

CANARD PUSHER

APRIL 2001

RUTAN AIRCRAFT FACTORY

VOL 17 ISSUE 2 NO. 104

On my maiden flight in my newly certified VariEze I experienced an in-flight "shudder" and perhaps a little bit more. After exhaustive checking and taxi tests the following happened: Got airborne right as I expected (after many high-speed taxi to rotation tests) and started the climb-out. Everything was in the green and my VariEze was flying and handling well as I expected. Started a left crosswind and all of sudden the plane rolled hard into the turn. In what seemed like a millisecond I was nearly inverted less than 300 feet off the ground and it took both hands to roll back right and full right rudder. As it rolled back level I felt a shudder???

Past training and thousands of hours paid big time, as all I thought about was "FLY THE AIRPLANE". Once level I dared not take both hands off the stick since it felt like it wanted to enter the left roll again but I had to turn to the left downwind. With the knowledge of what happened the first time I entered the left turn to downwind very gingerly. She came around hard once again but this time with me having more control. As it rolled level for the second time I felt a little shudder.

I had no opportunity to adjust my seat position from the initial roll experience and found myself sitting like a low rider but too terrified to let go of the stick. I was now on downwind I managed to look at the airspeed indicator and altimeter. I was turning 160kts at 900feet agl. Since I dared not take both hands off the stick to this point I had not adjusted the throttle from 100% power. I glanced over my left shoulder and saw the approach end of my landing runway whizzing by. I looked straight

ahead at a lot of Sierra Cement which was fast approaching (I live in a valley with mountains ringing the area exceeding 10000ft and the airport is at 5900ft). I very quickly reached over and closed the throttle (gear was never retracted) and gently rolled into a 180 degree turn to final using no rudder at all.

Things seemed a little better now but I was not taking anything for granted. Wound up hot and high so I started "S" turning on final to try and lose altitude and airspeed and told myself I was not going to go around.

I came across the numbers at well over 130kts and on my very first landing in my VariEze I ate up over 6600ft of the 7000 foot runway getting her stopped. I already experienced brake fade during taxi tests and knew my brakes had to be red hot after that landing. I very gingerly back taxied to the last turnoff (I ate up every inch before it stopped) and let her sit in the run-up area for a few minutes while the brakes cooled and I gathered my thoughts.

My support crew wanted to know what happened and I all I could say was "see you at the hangar". In fact, I cannot remember ever calling out my position in the pattern during this flight but my support crew told me I called each position without a hint of stress (this I attribute to my 14 years a Chicago ATC specialist). They had no clue of what had just taken place nor how close I had come to becoming the proverbial "lawn dart".

As I pulled up in front of my hangar door all the guys were waiting. In my mind I was congratulating myself for handling the "situation" like the pro that I once was and reconfirmed in my heart that I hadn't lost the "touch". Now it was time to find the culprit that tried to kill me!

Near Disaster on Maiden Flight

by Tim LoDolce
VariEze N26FM

Continued on page 4

Briefs

RAF's web server has changed its name. They have given us 6 months to make the changeover. RAF's new email address is RAF@antelecom.net Please make a note of it!

LOOK FOR THE FOLLOWING on TV or in your Magazines

August issue of Flight Journal features an article by Lt. Col. Rutan (Ret.) about his second life-saving bailout from an F-100.

Twin and Turbine Magazine did an interview with Dick. Watch for that in their Oshkosh edition.

We're still waiting for RealTV to announce the airing of Dick's North Pole adventure...

You Gotta See This, a show on Fox Sports Net, has plans to air the bail out from the Global Hilton balloon in the near future.

And if you haven't had enough, check out www.dickrutan.com for more! If you haven't gotten a copy of the three CD set FLIGHT OF VOYAGER, order today!

RAF HOURS: Rutan Aircraft is officially open every Wednesday. Please call between 10 am - 2 pm (661) 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.

