

CANARD PUSHER

APRIL 1998

RUTAN AIRCRAFT FACTORY

VOL.13, ISSUE 2, NO. 92

Burt improves after heart attack

by Tonya Rutan



We were at home asleep when Burt woke in the wee hours of April 6 with a strange sensation in his chest. It was not painful, simply a tightening of the chest and a numbness in the right arm.

He thought he had slept on his arm wrong, so he walked around a bit, hoping the numbness would go away. It didn't, and when he awakened me a half-hour later we decided to drive to the local hospital to have it checked out.

True to form, before we drove away Burt packed a briefcase with a stack of books just in case we had a long boring wait at the hospital. After all, we reasoned, this was probably just a bad case of indigestion. Burt was working 12-hour days at Scaled Composites; proper meals and exercise were always replaced by continuous week-end design work; and he had just arrived home from back-to-back overseas trips to Egypt (to investigate some theories on how the pyramids were built) and Taiwan (business, another new design).

Contrary to expectations, we did not have long to wait at the hospital. Emergency doctors quickly confirmed that Burt's heartbeat was a bit irregular, and before you could blink twice he was admitted to the Intensive Care Unit.



Blood tests verified that Burt had suffered a honest-to-gosh heart attack, despite the fact that he felt almost no pain.

On April 8 Cardiologist Dr. Kumar performed an angiogram on Burt, found the offending blockage, and inserted a stint, a tiny titanium spring coil, into the

blocked artery to permanently hold it open. Burt, who watched the surgery on a x-ray television screen while laying on the operation table, later described the whole procedure to me as nothing more than a "plumbing" problem.



While Burt was in the hospital being re-plumbed, friends and family began to help me reengineer our fast-paced lifestyle. We have a whole new way of eating — lots of grains, fruits and vegetables, some fish and only a palm-sized portion of red meat once a week. Burt's former lunch of six fast-food tacos and a Cappachino shake is a thing of the past. Butter, cookies and canned foods with high sodium have been tossed out. Ground round has been replaced with veggieburgers, and non-fat sorbet stocks the fridge instead of ice cream.

Burt now exercises twice every day, eats all the proper portions of fruits and vegetables, and has even cut back his office hours (although he continues his aircraft design work at home. After all, that's all fun, no stress). His cholesterol has dropped from 230 to 209 in the last three weeks — a great improvement, according to the Doc — and we expect it to drop it to even lower levels in the future as we continue this new life-long plan.



Burt and I want to thank all our pals who called, wrote, faxed and emailed their prayers for a speedy recovery. We received a wake-up call on that morning of April 6, and it was *not* a hotel operator, but the Big Guy in the Sky on the line.

Thanks to you, I think He listened.

BRIEFS

John Denver airplane crash — We know for a fact that investigators are working towards a conclusion on the accident that killed John Denver. Raf will print a copy of the NTSB report in the CP when it is released.

Recommendation from Dick Rutan — For anyone who operates an air-cooled aircraft engine, a subscription to the TBO Advisor is highly recommended. Kas Thomas, the Editor and Publisher, provides an unbiased, in-depth look at the aviation industry. He reviews and reports on "real" airplane concerns - overhaul, operation, AD's, who to deal with (and who not to deal with), and more. His guidance will save you time and could save you money. TBO Advisor is a wealth of information, and although I'm not a big additive fan, Thomas' reviews on oil additives has led me to continue to use AVBlend.

Check out the web page
<http://home.earthlink.net/~tbo>
or write
TBO Advisor
P.O. Box 477
Wilton, CT 06897
or call
203-834-0330 voice

It is my opinion that if you run a Lycoming/Continental this subscription should be part of your library. *Dick Rutan*

Status of RTW Balloon Project — Dick Rutan and Dave Melton are eight months away from another attempt to fly a balloon around the world. The new capsule's basic carbon structure is rapidly progressing at Scaled Composites, Inc., and delivery to the new company, World Quest (805) 824-1021, is expected soon. Systems will be installed at the World Quest Hangar on Mojave Airport, and a mission ready capsule will be unveiled by Christmas. The launch date for this project is January 4, 1999.

The sponsors of the Global Hilton (Pepsi-Cola, Hilton Hotels and Mr. Barron Hilton individually) have all returned and have contributed to support the new project, but the primary sponsorship is still available (\$1Million). Whoever chooses to fill that position will receive project naming rights. Stay tuned... *Kelly Hall*

RAF HOURS: Rutan Aircraft is officially open every Wednesday. Please call between 10 am - 2 pm (805) 824-2645 and give your name, serial number and nature of the problem. If you are not in an emergency situation, we ask that you write to Mike.

