 3, but marked with compass directions for training purposes. Both sites start out with zero wind, something that NEVER happens at Muncie in the real world.

The third flying site is Arbors Field. This site is surrounded entirely with trees about 50 feet high and only about 2-300 ft. from the runway. Flying here is good practice for avoiding obstacles during take offs and landings. The fourth site is Whetstone Park. This flying field has low trees far away from the two 90-degree crossed runways. All fields are represented in photo-quality graphics.



Photo 2



Photo 3

The basic RCFS 2001 includes eleven fixed-wing airplanes and four helicopters. There is a Bell Jet Ranger 206B (photo 2), a generic aerobatic helicopter and two sport machines. All the choppers can be configured for aerobatic and inverted flight using a fixed-throttle with collective (photo 3) or setup for regular throttle controlled, upright only flight.



Photo 4



Photo 5

The eleven aircraft include several trainer types like the 3-channel (no ailerons) Piper Cub powered by a .40 two-stroke engine in photo 4. Photo 5 shows a generic "trainer" with a mid-wing and powered by a standard 40 two-stroke. Both aircraft are extremely easy to fly.

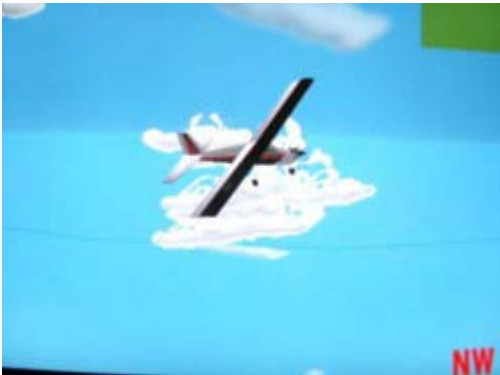


Photo 6



Photo 7

Two commercially available trainers are the SIG LT-40 Kadet (photo 6) and the Megatech Air Strike Trainer (photo 7). While the generic trainers fly trainer-like, these two aircraft fly just like their real-world compatriots. There is also an electric powered glider available (photo 8). While this aircraft has trainer-like handling, it is somewhat fast for a trainer.



Photo 8

The other airplanes included in the RCFS 2001 package are more advanced. In fact, there is a turbine powered F/A 18 Hornet (photo 9) that can get up to 198 mph in level flight. That is pretty quick by any modeler's standards. This aircraft also features retractable landing gear. Also equipped with retractable landing gear, the "Pattern" airplane (photo 10) is some 100 mph slower than the jet but is capable of excellent precision maneuvers. While just called a "Pattern" airplane in the table of contents, this aircraft is actually a 60-powered Tippoare. The brown and white color scheme is from the Tippoare that Dave Brown flew when he won the National Championship.



Photo 9



Photo 10



Photo 11

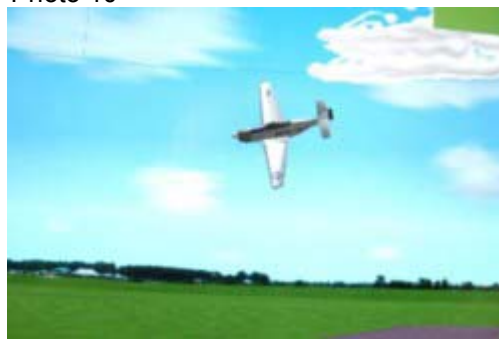


Photo 12

If Scale Aerobatics is your thing, there is an Extra 300L powered by a 1.20 four-stroke (photo 11). Would you like to fly a WW II fighter? If so, there is a 1.20 powered P-51 Mustang, with retracts, (photo 12) waiting for you on the disc. These aircraft will teach you elevator control. As would their real-world models, these aircraft tip stall, [snap roll](#) violently, if too much elevator control is used at speed.



Photo 13



Photo 14

A bit gentler, yet still very responsive, the Skybolt biplane (photo 13) is fun to push around the sky. Shooting landings with this aircraft reminds you that biplanes do slow down quickly and need to carry some engine power into the final approach for good landings. Finally there is a brightly colored "fun fly" airplane (photo 14) for those who like to fly 30 rolls and 50 loops in 2 minutes. Since there is a limbo pole available, you can practice flying under it with the Fun Fly airplane. Limbo is probably one of the most popular fun fly events and this simulator lets you get some virtual practice time before the contest.

If you want to race, a 3-pylon model race course is available for practicing before race day. Flying into one of the poles results in a very unsatisfying metallic "clang."

