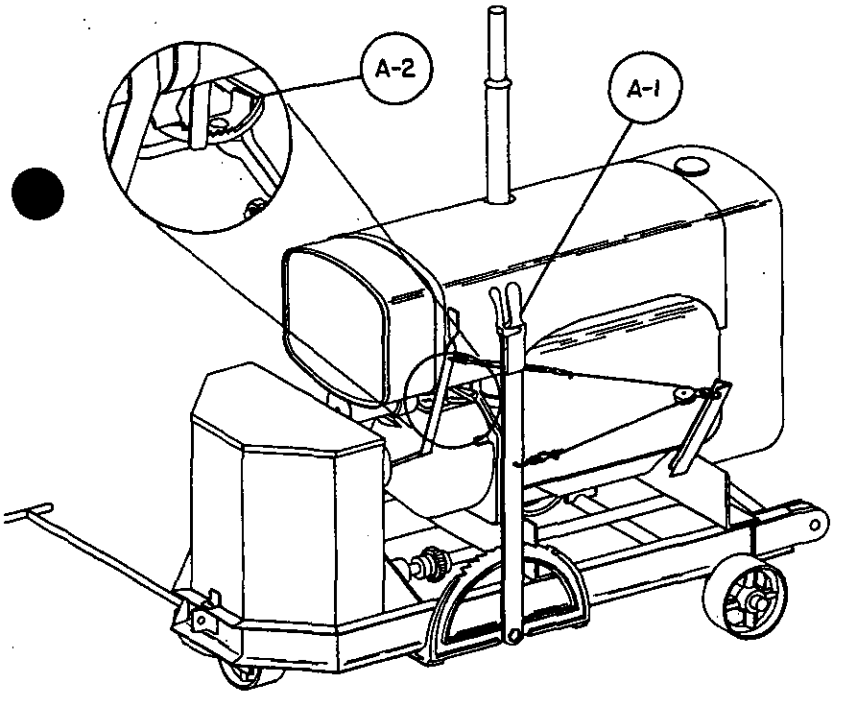
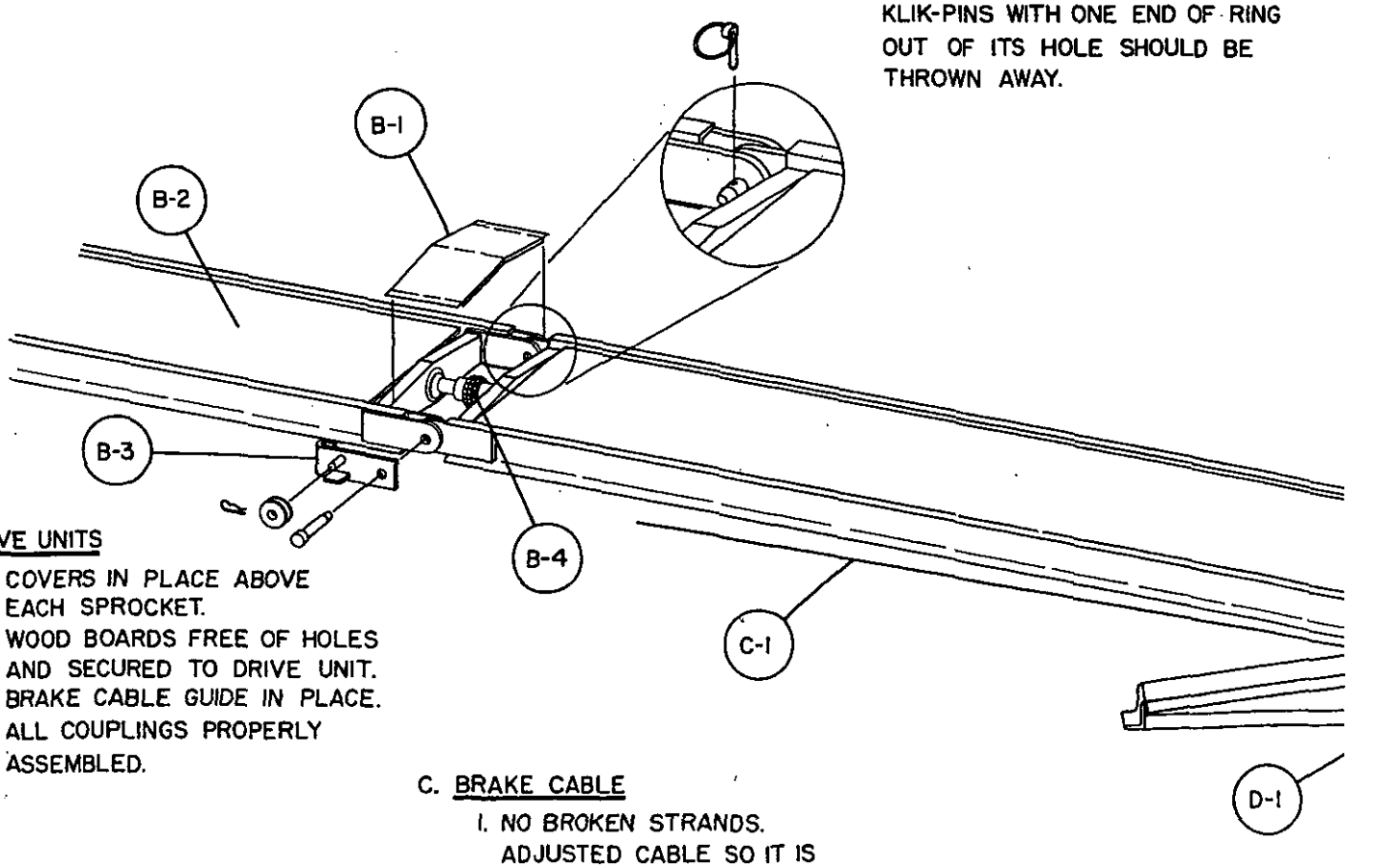



