PARTS LIST

SYM	NO REQD	DESCRIPTION
1	1	PIVOT SHAFT
2	1	PILOT SLEEVE
3	1	THRUST WASHER
4	1	MODIFIED WASHER ~ AN 970-6
		OPEN I.D. TO 1 1/32"
5	1	COTTER PIN ~ MS 24665 - 357
6	1	SHEAR NUT ~ AN 320-12
7	1	WASHER ~ AN 960 - 1216
8	5	SPRING WASHER - STAINLESS STEEL
9	1	PIN ~ 3/8 O.D. X 7/8 LG. 2024 T4 ALUM.

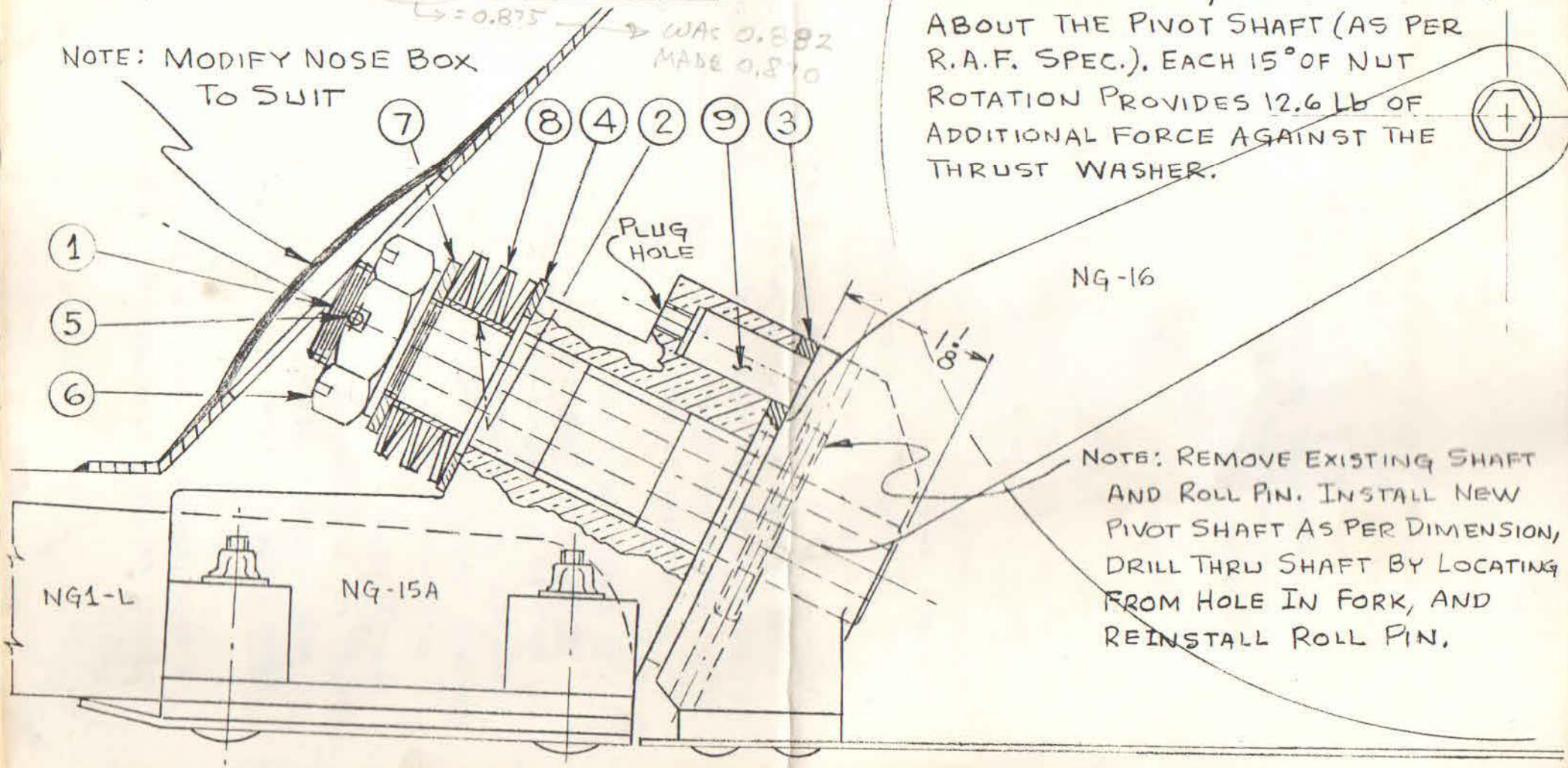
LONG-EZ/VARI-EZE SHIMMY DAMPER ASS'Y.	1
DR. BY: BOB DAVENPORT-EAA 1844	
DATE: 5-1-85	REVISED 4-17-87
SCALE: FULL SIZE	