RAF ADDRESS

1654 Flightline, Mojave, CA 93501

RAF PHONE NUMBER

(661) 824-2645

RAF FAX NUMBER

(661) 824-3880

RAF EMAIL ADDRESS

raf@antelecom.net

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Overseas (Airmail) subscriptions
\$16; Back issues \$4

RAF is no longer accepting
multi-year subscriptions. Please
renew only after your current
subscription has expired.

If you are building a
RAF design, you must
have the following
newsletters:

VariViggen (1st Ed)

CP 1 to current

VariViggen (2nd Ed)

CP 18 to current

VariEze (1st Ed)

CP 10 to current

VariEze (2nd Ed)

CP 16 to current

Long-EZ

CP 24 to current

Solitaire

CP 37 to current

Defiant

CP 41 to current

A current
subscription of the
Canard Pusher is
mandatory for
builders, as it is the
only formal means
to distribute
mandatory changes.

ROLL OVER Structure Update

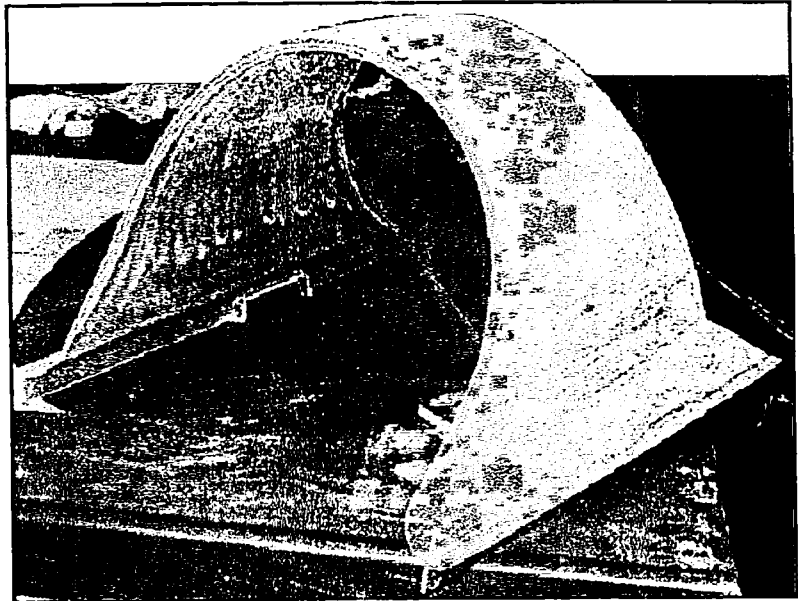
Dear Builders,

We were hoping that Mike's plans for the new roll over structure would be ready to send out with the April issue of the Canard Pusher but this is not the case.

Mike has worked at every opportunity on the roll over structure and it is now completely installed and operational in his Long-EZ. Burt asked Mike to make a few changes so Mike has been working on drawings of the latches, locating pins and etc . . .

The most difficult part of the job is still ahead with the drawing up of the plans, layout of the photos and written captions. We are working on it as quickly as we are able.

Thanks for your patience.
Tonya



**Plans for RAF's composite roll over structure will be mailed to EZ owners as soon as they are complete.
Send your SASE today**

BILL ALLEN's Roll Over Structure

ANOTHER Option is to contact Bill Allen whose welded-steel tube roll over structure has appeared in the Central States Association Newsletter and on the web.

You can see how Bill Allen's roll over structure was prepared on the web at www.longeze.com/ then click on preparation and rollbar.

Bill plans to have prices and schedule info for an assembled structure and kit by the week of Feb 12

Contact Bill at bill@allenworld.com
or write or call RAF
for more information

**Due to rising printing and postal costs
RAF has to increase prices
on some plans**

**The Subscription for the Canard Pusher
will remain the same**

Price hikes on plans are as follows:

Building Moldless Composites Manual	- 16.00
Viggen RC Model Plans	- 14.00
Large rudder plans	- 20.00
Speed brake plans	- 14.00
0-235 engine installation	- 21.50
Roncz canard plans	- 42.50
Flush belhorns plans	- 14.00

Near Disaster

I unbuckled myself and calmly egressed from the cockpit, jumped down to the asphalt and found my knees quaking like aspen leafs in a fall breeze. When the crew learned of what just happened they immediately checked all flight controls. All seemed normal. We took off the cowling and LO and BEHOLD we found the answer. I experienced a stuck rudder!