Note — Sometimes you can catch Tonya at RAF Monday thru Friday. She is in and out. Try and try again.

When writing to RAF, send along a stamped, self addressed envelope, if you have builder's questions that need to be answered. Please put your name and address on the back of any photos you send.



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One hour north of Mombasa

the weather turned very bad again and would remain so for the next three hours. Yet again this hadn't been in the forecast. Over the flat semi-desert to the east of Nairobi it rained very hard and I could see flooded villages in the middle of the normally very dry countryside. Over the highlands of Ethiopia there were thunderstorms everywhere, which didn't make my task any easier. Past Addis Ababa the weather changed for the better and I finally landed after more than 10 hours flying at Asmara Intl./Eritrea.

Unfortunately I had used quite a bit more fuel than I'd calculated due to the bad weather so I had no choice but to go and buy three canisters and 60 liters of normal car fuel as there was absolutely no Avgas available. Luckily the engine worked with the lower quality fuel as I had to fly a 40-minute detour over Jeddah on course for Egypt, during which time I had to contend with a steady headwind of over 40 knots. Arriving at Luxor I was greeted by a sandstorm which significantly reduced visibility, and I handed with reserves, which just covered my alternate Abu Simbel.

EXPECT THE UNEXPECTED!

The next morning, I attempted to start the engine but with little success. By calling some knowledgeable friends in Switzerland, I started to check one system after the other until it was clear that there was something wrong with my new ignition system. It had been installed on this flight to gain experience on a long-range flight under difficult climatic conditions.

Early Monday morning, ZIMEX-Aviation in Switzerland sent out two mechanics to Luxor with spare parts on behalf of UNISON Industries. On Tuesday the mechanics removed the LASAR system and replaced it with two standard Slick magnetos to enable me to complete my trip back to Switzerland. The mechanics did a first-class job and by early afternoon I was able to depart on course to Heraklion/Greece. The support of both companies was outstanding and the help from Mr. Francesco Manfrin of ZIMEX-Aviation and Mr. Otto Oppliger of UNISON-Industries was far better than I would have expected, especially on a weekend.

The complete LASAR system was returned to UNISON for inspection and testing to determine the cause of the problem encountered in Luxor.

During the course of the investigations it was found that a fault had developed with the speed sensor in the left-hand magneto which had been correctly interpreted by the controller. All other components of the system checked out perfectly. UNISON has already taken the necessary action to ensure this problem will not occur in the future.

Unfortunately, as on the way down, it was not possible to follow the Nile Valley to exit Egypt overhead Alexandria. I was again forced to fly over the desert for several hours and there was so much headwind that I seemed to practically stand still in the air. The Mediterranean was stormy and shortly

after passing the coastline I was informed by air traffic control that Heraklion was closed due to wind. The only possibility I had was to divert to Alexandria. The first approach ended in a go-around as the crosswind was too strong (according to the tower 15-20 knots, but the Lufhansa A-320 which landed just in front of me measured it at 30 knots on INS during the flare). For the second approach, Alexandria approved a runway which had a little less crosswind.

After the usual Egyptian problems (offered handling for US\$ 300!!, a landing fee of US\$ 98 and a waiting time of 90 minutes before I got my passport back), I finally found a taxi which took me to my hotel.

The next morning I discovered that there was no Avgas available at Alexandria. I was forced to take-off from the runway with the strongest crosswinds and because of the Egyptian regulations regarding minimum flight levels I had the pleasure of flying several hours at FL105 with a 50-knot headwind and temperatures of around -8° C. Eventually I made it to Bari/Italy where I again had to wait for fuel for some 90 minutes before being able to depart for Switzerland at maximum speed.

The landing at my home airfield Grenchen was twelve minutes before sunset. I was happy to have completed a very demanding trip safe and sound.

What remains from my trip, are tremendous recollections of a diverse, vast and most fascinating continent with numerous, memorable daily events and views which could only have been encountered in a small plane.

And, in Switzerland, as in South Africa, I was able to revive the memory of a great man, an aviator who opened up a whole continent to air travel on scale he would never have imagined.

A Dream of Africa

*Final report of a memorable journey
March 18 - April 9, 1997*

by
Hans Georg Schmid

The propellers of the Dornier Merkur CH-171 and the Long-EZ HB-YCT were mounted for permanent public display at the international airport of Cape Town on May 27, 1997.



