



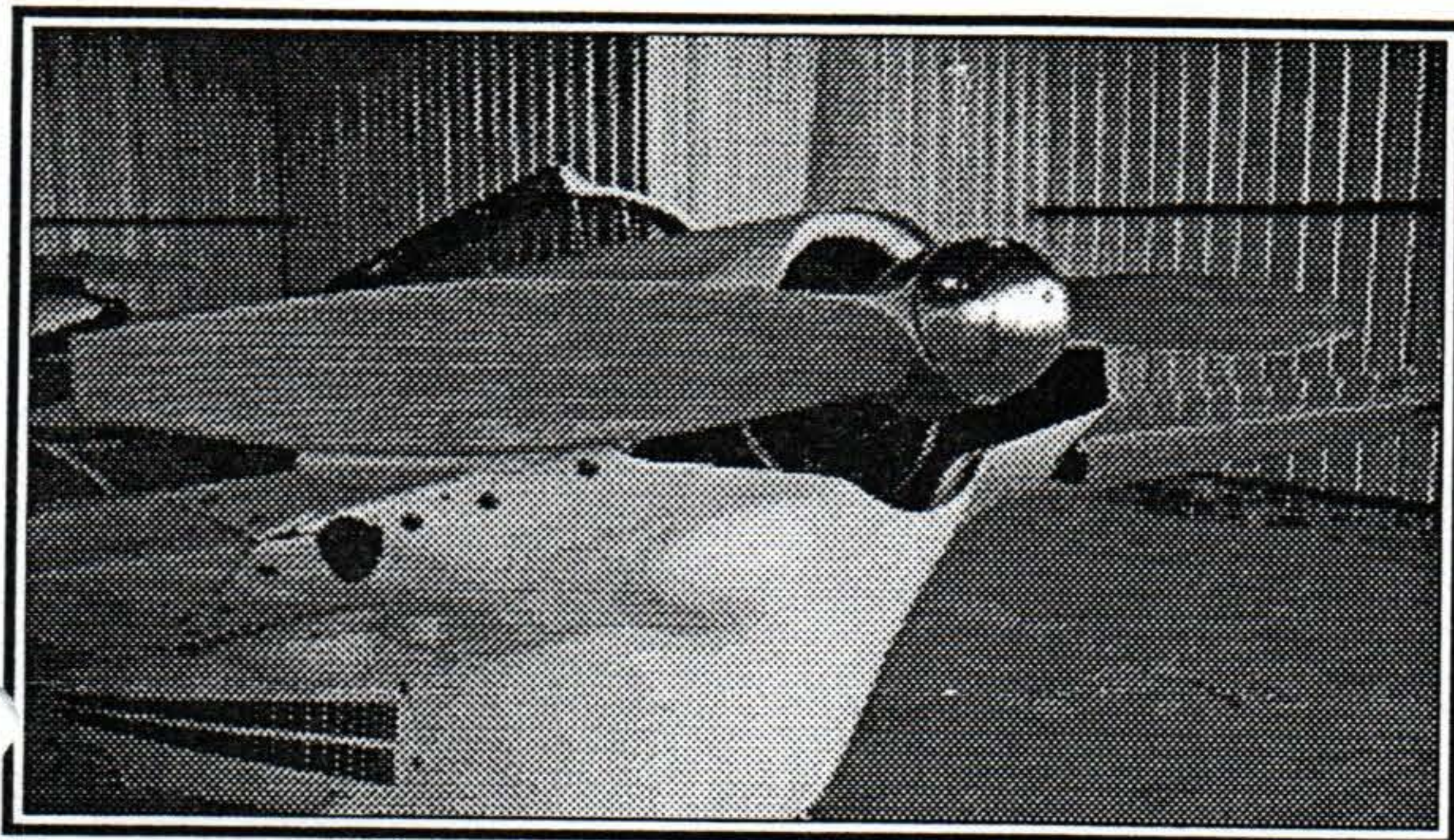
### "Slim-Fast" for your EZ

**Brent H. Van Arsdell (IL)** - Last year, enroute to Sun-n-Fun, I felt a funny vibration in my Long-EZ and then it smoothed out. After landing, I discovered that part of the spinner was gone. Fortunately it didn't hit a

three pounds.

The new spinner is removable for inspection and prop retorquing with just one screw. The spinner base goes over the crush plate but does not quite touch the wood. I had to add a couple of layers of black electrical tape around the crush plate to make it a tight fit.