A. ENGINE TRUCK

1. BRAKE RATCHET HANDLE FULLY FUNCTIONING.
2. THROTTLE STOP ON ENGINE, WITH MAX. SPEED 11.0 RPM.
   MAX. SPEED WITH ELECTRIC MOTOR, 11.4 RPM.
   DRUM CONTROLLER CONTACTS NOT ARCING.

KLIK-PINS

RECOMMEND KLIK-PINS BE USED WHERE POSSIBLE.
KLIK-PINS WITH ONE END OF RING OUT OF ITS HOLE SHOULD BE THROWN AWAY.




B. DRIVE UNITS

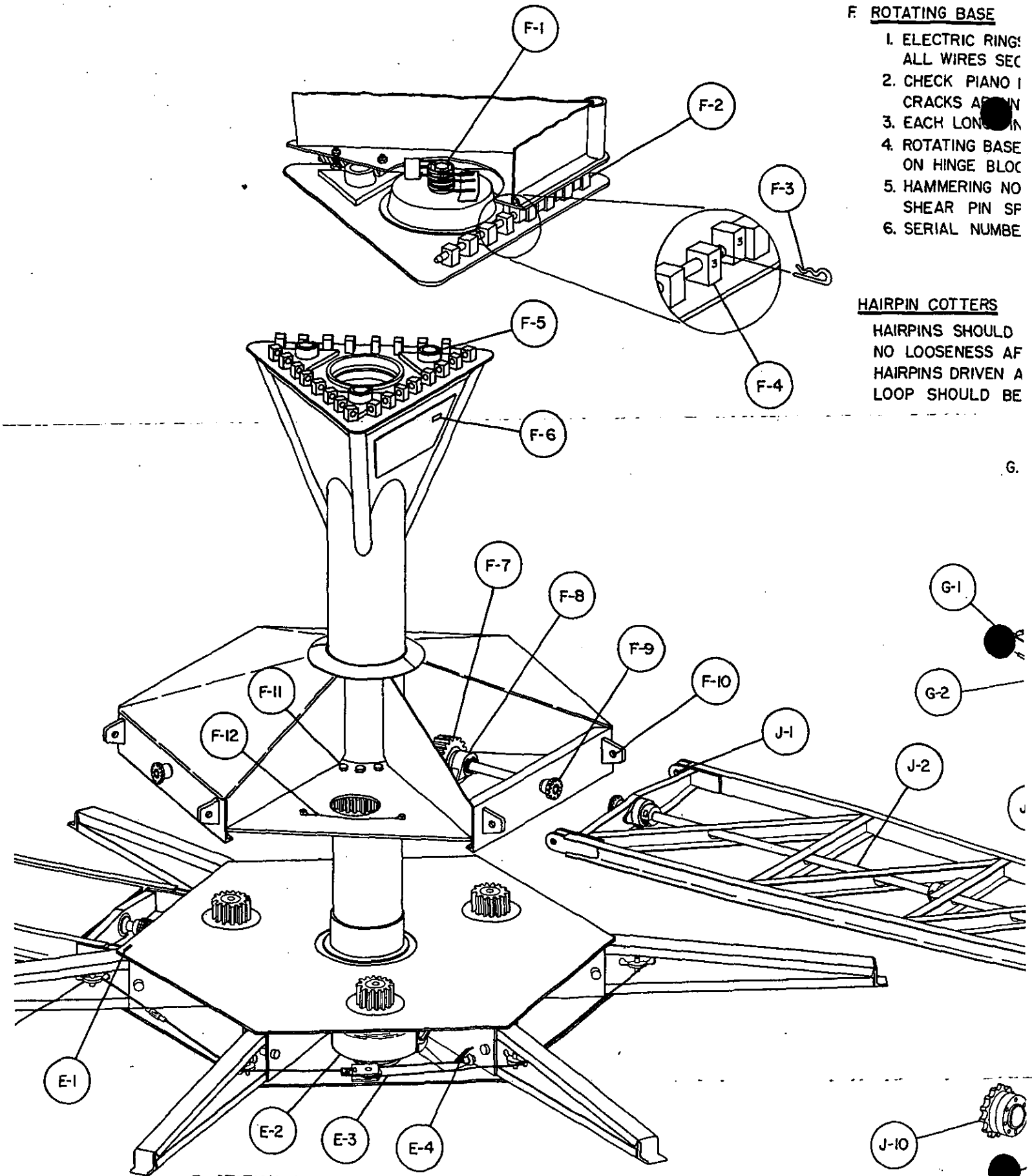
1. COVERS IN PLACE ABOVE EACH SPROCKET.
2. WOOD BOARDS FREE OF HOLES AND SECURED TO DRIVE UNIT.
3. BRAKE CABLE GUIDE IN PLACE.
4. ALL COUPLINGS PROPERLY ASSEMBLED.

C. BRAKE CABLE

1. NO BROKEN STRANDS. ADJUSTED CABLE SO IT IS FULLY TIGHT BEFORE BRAKE RATCHET HANDLE REACHES STOP.

D. BASE LEG