This memorable journey is dedicated to my wife Sibylle, my two sons Alexander and Jean-Daniel, as well as to all friends, helpers and sponsors, without their generous assistance a happy conclusion would not have been possible.

- AEROTEC AG, 2540 Grenchen, Switzerland
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HG is preparing for the historic flight's second part — across the South Atlantic and around South America on the trail of Mermoz and Pluschow.

You can follow his progress by emailing HG at hgschmid@bluewin.ch or fax +41 56 621 98 42.

Accidents and incidents

With a heavy heart, we at RAF report the following accident.

NTSB Identification: NYC98LA047

Accident occurred DEC-20-97 at WEST MILFORD, NJ

Aircraft: Cady LONG-EZ, registration: N18CC

Injuries: 1 Fatal, 1 Serious.

On December 20, 1997, about 1130 eastern standard time, an experimental, home-built Long-EZ, N18CC, was substantially damaged while on approach to land at Greenwood Lake Airport, West Milford, New Jersey. The certificated private pilot was seriously injured, and the passenger was fatally injured. Visual meteorological conditions prevailed for the personal flight which originated from Farmingdale Airport, Farmingdale, New York, about 1030. No flight plan had been filed for the flight which was conducted under 14 CFR Part 91.

According to an inspector from the Federal Aviation Administration (FAA), the airplane was observed to enter a left hand traffic pattern for runway 6 at Greenwood Lake. When informed on the radio that the pattern for runway 6 was a right handed pattern, the airplane was observed to cross over at mid-field, and enter a right downwind for the runway. While the airplane was on downwind, witnesses heard a "pop" from the airplane. A witness reported that he could not hear the airplane engine as the airplane was on final approach. The airplane struck rising terrain below the level of the runway, about 60 feet prior to the approach end of runway 6.

Initial examination of the airplane by inspectors from the FAA revealed that two blades on the three bladed-propeller were not damaged. Fuel was present in the carburetor, and both wing tanks. The air intake inlet for the carburetor heat was found to be pointed opposite to the direction of flight.

According to an FAA inspector, and FAA records, the airplane had been built in 1986. The pilot/owner purchased the airplane and registered it on November 7, 1997. Following purchase, the owner had the airplane modified by installing a different propeller, the installation of higher compression pistons, and replacement of the right magneto with an electronic ignition system. The left magneto was retained and generated spark by rotation. The electronic ignition system required an

external electric source to operate. The aircraft battery was damaged during the accident and was not available for testing. Attempts at starting the engine using the left magneto were unsuccessful.

Further investigation revealed that spark was available from the left magneto; however, the ignition harness was only allowing for intermittent spark. When an external electric source was used to power the right side electronic ignition, the engine was started and ran successfully.

An airport 15 nautical miles south reported visibility of 8 statute miles, temperature 46 degrees Fahrenheit, and Dewpoint 36 degrees Fahrenheit. Additionally, witnesses at the airport reported that light mist was in the air. According to FAA records, the pilot had in excess of 150 hours. ●



To report accidents and incidents

Call RAF
(805) 824-2645

Fax RAF
(805) 824-4174
(805) 824-3880

Write RAF
1654 Flightline
Mojave, Ca 93501

Email RAF
raf@hughes.net

Short, hard landing breaks gear

by Mark Shinnick

LongEZ N132EZ, Mojave, California

December 28, 1997

This incident concluded a first check out flight for a pilot in a co-owned LEZ.

After a series of competent and smoothly demonstrated high and low-speed steep turns and power-off stalls at 6000-feet the pilots established the aircraft on a 2-mile final for Mojave runway 08 at 90 kts with drag brake deployed and gear down.

From my position in the rear I could clearly see indicated airspeed, manifold pressure, and I had both flight controls and throttle available for my use. Altitude and VSI cannot be seen from the rear.

One mile final, at 90, I called for a bit more altitude and to hold 90. I reported 1/2 mile final. We had slightly climbed, then flattened-out to intercept the VASI glide path and were at 90, 1/4 mile.

From the rear seat in a LongEZ, everything about the scene looked OK . . . a bit weird, as usual, compared to the front seat. Nose angle looked OK, I saw the VASI, airspeed steady at 90 . . . then suddenly an instant drop to around 50.

"What? This shouldn't be happening," I thought.