If you don't have a spinner, or if yours is cracking, you might consider one of these. It's cheap, it's light, and it's simple, kind of like "Slim-Fast" for your airplane.



## Slim-Fast Spinner

winglet and I didn't hear any reports about aluminum gods raining down chunks of beer cans so I felt pretty lucky.

I immediately took the spinner off and put up with a year of, "When you gonna put a spinner on?" from other EZ pilots.

Now spinners don't make airplanes go any faster in the air, but on the ground they can make them look about 25 to 50 knots faster. Since I'm an economy minded guy, I settled on a spinner that looks about 25 knots faster. It's a six inch skull cap style spinner from Wicks that cost \$33 (part # PS-6) and weighs six ounces. The old spinner, from Brock, cost a couple hundred bucks and weighs

### Electric Landing Brake Part 3

*The following is excerpted from a letter by Mike Melvill in reference to an alternate ball drive actuator that he is running in his Long-EZ.*

**Mike Melvill (CA)** - Enclosed is the information on the Pittman actuator. Note that it has 4" of travel, which is what you need, but it does not have limit switches. It will only move the landing brake from closed to full open, but you have no way of knowing where it is! For that reason, I installed a yellow caution light in the top center of my instrument panel which lights up any time the brake is not fully closed.

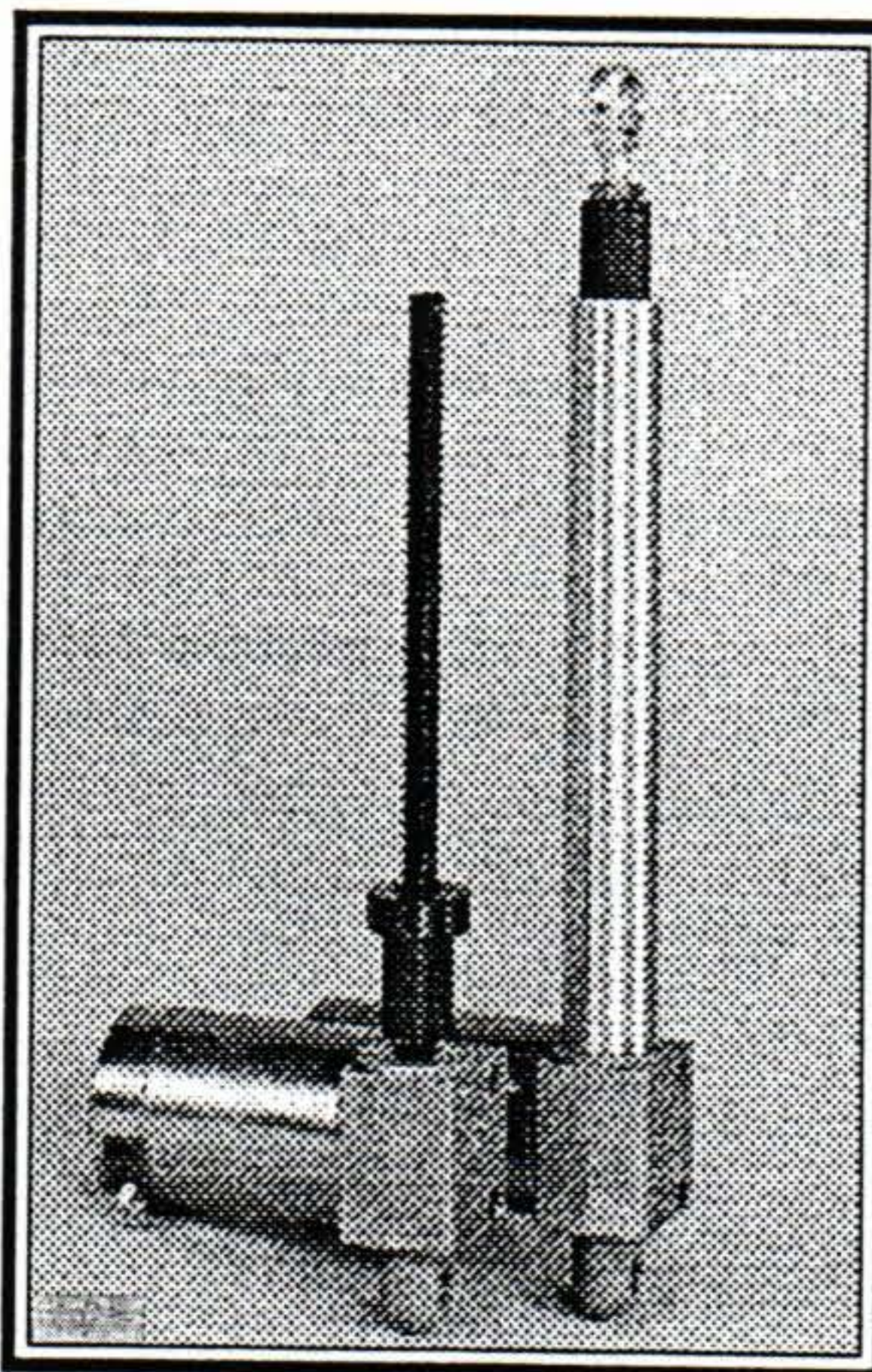
I feel this is **absolutely mandatory!** I

