

# FlightLine

A Monthly Publication of Collins Model Aviators

January 2001

## In this issue: A review of Dave Brown Products' new RCFS 2001 flight simulator system



## Two of our members review this product on pages 3 and 4

### President's Column

By Dave Shema

Now that Milo has spoken, and the club membership has affirmed his choices, I thought you might like to know something about your new President. First, thanks for your votes.

As a kid, my allowance each month was immediately spent on a Monogram, Revell, or Aurora plastic

model airplane kit. Now, I'm one of those people who, no matter where I am, if I hear an airplane or helicopter flying overhead, stops, looks around to spot it, and takes a brief moment to watch it fly overhead.

In 1963, at the ripe old age of 9, I ventured into the world of gas-powered models when my brothers and I fired up my birthday present -- a brand spankin' new Cox P-51 Mustang. It leapt into the air with me at the other end of the dacron control lines, did a wingover, and crashed to a million pieces. I've been hooked ever since.

I learned to fly control line on a Baby Ringmaster, and then graduated to a Ringmaster Jr, powered by a Fox .15. Finally, graduated to the requisite Ringmaster, with an OS .35 for power. I built, flew, and crashed many a control liner, and even ventured into 1/2 A combat for awhile.

Free flight came next, with a scratch built rubber powered Midwest Gollywock stick and tissue model. I learned a lot about single edge razor blades, X-acto knives, and first aid. Elmer's glue, and Ambroid cement were the adhesives of choice.

One of my older brothers joined the Army right out of high school. After boot camp, and after learning to be a crew chief on UH-1's, he shipped off to Viet Nam. Before leaving the states, he sent a bunch of his stuff home for safekeeping. In it was an O.S. Pixie single channel tone transmitter, a super-regen receiver, and a compound escapement. Radio Control was in my future. Somehow, I also managed to get hold of a Controilaire Mule single channel tone

CMA Web Page Addresses:

<http://bbs.cacd.rockwell.com/data/clubs/cma/>

<http://www.cfm-resources.com/c/cma/>



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transmitter, and built several Kraft K3VK relayless super-regen receivers to go with it.

This assortment of stuff found its way into a Jetco Thermic 50 glider. I'm not sure how much real control my brother and I really had over that plane, but we certainly had fun until the rubber band for the escapement ran out of turns. We just hoped it had enough poop to get the escapement back to neutral one last time.

I graduated to modern digital proportional when I bought a two-channel Cannon radio, and a single Orbit PS-4 servo. This combination went into a Goldberg Skylane 42, with my trusty old Fox .15 control line engine up front. I learned to fly that single channel plane under the instruction of one of my EE instructors at Montana State University. That was 1972.

Somewhere around 1974 or 1975, my older brother bought a DuBro Whirlybird 505 helicopter. Strange looking beast. Made lots of noise, but it never flew. Undaunted, I bought an American RC Helicopters Revolution 40 helicopter in 1976. It never flew. Still undaunted, I bought a Schluter Heliboy. What a chopper. Success at last. It was followed by a Mini-Boy, Heli-Star, Superior, Champion, and GMP Cobra.

I've built and flown two-meter sailplanes – had a ball with an Airtronics Olympic II sailplane. Would love to build another one of those some day. The kit is still available, just need to spring the bucks to buy it. At the other end of the spectrum, I was utterly amazed when I got a three and a half minute flight out of a hand launched glider I had built.

I was secretary-treasurer of the Bozeman Air Tragedy Society for something like 12 years. Taught many people to fly during those years, as well. During that stint, I also was the newsletter editor – every month I did my best to put out the “Bullsheet”, using an old electric typewriter, and a mimeograph machine. I've been an AMA contest director since the early 1980's. Most of my early radios were Cannons, built from kits. I built a lot of ACE servos over the years, and still use the battery cyclor I designed and built back in 1978. A couple

of us EE types kept most of the Bozeman flyers in the air by fixing radios back then. There wasn't a whole lot to radios then. All you needed was a good oscilloscope, a supply of crystals, a source of solder-tabbed nicads, and a knack for being able to tune receiver front-ends with the ever present tuning wand. Those were the days!