NOW in the VariEze the rudder cables are routed through a pulley system into the trailing edge of the wing out to the rudder. The design calls for a "quick release" buckle to be located somewhere in the cowling so as to not interfere with control which requires two (2) swaged eyebuckles. This I did and checked and rechecked prior to the first flight and all was fine. I had read the CP's and had required maximum rudder travel to the 2 1/2 inches mandated by Burt.

What had happened was this. I had built a cowling rib into the cowl rather than glassing in a rib along the wings inner edge as most do today and I cut a hole for the cable to pass through. We found that when the cable was put under pressure by air entering the cowling it pushed the cable to the back of the pass through hole in the rib. When I pushed left rudder for the first time under pressure, the cable swage got caught on the rib and would not release back to normal

at lower speeds. We speculate that the shudder came from the rudder finally releasing under air loads and in the turn. As the air load built up on the stuck rudder it started to vibrate and hence allowed the swage to unstick from the rib. That's why things felt more normal on downwind, base, and final.

Moral of this story: When things go wrong "Fly the airplane".

In retrospect I probably should have gotten to some altitude and checked everything out very carefully. I could have elected to make right turn only after the initial event but that's in hindsight now. All I could think about at the time was getting the thing I had been working on for 5 1/2 years back on the ground ASAP. I did not want to further complicate things by entering a non-standard pattern for my field.

I did not declare an emergency but I probably should have. Then, had I ran off the runway or crashed, help would have been immediately available. Well, I hope some of you learn from my experience and never find yourself in that situation. ●

Flyin' with Friends

Grassroots Gathering Arlington EAA Fly-In

July 13 1200- 1350

*An informative gathering for EAA members and their guests
with EAA President Tom Poberezny*

For more information contact the www.eaa.org
Experimental Aircraft Association (920) 426-4800

San Diego's E-Z Squadron Annual Summer Bar-B-Que and Fly-In

Sat, June 16
Ramona Airport
Ramona, CA

9-11AM Arrivals * Set-Up *
Stactic Displays * Weigh-In *
Pictures

11-12PM Very Important
meeting to discuss new meeting
places and times * New
squadron * Leadership *
Mission Statement

12-2PM Food * Great Eats *
Hot Dogs * Hamburgers *
Snacks * Ice Cream * Raffle
Tickets * Prizes

BRING THE WHOLE FAMILY

Please RSVP Chuck at

CHUCK173RG@AOL.COM
or (858) 487-8556

R.A.C.E. Schedule for 2001

Jackpot, NV
July 7 & 8 Racing on July 8th

Kanab, UT
September 1, 2, 3 Racing on Sept. 2

Mesquite, NV
October 27, 28 Racing on October 28

Kilo Trials
Buckeye, AZ November 24th

Kanab, Utah - Aikins Lodge 435-644-2625
Jackpot, Nevada - Cacuts Petes Casino 800-821-1103

Mesquite, Nevada - Virgin River Casino 800-346-7721 or
Oasis Resort & Casino 800-621-0187

Wendover, Nevada - State Line Inn (Specify the State Line Inn) 800-848-7300

The dates are subject to change but we'll
go with this for now. Please
encourage others to come on out and
participate or just watch the racing.

Thanks to all of you for your support.
Shirl & Dorothy

Accident Report

LETTERS

March 31, 2001 at Pinson, AL

On March 31, 2001, about 0930 central standard time, a Variez O-235, N49LK, registered to an individual, collided with terrain near Pinson, Alabama, while on a Title 14 CFR Part 91 personal flight.