took off twice, myself, with the brake down! This is potentially disastrous, because the engine overheats in just a minute or two.

I am using ball drive actuator #85615 from Motion Systems Corporation. It is used to actuate the landing brake at 110 knots in Long-EZ N26MS. The actuator moves at about 1" per second with no load and takes about six seconds to move the 4" at 100 knots.

*Editor note: I called Bill Tyrrell of Motion Systems (201) 222-1800 to get more information on this 1.3 pound actuator. He advised that the units were available in custom lengths at the same price. It seems they would rather make the actuator to fit your system instead of you changing your system to match their unit. Bill stated the price was about \$200 depending upon quantity, etc.*

He also stated the rated power was 100 pounds but the stalling force was a **whopping 500 pounds!** You'd better be sure the travel is correct before you turn that thing on or it will pull your structure apart. At that power you will be able to extend the brake at a much higher speed than you can manually. It seems to me, inattention to extension airspeed could destroy the brake structure. Y'all be careful now!







## Electric Landing Brake

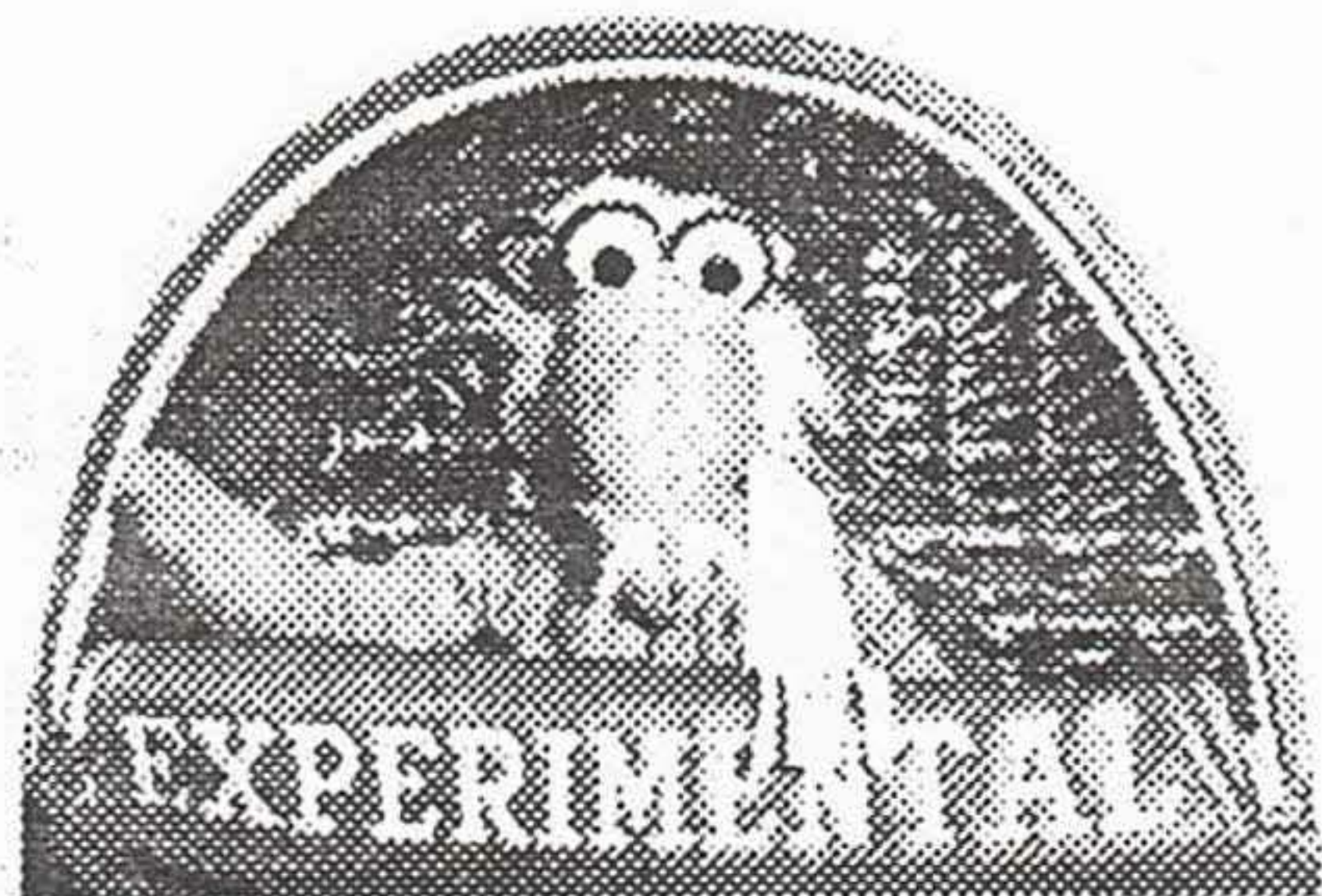
In the past couple months I've heard of several people who are putting in the electric speed brake actuator that Ken Miller contributed to the April issue.