I moved to Kansas City in 1984. Flew airplanes and helicopters every chance I got. As an instructor for KCRC, I continued to teach others to fly, as well. Airplanes and choppers. Probably went through three to four gallons of fuel a week – usually two each weekend. I was single, had no bills, and had all sorts of time on my hands. What a life! While in Kansas City, I was President of the RC Sport Flyers for a year.

I moved to Albuquerque in 1987, married, had kids, didn't fly nearly as often as I wished. A very, very ill wife, and two small kids overshadowed my urge to fly. Always had something ready to fly but rarely found the time.

Moved here in 1997. My bevy of aircraft includes an X-Cell 60, Concept 60, two Nexus 30, and one Concept 30 helicopter. For airplanes, I'm flying an old Midwest Aero Star, and have several kits in different stages of completion. A 1/5 Scale Top Flite Cessna 182, an old Top Flite P-51, a Bridi Kaos that I started building in 1984, and a 20-sized Dirty Birdy. I'm itching to start building the Goldberg Skylane 62 I bought on Ebay a year ago. I'd love to find and build another copy of that original Goldberg Skylane 42, and fly it as a rudder-only ship, with an OS .10 control line engine up front. I am fond of the 'old days' and the planes that went with them.

I'm a sport flyer, like fun flies, have participated in a couple of novice pattern events over the years, and love flying helicopters. I think this year I'll be able to get back in the air much more than I have been in the recent past, and look forward to doing this President thing one more time.

Dave Shema, CMA President →



## Dave Brown's RCFS 2001 Simulator Update

By Geoff Barrance

With Frank's help I have been able to get the recently released update for the new version of the Dave Brown RC simulator (\$35 from Tower hobbies). Here are a few observations that I've been able to make in the several hours that I've spent on it. I have been using it with the Real Flight controller, but I'm sure it will work just fine with the old (metal box) DB controller with the push buttons instead of switches. There is a setup screen for that option. You might need to read the on-disk users manual to get your computer to recognize the controller – I did.

Overall this is an entirely new program, and a huge improvement graphically over the old RCFS V. To install the update you need to have the old version on your hard drive, or have the original floppy for it in the floppy drive. It's not a huge program (around 40Mb I think), and once installed you don't need the CDROM in the drive.

Unfortunately my graphics card renders the props and rotor discs solid dark gray, instead of transparent, which significantly detracts from the illusion of reality. Also, when I exit the program I get an error message, which eventually results in having to reboot the computer. These could be specific problems of my machine (HP 800MHz PIII), but I don't get this with other programs, so it leaves me with a suspicion that the program may

have been rushed out in time for this Christmas. I'll be watching for a downloadable update from their web site.

Scenery is photo realistic, but not true 3D, other than the optional race "pylons" (just poles really, no lights on these) and limbo pole. In some ways this is better than distracting 3D backgrounds which you can unexpectedly crash into! It is possible to select on-screen display of various parameters, which is something Real Flight doesn't do (I think), and that can be useful. It's telling me I'm getting frame rates in the 40 to 50 per second range with the 800MHz PIII, so it should be fine with something quite a bit slower. There's a selectable overhead inset view too, which is a help.



Flying characteristics are interesting. Certainly there's a flavor of the old RCFS V about the way the planes fly. As before, it's possible to get into a flat spin with most of the planes, and so far I haven't managed to recover any of them (done that in reality too)! I can't hover any of the planes, at least not for more than a second or two, but with patience it is possible to slow them down and get them nose high for landing. If you get them too nose high they'll sink and need a lot of power to pull them out of it. The turbojet powered F-18 (nice sound!) is probably the most fun to explore the large speed range. I like to get it slowed right down so that it's hanging on the back of the drag curve, then bang the throttle full open and power up and out of it. Very realistic!



Helicopters seem to be much harder to fly than Real Flight, also similar to the old RCFS V, I feel. Harder is perhaps no bad thing for training. I can't easily detect ground effect (although I think it's there in some form), so it's difficult to hover at a stable height. I suspect if you can hover out a full tank of fuel (default 20 minutes!) on these, the real thing might not be too difficult!