NB

3-5 lbs. PER CP41, P.5

NOTE: COMPRESS SPRING WASHERS WITH NUT SO THAT A 5lb FORCE IS REQUIRED AT THE WHEEL TRAILING EDGE TO MOVE THE WHEEL/FORK ASSEMBLY ABOUT THE PIVOT SHAFT (AS PER R.A.F. SPEC.). EACH 15° OF NUT ROTATION PROVIDES 12.6 Lb OF ADDITIONAL FORCE AGAINST THE THRUST WASHER. *

NOTE: MODIFY NOSE BOX TO SUIT



NOTE: REMOVE EXISTING SHAFT AND ROLL PIN. INSTALL NEW PIVOT SHAFT AS PER DIMENSION, DRILL THRU SHAFT BY LOCATING FROM HOLE IN FORK, AND REINSTALL ROLL PIN.

mandatory to scratch the surface with 40 grit sand paper to allow for a mechanical bond. Feather fill works best in dry conditions, such as we have here in the desert. Feather fill does not like humidity or moisture and you must not ever wet-sand feather fill. There have been a few cases of airplanes having their finish peel off in quite large pieces. The failure was at the feather fill to glass bond line, and invariably this kind of failure can be traced to moisture, high humidity conditions during application, wet-sanding the feather fill etc.

Sterling primer/filler (U-1761, U-1762) on the other hand, is a urethane product. Urethanes are famous for their adhesive qualities and given a clean surface they will generally stick forever. Sanding the glass is still recommended however, as there is nothing more disappointing than having your beautiful finish peel off! Sterling can be applied in high humidity environments, even in a pouring down rainstorm. Wet sanding is recommended. In other words, the material is essentially impervious to moisture. Sterling is more expensive than feather fill and it does seem to be slightly more prone to having pin holes after final sanding. But these can be filled with more Sterling, or 3M Spot Putty. We at RAF have used Sterling on several aircraft over the past two years and we are generally quite satisfied with it.

Sterling's biggest attribute as far as we at RAF are concerned is the fact that it cures rapidly and can usually be sanded within 45 minutes to an hour.

Recently we tried a new material (to us), Morton's Eliminator. This is a dark gray polyester type material, rather similar to feather fill. Morton's Eliminator has a few special properties that make it quite desirable. It cures quite rapidly, and the cure can be accelerated with heat. It is formulated to provide an absolute moisture or solvent barrier. Any material applied over "eliminator" will not penetrate and get under it and cause it to separate. It is designed to eliminate pin holes. It builds up well and is a good contouring medium. It sands readily once fully cured. We have not finished a complete airplane with it at this time, but we have used t on some glass parts and have been impressed by its performance. We found that the following procedure worked best for us while using Morton's Eliminator. Sand the parts to provide a good scratch for a mechanical bond. Spray a fog coat over the entire part and allow to flash off. Spray a medium cross coat over the part and before it dries, squeegee the wet material using a soft rubber squeegee. Use firm pressure to assure that the material is drawn into every scratch and pin hole. Smooth the surface with the squeegee as much as possible. Allow to flash off for 15 to 20 minutes. Spray a light cross coat over the whole thing, concentrating the spray wherever it obviously needs it, such as a particularly deep scratch or dent. Allow to cure per the instructions on the can. In a 70°F environment it takes 4 hours, 90°F it takes 70 minutes. If you heat it to 150°F, it will cure in 40 minutes. Sand with 180 grit wet or dry. It is now ready for whichever primer and top coat you have decided to use.