I found it interesting to hear the before and after installation remarks from people. During installation Doug Shane wrote,

*"I'm currently installing an electric speedbrake actuator, and I'll drop a line to let you know how it works. The rationale for the installation goes like this: This should be great, the Velocity guys use it, it's the same stroke as the mechanical system, won't it be great to just flick a switch (on the throttle of course) and have drag for formation flying? However, now you have another electrical system to fail, radio interference to fight, a DPDT switch that won't fit in the throttle to find, console cutting to do, do I need an indicator light to tell if it's down now?, blah, blah, blah, ad infinitum. By the time I get it installed, it'll probably be as complicated and heavy as a B-2."*

Shortly after the installation was completed, I got a call from Norm Howell, who almost fell over his tongue, telling how great the final product was. It turned out that the weight change is negligible. The removal of the mechanical actuating mechanism about balances the addition of the wire, switch, electrical actuator, etc. Higher extension speeds are possible than with the manual system. You can extend the brake partially to help in formation flying or to slow a descent with power to prevent shock cooling. It sounds like there are a lot of good things

Those of you interested in learning more about this electric actuator (who knows maybe you want an electric adjustable head rest or wheel doors for your wheel pants) refer to the January 1990 CSA newsletter. See Cliff Cady's article on pages 6-10. His article gave all the numbers and a selection guide. The actuator weighs 1.45 pounds.



## 10 EZs to Guadalajara, Mexico

**David A. C. Orr** - For the past two years Tom Coughlin and Mark Bender have been connected with AVIATION WEEK at Guadalajara, Mexico. This time they arranged for 10 Rutan canard aircraft to travel down to support the museum with 3 airshows and donated rides for local people interested in flying in our 2 seat experimental aircraft.

The aircraft flew directly from southern California, 500 nm, to Guaymas for customs and lunch. The Mexican "FAA" sent us quickly through to customs to beat the tourist plane which was due to clog the customs office. Then, after a little bite, with the afternoon waning, we dropped in at Los Mochis, another 165 nm. The Mexican "FAA" at Guaymas called ahead for transportation and a motel for 18 people. The next day we all flew out in formations of 2 for the 225 nm trip to Guadalajara. Enroute, one Long-EZ and escort dropped into Mazatlan when a chunk blew out of the exhaust pipe. A quick drive into Villa Union resulted in some rough and ready welding and a turn around in two hours (costing \$10 and one



## Electric Landing Brake Part 2

*Editor note: The following is from a letter sent after Doug Shane completed his installation.*

I just finished the electric actuator installation and have the following comments.

I got the 4 inch stroke version of the actuator, part number S12-17A8-04. It has book load capability of 75 lbs while operating, and 250 lbs while not operating. Upon perusing the speedbrake plans I discovered the 4 inch dimension is virtually the same as the mechanical system.

I removed the back breaker LB-9 thing and proceeded to remove the rest of the landing brake actuation system. I found that if you pull the bolt out of the landing brake handle pivot point and unscrew and remove the "knob" portion, that the handle part and cable, turn buckle and other stuff come right out through the hole in the front seat bulkhead. In other words, the removal of the stuff that worked is a lunch hour job with time left for lunch.