Overall this is a very good effort, with maybe a rough edge or two that I expect they'll iron out shortly. It's nowhere near as impressive, nor with as many fancy options as Real Flight, but then it's nowhere near the price either. It's a huge jump up from the previous DB version, lots of fun to fly and a very good training aid.

Geoff Barrance →



## Where to get RCFS 2001?

You can order RCFS 2001 flight simulator directly from Dave Brown Products Web Page:

<http://www.dbproducts.com/>

The full program with Simstar controller box is listed as: RCFS-7001 RCFS2001 PROGRAM W/SIMSTAR \$139.95 with free shipping.

You can also order it through various other hobby outlets. Tower Hobbies (<http://www.towerhobbies.com>) has the same thing listed as: LXWL77 Dave Brown RCFS 2001 Simstar \$129.99 + \$4.99 shipping. You will need to consider shipping cost and availability in looking for the best bargain. →

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## Dave Brown RCFS 2001 Evaluation

By Frank Gutierrez

Geoff let me evaluate his copy of the new Dave Brown simulator and I was able to successfully use my home made controller. I expect any flight controller on the market or home made with conductive plastic potentiometers would work just fine. Just remember to uncheck the poling with interrupts in your windows joystick setup program.

I didn't have the video problem that Geoff reported. My computer is a home-made selection of components. My processor is a 400 MHz AMD K6-3 and an ATI Rage Fury Pro video card. Not the most expensive computer stuff but so far has worked great. My operating system is Windows 2000 and the simulator program works in it just fine. I set the graphics mode to use 3D rendering at 1024 x 756 resolution, which gives a super quality picture. Although not as good as RealFlight, it doesn't appear to need the processing power the RealFlight demands.

I would agree with Geoff about the flying characteristics of RCFS. The F-18 is also one of my favorite airplanes on this simulator and flying it flat out is nearly as good as our recently built SIG Wonder. I think the Wonder is a little quicker though. Flying the F-18 on the backside of the power curve with full back stabalator and



using throttle and rudder for control allows for a very high angle of attack slow flight. At this point the aircraft is using mainly thrust and angle of attack to keep it airborne. The plane will jitter up and down rapidly, which seems to be a flaw in the program. It's as if it doesn't know what to do when you reach airspeeds close to stall but not quite.

The aerobatic airplanes do flips and knife-edge flights, knife-edge loops, and just about anything else you can imagine. You can change the parameters of the model in any way you wish as well as some of the scenery features. The program doesn't have a hanger of models that compare to the old program but it does have an LT-40 that has real good trainer characteristics. Jay has successfully taken off, done a fly by and brought it back to a landing on the runway all in the same flight. Not bad for a 6 year old R/C'er. By the way he is awesome at video games. I quit playing against him a year ago.



Helicopters in my opinion are not any harder to fly on RCFS than on RealFlight although their flight characteristics are noticeably different. There is a sweet spot for hover but you still have to work the throttle to keep it in one place. I expect the ground effect software needs some work. RealFlight does a much better job at this. Over all I find RCFS helicopters easier than RealFlight and it will virtually fly hands off if the trims are set up correctly. I can do this in RealFlight as well but for shorter periods of time. It seems easier to nail my positioning in RCFS and I can throw the helicopter around with out losing control. Inverted flight is also fairly

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simple with this program and after a couple evenings of practice I was able to flip it on it's back to an inverted hover or just fly around upside down. I always try to see the ground at all times when I practice. This helps in learning orientation.

In summary I find it to be an excellent RC simulator and the choices for orientation of the runway is far better than RealFlight. I also like the fixed wing airplanes in Dave Brown over the RealFlight simulator. As far as helicopters go, I would pick RealFlight over Dave Brown. The DB simulator is certainly worth the price and an excellent choice for any R/C'er regardless of your experience level. Tower Hobbies has the best price for the DB simulator that I have seen.