Instrument meteorological conditions prevailed at the time, and no flight plan was filed. The airplane was destroyed and the private-rated pilot received fatal injuries. The flight originated from Tuscaloosa, Alabama, on March 31, 2001, at 0910 central standard time.

According to members of the pilot's family, the pilot was flying from Tuscaloosa, Alabama, to Gadsden, Alabama. When the flight did not arrive, search operations were initiated. The airplane wreckage was located on April 6, 2001, about 1600.

We do not have any further information as to the cause of this accident as yet.

Accident occurred Monday, October 18, 1999 at QUEMADO, NM

Aircraft: Gardner VARIEZE, registration: N13WM

Injuries: 1 Fatal.

While visiting a repair facility in California to have minor repair work performed on the aircraft, the pilot was visited at his request by a man who sold him the engine's carburetor foam air filter. The man inspected the filter and it appeared 'aged' and 'crumbly.' The pilot declined to have the filter replaced, and the pilot then reinstalled it. After an overnight stop in Arizona while en route back to his home town in Texas, the pilot contacted Albuquerque ARTCC and reported a rough running engine. He requested vectors to the closest airport, but was never identified on radar.

The last transmission from the pilot was received at 1008, and the aircraft was located by a local rancher several hours later. The airplane was landed on a dry dirt field parallel to a forrest road and directly perpendicular to another gravel road. The touchdown speed was estimated to be excess of 100 knots, and the aircraft's owners manual recommends 55 knots on a rough field. Following the accident, the engine was test run. Black smoke exited from the exhaust and the engine ran rough. An internal examination of the carburetor revealed that the foam air filter had been torn and pulled through the throat of the injector, causing a restriction in airflow.

The National Transportation Safety Board determines the probable cause(s) of this accident was: The pilot's selection of an unsuitable landing area on which to make a precautionary landing, and his excessive airspeed during landing touchdown. Factors were the ingestion of the foam air filter into the throat of the injector, and the pilot's failure to replace the worn air filter.

Dear Burt & Mike,

I hate to disturb you with this but there is a growing aversion to the rodend change RAF mandated in the last CP {CP103}. Specifically, the Canadian's as a whole are disregarding the information

And some have asked how RAF came to the decision to make the change. CP103 did not give full details of the failure and now everyone wants to know EXACTLY what happened so they can determine if there individual system, which has been working flawlessly for years, really needs the change.

I too feel the same way. I find absolutely no binding or bending of my control rod ends but I do feel Burt and Mike would not have gone to all the trouble of making this a mandatory change if there wasn't something more to it.

Please pass this on to Burt and Mike and ask them to respond as soon as possible. I am willing to pass their information along. Just have them send me their response via my email which is tiger@telis.org

Tim LoDolce
EAA Tech Counselor/Flight Advisor
VariEze Owner/Builder N26FM
Truckee Tahoe, CA

Tim — A long time ago we realized that, due to a known incidence of failure, the dash 3 rodends should not be used in primary controls. We did not initially mandatory them for the ailerons, since they are redundant. However, there have been two failures, both without indication of bending, and we have a fear that a single failed rodend may result in a control jam and thus a serious accident.

Burt

www.homebuilt.org

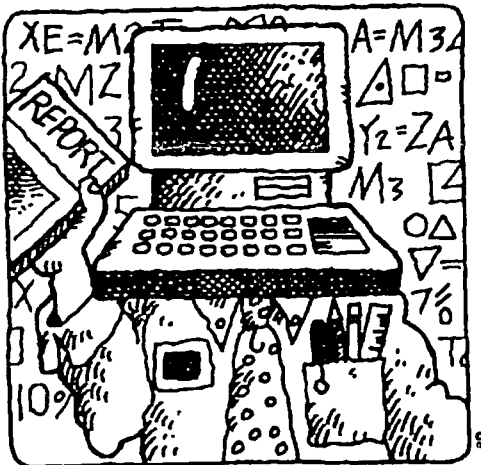
The Homebuilt Homepage is online information about Sport Aviation, in particular Homebuilt Aircraft. It is an index containing links to companies sites, information on companies that don't have their own web page, a list of builders and owners of Homebuilts that have an email address, design software, and much more.