I thought a lot about whether I was simply replacing an organic back breaker with a high tech electrical one. I think that by embedding a solid glass insert (about .25" thick) in the front seat bulkhead to support the upper brackets and, importantly, making composite upper brackets (so the upper pivot bolt will tear through the brackets on overload, rather than driving through your spine), that it's probably at least a wash, if not better. Having said all that, I made my brackets from aluminum as an expedient (shorter cure cycle) because I really wasn't sure how it would all work. Any day now, I'll laminate up some fiberglass ones.

The solid glass insert was dremeled into the bulkhead and floxed in from the front, with a 3 ply BID repair over the beveled foam and onto the origi-

nal structure. Then the upper brackets were just bolted through with AN-3s (pointy ends aft).

One small problem, I think, with this particular actuator is that it doesn't have rod ends or other means of adjustment. From a cost standpoint, it's great, but you really have to do your drilling-in correctly or ensure that the speedbrake snubs up enough. I tried running it out (extended) just a little to do the drilling-in, hoping that it would result in a tight fit when fully closed. Somehow it all worked (there is a little axial slop in the actuator). But, you should probably check your horoscope the day you attach the thing, just in case.

For the lower attachment to the speedbrake itself, I cleverly (or perhaps *sleazily*) was able to turn the LB18s around to allow for the wider actuator. The actuation point (and structure) remain the same.

Due to peer pressure, the switch controlling this rig had to go on the throttle. No choice. None. Of course it had to be a double pole, double throw switch (or relay....). You know it's hard to find a small, good quality switch that looks like it came from an F-16 at Radio Shack. As a result, I have a kinda crummy one, but it has the right basic features. It's small, has center off, and is not spring loaded either way.

I chose the non spring loaded switch because I wasn't willing to install a light to advise that the brake was down. I thought having the switch stay where you moved it last would be some kind of a reminder. Probably a good habit to also develop, is to push the speedbrake switch forward when pushing the throttle forward. We all know most EZs have enough power to fly away with the brake extended. But Ken's concerns about the max structural capability of the brake are extremely well taken. A dynamic pilot-in-the-loop test would be expensive and stressful.

The most important answer? Yes, I

like it. Norm Howell and I did the initial envelope expansions and the system operates acceptably out to about 120 KCAS. At this speed, however, the motor is noticeably loaded, and so I will observe a 110 KIAS limit for full extension. Cycle times are nominally 6 seconds down and 5 seconds up. My opinion is that this is acceptable for my operations.

There is no electrical noise, and the motor is barely audible at low power settings. I have subsequently fabricated a cover for the actuator, so the backseat floor is cleaner than it used to be (and no more screen door springs).

The final evaluations will center on opening the brake partially at higher speeds. This should be useful (not to mention cool) for formation flying.