Brake Pads - As reported in a previous newsletter, Dick Kriedel and Mike Melvill have been trying a new Cleveland brake pad. This is a semi-metallic material and works quite well. Brake effectiveness is increased and brake pad life is extended. It is important however to use the correct break-in procedure for this type of pad or you will not realize its full potential.

Remove your wheel pants and taxi at 40 to 50 knots. Execute three consecutive hard brakings to a stop. Do not allow brakes to cool between brakings. This procedure will glaze the brake pad surface and prevent uneven pad wear and brake disc scoring. This is Cleveland's recommended procedure for the semi-metallic brake pads, Part # 66-56. These pads are available from Aircraft Spruce.

If you are using the regular organic Cleveland brake pads (Part #66-2), an entirely different break-in procedure is called for. Remove the wheel pants and taxi at 25 to 40 knots. Brake to a stop using light pedal effort. Allow the brakes to cool. Repeat this procedure a minimum of six (6) times. This will generate sufficient heat to cure the resins in the pads, but will not get so hot as to cause carbonization. A single, hard brake application on organic linings can carbonize and prevent attainment of the correct coefficient of friction for the entire life of the linings (which won't be long).

The above information was sent in by Long-EZ builder, Dick Kriedel, who tells us that you can get an informative catalog containing lots of wheel and brake information for $2 from:

Cleveland Aircraft Wheel and Brake Division,
Parker Hannifin Corp.
P.O.Box 158,
Avon, OH 44011

NOSE WHEELS

As we stated once before in CP 34, the nose wheel is prone to being forgotten. After all it is retracted when you are parked and while doing your preflight and when it is extended, you are normally in the front seat and unable to look at it! Get into the habit of extending it and prior to climbing into the seat, use your foot to check the friction damping. It won't take long to "calibrate" your foot and soon you will be aware of how it should feel. If it is loose and swings around with little or no drag, DO NOT FLY. Adjust the friction damper to give 3 to 5 pounds of force required to move it when pushing or pulling at the trailing edge of the tire.

If your airplane has a tendency to turn left or right while taxiing straight ahead on a level taxiway with no wind, you probably have your nose wheel mounted so that the nose wheel itself is not perpendicular to the level ground. We have recently corrected this problem on two Long-EZs by removing the four bolts and the 1/8" aluminum plate from the NG15A casting. Then using a home made "puller", consisting of 4 bolts, lots of washers and a spacer, we were able to pop the NG15A casting loose from the nose gear strut. Local heat such as an industrial heat gun can sometimes help.

We ground away some material at the tip of the nose gear strut, such that we were able to reinstall the nose wheel fork and pivot casting (NG15A) with the wheel itself absolutely perpendicular to the ground, with the aircraft level, sitting on level ground. In both cases this made an immediate and dramatic effect, allowing less use of brakes while taxiing, a shorter take off roll, since little or no braking was required and longer brake pad life.

PROPELLER TALES!

Propellers are very important. Check them carefully every flight, and handle them with great caution, they can bite. Check your prop bolt torque regularly. The first check should be done after the first flight on a new prop, then at 10 hours then at 25 hours and thereafter every 25 hours. The recommended torque is between 18 ft/lbs (216 inch pounds) and 22 ft/lbs (264 inch lbs). The proper torque on your prop bolts is very important, if the torque gets much below about 12 to 15 ft/lbs it is possible to loose your prop! Recently we were getting the original VariEze prototype out for a flight. It had not been flown or had the prop torqued in almost one year. All six prop bolts were literally finger tight! There was no measurable torque on any of the bolts.

Once the prop has been in operation for a hundred hours or so, you will seldom find the bolt torque low, except when you have flown from a wet or humid area into a dry climate. Check your prop bolts regularly and save yourself from what could be an embarrassing situation to say the least!

There have been one or two EZ pilots recently who have had their hands or fingers hit by the prop. Hand propping an aircraft engine particularly on an EZ is not difficult, but there is not room for carelessness or lack of concentration. The prop should always be treated like a loaded gun. Be especially careful when