It was an instant needle drop, just as a tach drops at engine shut down. The airplane immediately pitched down about 60 degrees and banked sharply about 20 degrees to the left.

The pilot had the airplane and I did not interfere. He had done a good job earlier, he seemed to be doing OK with the situation.

Certainly I did not feel sufficient power from the engine to

do the job quickly enough. This airplane, with its 0-200, just doesn't have the juice to be counted-upon like that.

Altitude was being bargained for airspeed.

An impact of some sort seemed quickly, more and more probable because I didn't get the sense that there was much air over the airframe; this felt just like the dropping into less relative wind on a strong downwind portion of a turn-about a point . . . that sinking feeling. Now, if we just had enough lift to pull out of most of this descent . . . at about 90 AGL we started pulling out. A bit late, but it worked for me!

Most of the vertical descent had been successfully arrested when we pancaked-in short of the runway. The gear broke away, the craft slid, and we walked away.

The basic airframe and flying surfaces look OK, the nose and main gear, prop, aft belly, lower cowl and lower winglets took all the apparent damages.

A local pilot mentioned afterwards that she had earlier heard some pilots speaking of wind sheers today.

At 3 pm I took the pilot to debrief at Denny's Restaurant. He told me that he hadn't eaten anything yet today.

Pilot also told me that his first reflex response to the nose dropping was to push his right hand forward, as though he were applying power to his last familiar aircraft. This may explain to me why our pull-out was a bit delayed; I can't be personally sure it made any practical difference in the outcome. ●

RAF CD-ROM Encyclopedia!!

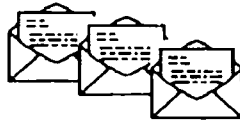
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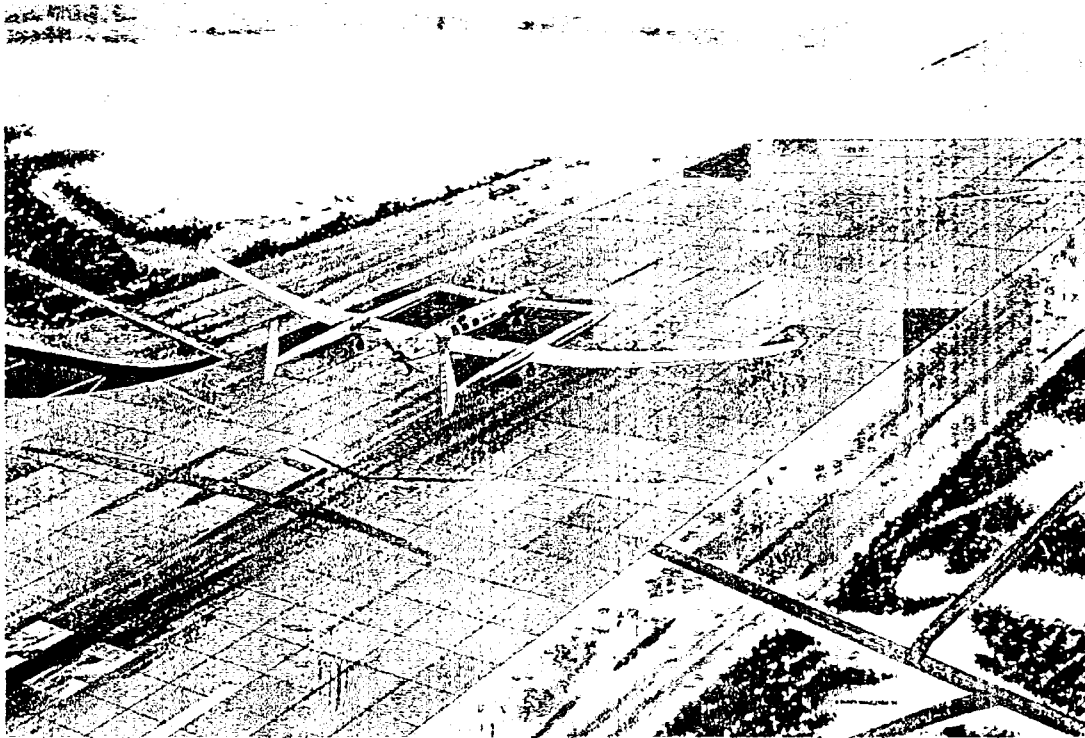
Reader Mail



Dear RAF:

In CP 91, p.7 you had a letter from R.Johnson regarding his trouble with a Long Ez engine mount. I too have the same mount. After about 350 hours, I changed to a 0290-D2 using the same mount and now have over 700 hours on the plane and mount. I removed the cowling yesterday and carefully examined the mount with particular attention to the weep hole areas. I'm happy to report there is no evidence of failure on my plane, despite changing to a heavier, more powerful engine.