Frank Gutierrez →

## Collins Clubs Get Public Web Page

<http://www.collinsclubs.com>

The Collins Woodworkers Guild has sponsored a web page for the Collins Clubs. The page includes a link to the new CMA public site <http://www.cfm-resources.com/c/cma/>

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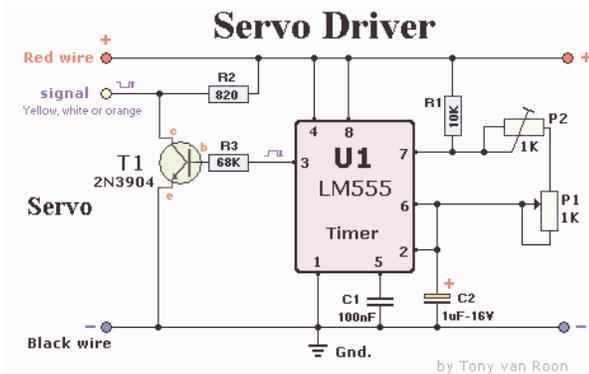


## Servo Tester

By Frank Gutierrez

This is another project that is on my list to do. Must wait till the other project are complete so don't anyone hold their breath. If anyone is interested in building one or more, here is a good place to start.

<http://www.uoguelph.ca/~antoon/gadgets/servo1.htm>



Frank G. →

## National Newsletter

### Glassing an Airplane for Strength and Lightness

by George Lumpkins

Most of an airplane's strength comes from the structure of the aircraft, for example, the ribs, main spars, formers, and sheeting on the wings and fuselage. However, what if this is not enough for your application?

When adding more structure to the inside will not solve your problems, maybe you should consider glassing the outside of your airplane. Glassing should be done to surfaces, not to bridge gaps like between ribs on a wing. Glassing consists of epoxy lathered onto fiberglass cloth.

The glassing I am referring to in this article is fiberglass cloth of any lightweight density and finishing epoxy of any make. Do not use regular epoxy as it is impossible to sand without balling or gumming up the sandpaper.

Epoxy glassing is a great way to add strength to all of the areas it is applied to. First you should place FlightLine

the glassing cloth over the area you intend to glass and cut it to shape with one to two inches to spare at all corners. This is just in case you don't place the cloth exactly the way you want it.

Next, mix up the epoxy resins for glassing. I mixed one-third hardener with one-third resin, and the last third with 91% pure rubbing alcohol. Pour some of the mixed resin onto to the area intended for glassing, and use a rubber squeegee to move it evenly around the whole surface. The wood will appear as if it is wet, but there should not be standing pools of epoxy.

Next place the fiberglass cloth onto the area where the resin is. Pour the remaining resin on until all of the white areas of the cloth have taken on a wet appearance. Allow this to dry for 10 hours or so before sanding or painting.

For anyone who has attempted to glass an airplane, you will quickly discover that you will get wrinkles or bubbles. If you try to push them out, the fabric tends to stretch and just makes matters worse.

When I glass anything, I use the flexible rubber squeegees. These work wonders for gently sliding the wrinkles to the sides.

Another suggestion, one that I use, is to take a Windex bottle (after using its contents and cleaning it) and fill it with rubbing alcohol. This will allow you to spray the alcohol onto your work evenly and it will delay the epoxy from curing immediately and thin it out a little.

After you're finished, you can use lightweight spackling putty to keep the weight down and fill in the small indentations left in the weaves of the cloth.

This is my two cents from my experiences from glassing on kits for strength. I personally have used all the techniques mentioned in this article.

from NOTAM  
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## Heads Up, CMA Activities

### January 2001

4-Jan 5-6 PM Meeting  
11-Jan 6-9 PM Build session  
19-Jan 5:00 PM Flightline deadline

**CMA voice bulletin board 295-8888**

### **Send your input for FlightLine to:**

James H. Doty  
MS 108-205 x5-2931  
[jhdoty@collins.rockwell.com](mailto:jhdoty@collins.rockwell.com)

Or at my home EMAIL

[jhdoty@home.com](mailto:jhdoty@home.com)

### **AMA events web page:**

<http://www.modelaircraft.org/Comp/Contest.htm>

### **For an AMA membership application:**

<http://modelaircraft.org/Mem/Memapp.htm>

### **Send your input for the CMA Web Page to:**

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