This is a volunteer, not-for-profit web site. There is no charge for links or listings.

Take a look at Boeing Aircraft's future airliner.

Looks like the EZ concept is catching on
><http://www.boeing.com/news/feature/concept/>

On the Web



**Check out Dick's
new website
www.dickrutan.com**

Dick's 11-page website cronicles his record-breaking flights as well as the crash & burns. Read stories about the Voyager; Mike Melvill's 1997 World Tour; the Global Hilton and much more!

www.canard.com

Canard Pushers #1-82 are available on The Canard Aviator's Page.

While the files are currently text-only the Canard Aviator's offers a great search engine that allows you to seach CP 1-82 with the touch of a button.

You can also download the entire zipped set of Stet Elliot's Canard Index from this site.

Rutan Aircraft Factory is building a website

Its not up yet — I'm still working on it

Look for it in June under

rutanaircraft.com

Feather Lite Inc.

LONG-EZ PARTS PRICE LIST

Main Landing Gear Strut	\$379.00
Nose gear strut	\$64.00
Engine Cowl Glass Top & Bottom Set	\$369.00
Engine Cowl Kevlar Top & Bottom Set	\$499.00
Cowl inlet	\$ 60.00
Wheel pants (3.5x5 set)	\$170.00
Wheel pants (500x5)	\$195.00
Wheel Pants Kevlar	
500x5 Set original style only	\$230.00
NG 30 cover	\$23.00
Pre-cut Foam Cores Canard	\$180.00
*Pre-cut Foam Cores Wing & Winglets	\$1180.00
Leading Edge Fuel Strakes	\$420.00
Bulkheads Left & Right	\$199.00
Strut cover SC	\$23.00
Nose wheel cover NB	\$23.00
Sump blister SB	\$23.00
Carb. Air Box Kit	\$165.00
Baggage Pod Set	\$395.00
Nose Bumper Rubber	\$10.00
NACA inlet	\$55.00 (requires cowl modification)
Propellers, with rain leading edge	(call for quote)

Contact Michael Dilley or Larry Lombard
(both former RAF employees
and EZ builders and flyers)
Feather Lite, Inc., PO Box 781
Boonville, CA 95415
707-895-2718

A check or money order is required to process orders.
Orders are filled by postmark date.
California residents add 7 1/4% sales tax.
All Truck orders shipped freight collect.
We've negotiated a 40% discount with Viking Freight.
Please include a telephone number, a mailing and a street address.
Please allow 30 days for delivery, we will expedite when possible.
We will discuss questions regarding our products by phone or mail.

*Items must be shipped by truck.

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.

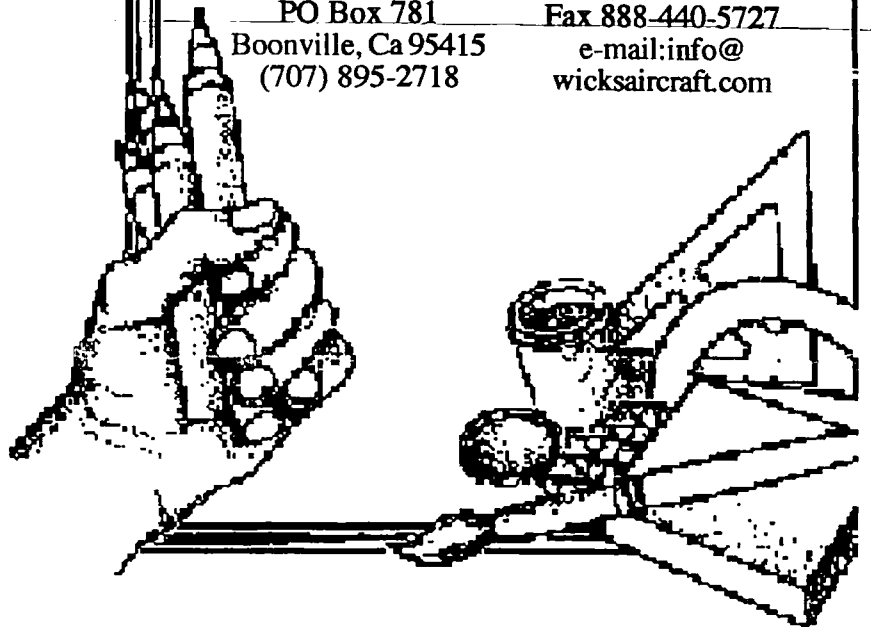
Brock Mfg.
11852 Western Ave
Stanton, Ca 90680
(714) 898-4366