### Flying Evaluation

Any simulator is fun for an RC pilot to play with. It is a weather free video game that can fill in those rainy weekend days. But play is all it can be if the simulator's flight characteristics do not accurately reflect how the real world models fly. Unless the simulator accurately reflects each individual model's flight characteristics, it is just a toy.

Fortunately, Dave Brown's RCFS 2001 is not a toy. Several aircraft that I have extensively flown are in this simulator. For these aircraft, I can say that their flight characteristics are real-world. I flew. For three years I flew a Tippoare in Precision Aerobatic competition. I know its little foibles and tricks, like tail wiggle coming out of a [stall turn](#) and suddenly finding extra lift just before touchdown.

I own an Extra 330L just about this model's size and know both have the same tip stall ability with about the same amount of elevator input. Dave Brown's Skybolt biplane flies like my old SIG Skybolt, slowing on final as if an anchor had been thrown out unless one-third throttle is held into the flare on landing.

The Three-channel Piper Cub needs rudder to be held throughout the turn or it self levels the bank. This is normal for real three-channel models and is accurately reflected in this simulator. I have flown nearly 50 Kadets and LT-40 Kadets, all OPA's (**O**ther **P**eople's **A**irplanes), and know that the simulator flies just like all the real ones do. I even flew a Megatech Air Strike. The simulator allows the same very high angle of attack, nose-high flight, slow flight that the Megatech model performs so well.

I expect that the other aircraft which I have not yet flown have similar real-world flying characteristics. This means that it is possible on the Dave Brown simulator to practice model flying. The simulator is now an educational tool and not a toy. I have been using it to practice rolling circles with the Extra 300L. I learned from my simulator flights that I was misusing the rudder and that was causing problems keeping the airplane's nose pointing into the circle's interior.

After about 50 practice flights, running out of gas on occasion (yes the simulator shuts the engine down when that happens), I started to learn the maneuver a little better. Those 50 flights would

have taken an entire summer to fly in the real world and probably two or three Extras as well. (I like having a reset button!) The first time at the field, flying a SIG Four-Star 60, I was able to fly three consecutive rolling circles with the proper four rolls per circle. I guess this simulator can teach every pilot something.

That brings up the subject of what a simulator is best used to learn. Every pilot has an opinion so I'll venture mine. Simulators, including this one, are best at teaching individual maneuvers. The pilot can fly a maneuver repeatedly and without fear of aircraft damage, until it is learned. Rolling Circles are just one example but the best examples are takeoffs and landings. Practicing these maneuvers plus making level turns, really help a new pilot before, and during, those first real flight lessons.

Airplanes in the RCFS 2001 can be flown to slip landings for wind corrections. Some fly this maneuver better than others, exactly as happens in the real world. Airplanes that do not have roll coupling in the real world, like the Skybolt, Extra 300L and the Tippoare, do not have roll coupling in the simulator. Airplanes, like the trainers that have lots of it in reality, also have lots of rudder banking in this simulator.

### **The Best Feature of ALL**

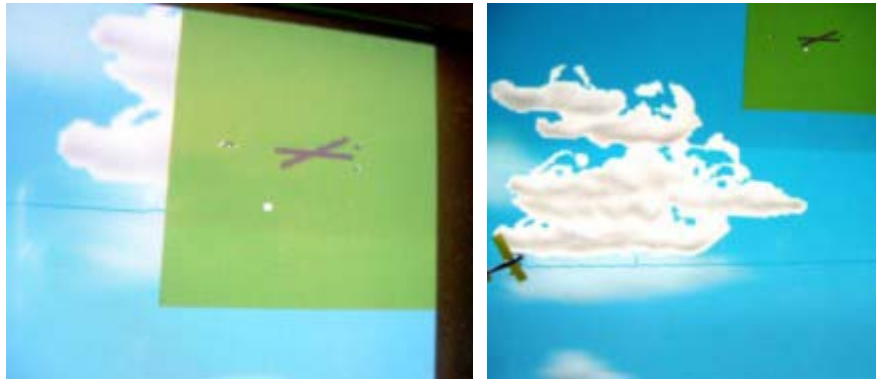


Photo 15 Photo 16

Practicing takeoffs and landings brings us to this simulator's best feature. In the preceding photos, you may have noticed a small green patch at the top left corner of each photo. This patch is actually an aircraft locator. As photo 15 shows, this small insert shows the aircraft's position in relation to the runways and to any obstacles. The Dave Brown RCFS 2001 is the only RC simulator to date that shows the pilot where the aircraft is flying in relation to ground objects.