### Reflections on Sun-N-Fun "92"

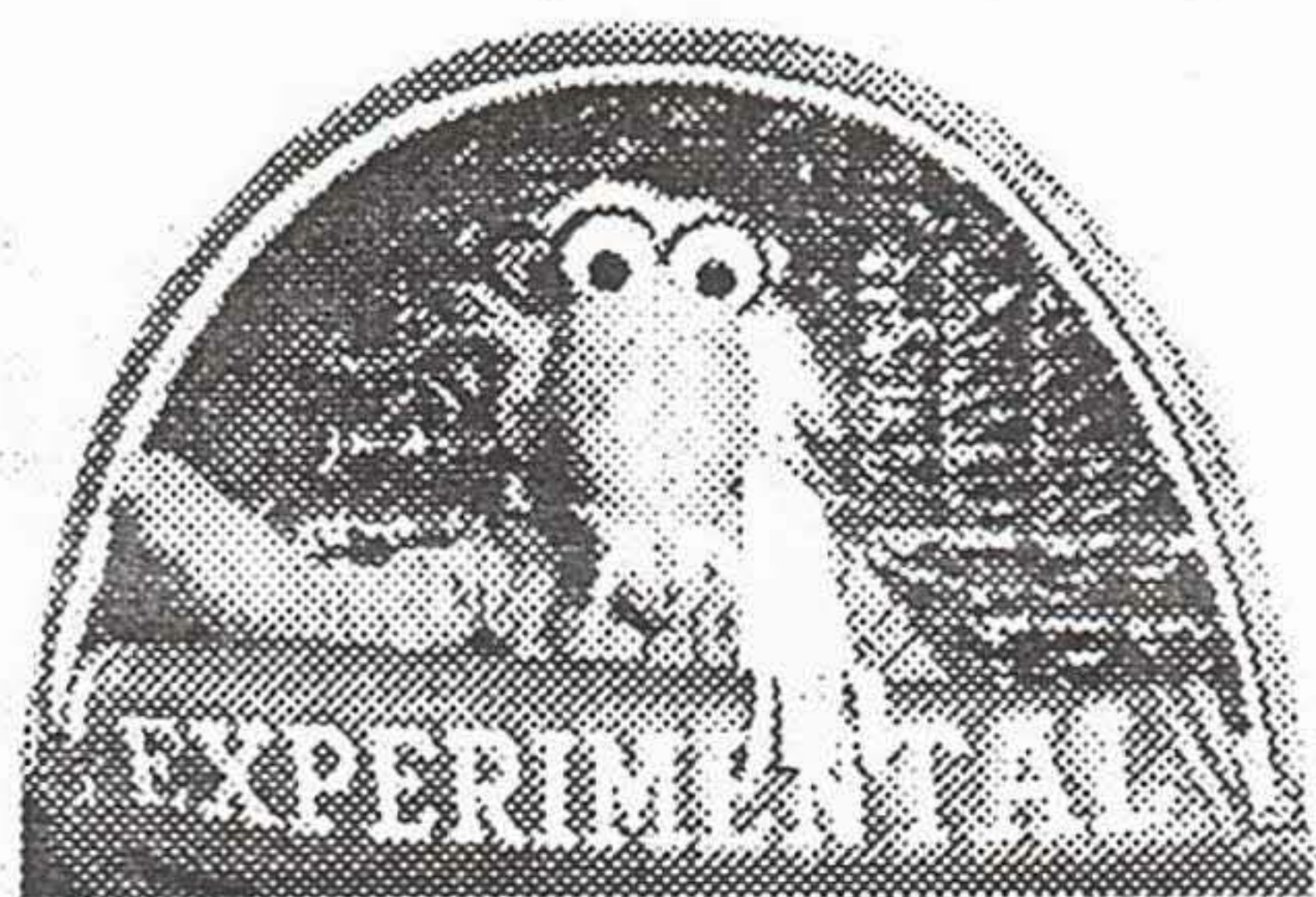
*Buzz Talbot* - Our Long-EZ has been flying for 7 years now and I've noticed we don't fly it as much as we did when the EZ was new. My partner on the project hadn't flown it in 5 years and we had begun to drift apart during that time. He started to talk about getting out of the partnership so I decided to "work on the relationship" just like a marriage. What we needed was an aviation marriage encounter retreat to put the romance back into the partnership. In short, we needed to spice things up a bit.

The first effort was a "male bonding", guys only, trip to the Reno Air Races to see the Pond Racer blow the doors off the Mustangs. Although the Pond Racer went down in flames, (literally), we came home with sun burns, winnings at the roulette



going for this mod.

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Long-EZ pin.) We experimentals can actually work on our own planes, even in Mexico.

During the week in Guadalajara, we flew 10 little 2 seaters like crazy giving rides, checking out the city, the surrounding area, and beautiful Chapala on Lake Chapala. The Guadalajara tower was overloaded with little gnats coming at them from all directions. It is strange to see 10 Long-EZ types taxiing between the jumbos. All controllers were polite as Mark and the museum staff fully explained our mission in support of the Guadalajara Air and Space Museum. We went to the museum after our first air show and were mobbed by adults and kids. It made us feel like informal Air Force Thunderbirds in our matching flight suits.

We spent Air Force Academy graduation day on the Mexican Air Force training base, called Zapopan. It took Mark and the museum staff days to coordinate, but it was another great "hands across the border" event. The Air Force returned the favor by giving us all a ride in their helicopters. Another day was spent flying over to Puerto Vallarta. We gave a ride to the mayor, skipped over to Tepic to meet the governor of the province who, in greeting us, explained that it was Tepic based explorers who first discovered California for Spain. The "Tepic New" airport now has gasoline which the governor (of Nayarit?) donated in exchange for our air show. He lent us his Greyhound coach to travel into town for the night. It sure is strange to not be able to fly after sunset.

The trip back from Guadalajara by way of Guaymas and Brownfield was uneventful for all. Part of the group diverted into Guaymas for an extra day to wait out the southern California rains.

**ROUGH  
RIVER  
OCTOBER 2-4**