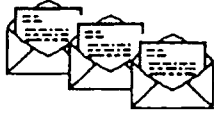
One additional note. During construction of N82TJ, I had to have the mount modified to accommodate the fuel pump. During the change the mount was deformed and had to be redone with special heat treating, resulting in a delay of it's return to me, but it has given me no problems at all. This change was done by Brock with no extra charge. To date I have had no problems with any of the component parts of my bird. Thanks again for a good design and excellent builder support. Sincerely yours, **Jacob O. Bach**
Carbondale, Il.
82TJ



FREE POSTERS! 26,366 Miles To Go

With a contribution of \$10.00 or more to the Dick Rutan Scholarship Fund, we'll send you this handsome 22"x31" print and Dick will even autograph it for you!. Aviation artist Rainer Hanxleden captures the moment of Voyager's take off on the world flight, with wings heavily laden, struggling to begin an odyssey that would land her (still unchallenged) in the history books forever. Titled appropriately 26,366 Miles To Go. To receive your free print, please send your check or money order for \$10.00 or more to: **The Dick Rutan Scholarship Fund - Post Office Box 359 - Mojave, CA 93502.**

Reader Mail



I wish I could include copies of all the letters, faxes and emails that Burt received after he suffered a heart attack on April 6. Your concern was much appreciated. I thought that a letter from Dr. Sidney Tolchin of La Mesa, California eloquently expressed what you all had to say, so I will reprint his letter here with a note of thanks to you all. — Tonya

April 12, 1998

Dear Burt,

We, in the Southern California EZ squadron area, were sorry to hear about your recent medical problems. We certainly wish you the best for speedy recovery and a return to a less stressful lifestyle.

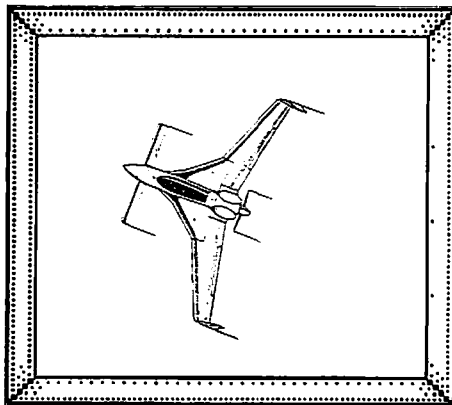
Burt, it is very difficult to put into words the feelings that your most recent episode have brought out in most of us. So often, people live and are gone before those that have been dependent upon them have an opportunity to express their thanks. So many of us who have been the grateful recipients of your motivation, commitment and genius think of you often when enjoying the fruits of our labor and your skills.

You cannot imagine the debt we who fly in the creations you designed owe to you. The confidence we have in our machines, the elation of defying the chains of gravity, the arenas of opportunity in travel and experience that we all share must be attributed, in large part, to your influence in our lives.

The broad smiles of our passengers and the many stories they and we are able to repeat are indelible in our memories. I can recall so clearly the smile

and comments of Georgi Grechko, a Russian cosmonaut, who flew with me in my Long-EZ several years ago when he visited San Diego.

“Who was the remarkable individual who brought about the existence of this marvel of an aircraft?” He wanted to take it home with him. He might just as well have requested both of my arms.



Well outside of the liability matters, your concern about our well-being and safety has been noted time and again. Your attention to detail, your wish to expand our environments, your innovations and style have succeeded in promoting a family of general aviation enthusiasts whose numbers and advocacy increase daily.

Those of us who believe in God pray for your speedy recovery. Those of us who do not, offer their best wishes. All of us look forward to your next steps and rapid rehabilitation.

**With very best regards,
Sincerely yours,
Sid Tolchin**

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or

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Spin-On Oil Filter Adapter for Lycomings

B & C Specialty Products' latest product is the neatest idea I have seen in a long time. It is a 90-degree, spin-on oil filter adapter for Lycoming engines. It is beautifully made by CNC milling out of a solid aluminum billet and bolts onto the accessory case in place of your oil screen housing or AC spin on filter adaptor. It fits perfectly, does not interfere with the magnetos, the vacuum pump or even the mechanical tachometer drive. It also has plenty of clearance on your engine mount and firewall, important considerations when you operate an EZ!