Aircraft Spruce West
PO Box 4000
Corona, Ca 91718-9961
(909) 372-9555
Fax (909) 372-0555

Feather Lite
PO Box 781
Boonville, Ca 95415
(707) 895-2718

Aircraft Spruce East
PO Box 909
Griffin, GA 30224
(770) 228-3901
(800) 831-2949

Wicks Aircraft
410 Pine Street
Highland, IL 62249
(800) - 221-9425
Fax 888-440-5727
e-mail:info@
wicksaircraft.com

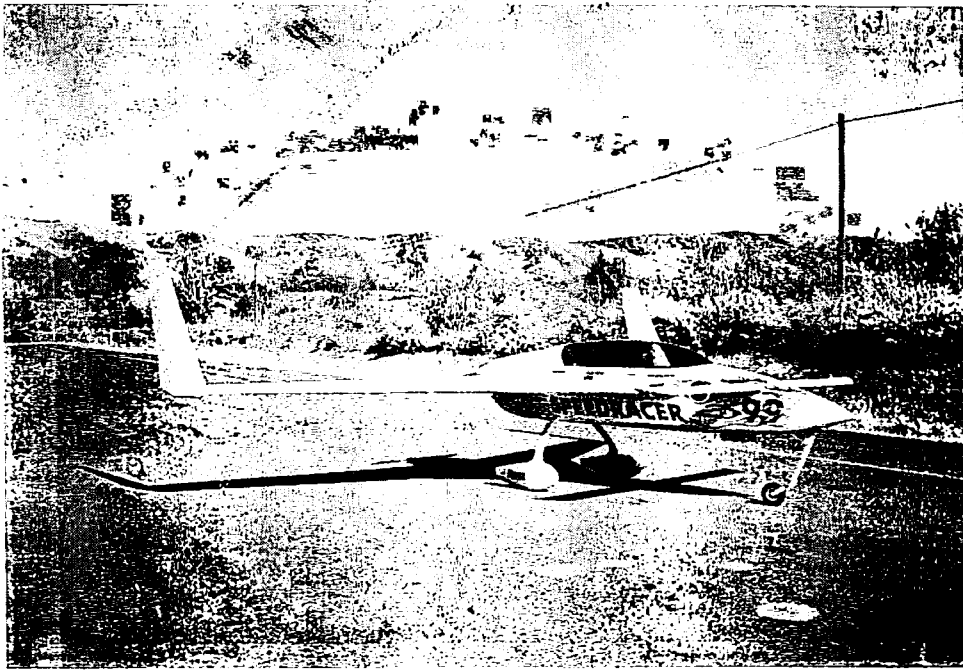


FLUSH, INTERNALLY MOUNTED ANTENNAS

A complete line of antennas, specifically designed for, and flight tested on, composite aircraft. The antennas are tuned for maximum performance and in general those who have used them so far report reception is doubled over standard external antennas.

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.

Call Bill Butters 800-758-8632 Advanced Aircraft Electronics, PO Box 4111, Florissant, MO 63032



Bob Holliston's Speedracer is 0290 powered. His best race speed was 231.55 average at the Mesquite, NV R.A.C.E.

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APRIL 2001
 CP 104

If your label says LAST ISSUE CP 104, this is your last issue and you need to renew.

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