Knowing where the runway is, as the pilot would in the real world, allows the pilot to fly landing approaches that begin some distance from the runway. Without this information making a square landing pattern is difficult and frustrating. With some simulators, the pilot sets up the approach only to find, at the very end, that the runway is pointing 90 degrees the other way. In photo 15, the aircraft is too high for the simulator user to see the ground. But the insert shows the airplane is actually almost over the runway.

Photo 16 shows the airplane (the white square) flying on the base leg of an approach, still some distance away from the runway. The pilot can establish a nice pattern approach knowing that, at its end, the airplane will be pointing down the runway.

### **Custom Abilities**

The pilot can make almost as many custom adjustments to each filed and airplane as can be imagined. The pilot's position is adjustable. Wind speed, up to ten mph and direction can be set. The pilot can even fly in fog and clouds.



Photo 17

Each aircraft's flying characteristics and parameters are fully adjustable. Wing lift, roll rates, power loadings and many other custom adjustments to each model can be tried. If you get the flying parameters too crazy, there is always the trusty "default reset" which brings the aircraft back to the "real world." Retractable landing gear, standard on the Hornet and Pattern airplanes, can be added to any model. If you ever wanted your trainer to have retracts, here is your chance (photo 17).

The pilot can add brakes, standard on the Hornet, to any aircraft, even tail draggers like the Skybolt. There are so many adjustments possible, roll response, yaw damping, etc. that any aircraft can be made to fly exactly like the pilot's model. But some knowledge is required to do this so I suggest that the new pilot fly the aircraft as originally setup, before modifying its flight characteristics.

The SimStar "transmitter has adjustable control stick spring tension. This allows the pilot to adjust the "stick feel" to more closely resemble the RC transmitter used in reality. The effectiveness of the two dual rate switches can be adjusted inside the program.

The basic Dave Brown RCFS 2001 flight simulator sells for a value price of just \$160. This is very reasonable for the reality the simulator reflects. Your first rolling circle flown on the simulator will more than pay for itself since you have just "saved" your \$500 real world Extra model!

### **Helicopters**

I cannot fly helicopters: At least not yet. The real secret to helicopter flying is trimming the model before flight. No simulator teaches that. All the helicopters in the RCFS 2001 are pre-trimmed and fly well. Even though I can't fly helicopters in the real world, I am getting fairly OK, if not "good", at getting one up and down on this simulator.

The simulator has taught me to apply throttle when I get into trouble to get far away from Terra Firma. I finally understand about collective and fixed throttle settings with reversal blade pitches. If I keep flying helicopters on this simulator, I might just have to retract my statement about my real-world inabilities. Hmmm, that could be a good idea.

### **Add-Ons**

Two add-on packages are available for just \$50 each. There is one, Library 1, just for aerobatics, featuring ten scale aerobatic aircraft similar to those used in **IMAC** (International **M**iniature **A**erobatic **C**lub) competition. The Ultimate biplane is included as is the Sukhoi SU-26, the Cap 232 and seven others.



Photo 18



Photo 19

More interesting, hopefully, to Sport Aviator readers is the second add-on. Library 2 features park flyers and trainers. The trainer 40 in photo 18 represents most of today's 40-size basic trainers. The Trainer 60 in photo 19 flies with the added momentum and slower control response times exhibited by the Hangar 9 Alpha 60 and the Great Planes HobbiStar 60. However, the Trainer 60, with its flat-bottom wing does have more lift than does the real world HobbiStar 60 which has a semi-symmetrical airfoil.



Photo 20



Photo 21

There is even an electric-powered park trainer (photo 20). Its gentle flight is a good place to start but its poor wind ability reminds you that such aircraft, in the real world, are not meant to fly well in winds over 8-10 mph. Other Park Flyers include an electric-powered biplane, the "Slow Bipe" (photo 21).

All the Park Flyers, and the electric trainer, are three-channel, using the rudder to turn and bank. Rudder control is on the right (aileron) stick but can be moved to the normal rudder stick for practice. Most of the Park flyers are tame, as in the real world but still fun to fly around, especially if the winds are set at maximum and flying in the fog.

I found the Dave Brown RCFS 2001 RC simulator to be fun and realistic. It does not require the most modern computer available. Flight is very realistic and the price is very attractive.

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