I installed one on N26MS and now have a full flow, spin on champion oil filter, with no high pressure hoses to a remote mounted filter which could leak. It comes with everything you need to install it: a new gasket, new aluminum washer for the vernatherm, and new copper washer for the oil temperature sensor. They even send a small container of the proper sealant for the gaskets. Of course it comes with new Lycoming bolts to mount it.

It is fairly expensive at \$395 but is available to EZ flyers until the end of 1996 for \$350. I am extremely pleased with mine and I heartily recommend it for anyone running a Lycoming engine on an EZ. A fuel flow spin-on filter allows 50 hours between oil changes and prolongs the life of your engine.

Give B&C a call at (316) 283-8662 or fax (316) 283-8000. You'll be glad you did! *Mike*

RAF Recommended Suppliers

These suppliers are still the only authorized RAF dealers for all your various aircraft materials and components.

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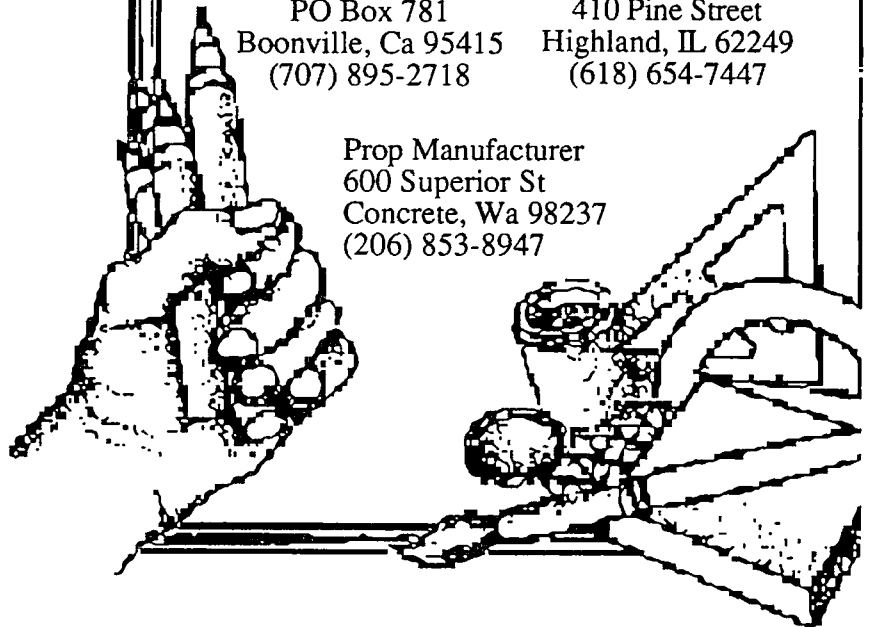
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VariEze builder/flyer Bill Butters has started a company to develop a full range of buried antennas. These are normally supplied with a BNC connector built into the actual antenna, but can be supplied without connectors to include enough length of co-ax cable to facilitate easy installation with minimum weight and bulk.

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Advanced Aircraft Electronics, PO Box 4111, Florissant, MO

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Contact Michael Dilley or Larry Lombard
(both former RAF employees
and EZ builders and flyers)
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Orders are filled by postmark date.
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We've negotiated a 40% discount with Viking Freight.
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*Items must be shipped by truck.

Nose Gear Ratchets

I have agreed, effective October 1, to take on the job of producing the nose gear ratchets that have been supplied by Dr. Curtis Smith. The job kind of overwhelmed him, and I am hoping that it does not do the same to us! I have orders for around 25 outstanding right now and am tooling up to do an initial run of 100. Price has, of course, gone up. The cost of materials and labor always does. I will be offering the units built exactly to his original specifications. I can't improve on a perfect design! I will, however, be offering the units in two finishes. The standard unit, part number 44807, and a chrome finished version, part number 44812. These are also the Sears part numbers for the two finishes of the 1/4 inch ratchet drives. Each ratchet includes installation hardware and instructions. Prices are as follows:

44807 Ratchet	\$49.95
44812 Chrome finish ratchet	59.95
Shipping & Handling	5.00

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Burt and Tonya hope to return to Egypt soon to confirm Burt's engineering theories on how the pyramids were really built.

Left: What Tonya was doing while Burt spent 3 hours inside the Great Pyramid inspecting stone blocks.

Cairo, February 1998

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