1. BRAKE CABLE SHEAVES, WHERE USED, MUST NOT BE BROKEN AND TURN FREELY.




F. ROTATING BASE

1. ELECTRIC RINGS ALL WIRES SEC
2. CHECK PIANO I CRACKS AR IN
3. EACH LON IN
4. ROTATING BASE ON HINGE BLOC
5. HAMMERING NO SHEAR PIN SF
6. SERIAL NUMBE

HAIRPIN COTTERS

HAIRPINS SHOULD
NO LOOSENESS AF
HAIRPINS DRIVEN A
LOOP SHOULD BE

G.

E. STATIONARY BASE

1. SERIAL NUMBER LOCATION.
2. BOTH BRAKES FUNCTIONING AND AT LEAST 1/8" OF LINING ON EACH BRAKE SHOE.
3. EQUALIZER USED.
4. SPRING ON EACH BRAKE ARM.

IGS AND BRUSHES SHOULD HAVE
ECURELY FASTENED
) HIN[illegible] FOR LOOSENESS, NO
[illegible]GE BLOCKS.
'IN SECURED BY HAIRPIN COTTER.
SE AND MAST MATCHED WITH "3"
OCKS.
NOISE CAUSED BY CREEP OF
SPROCKET, ADD GREASE.
BER LOCATION.

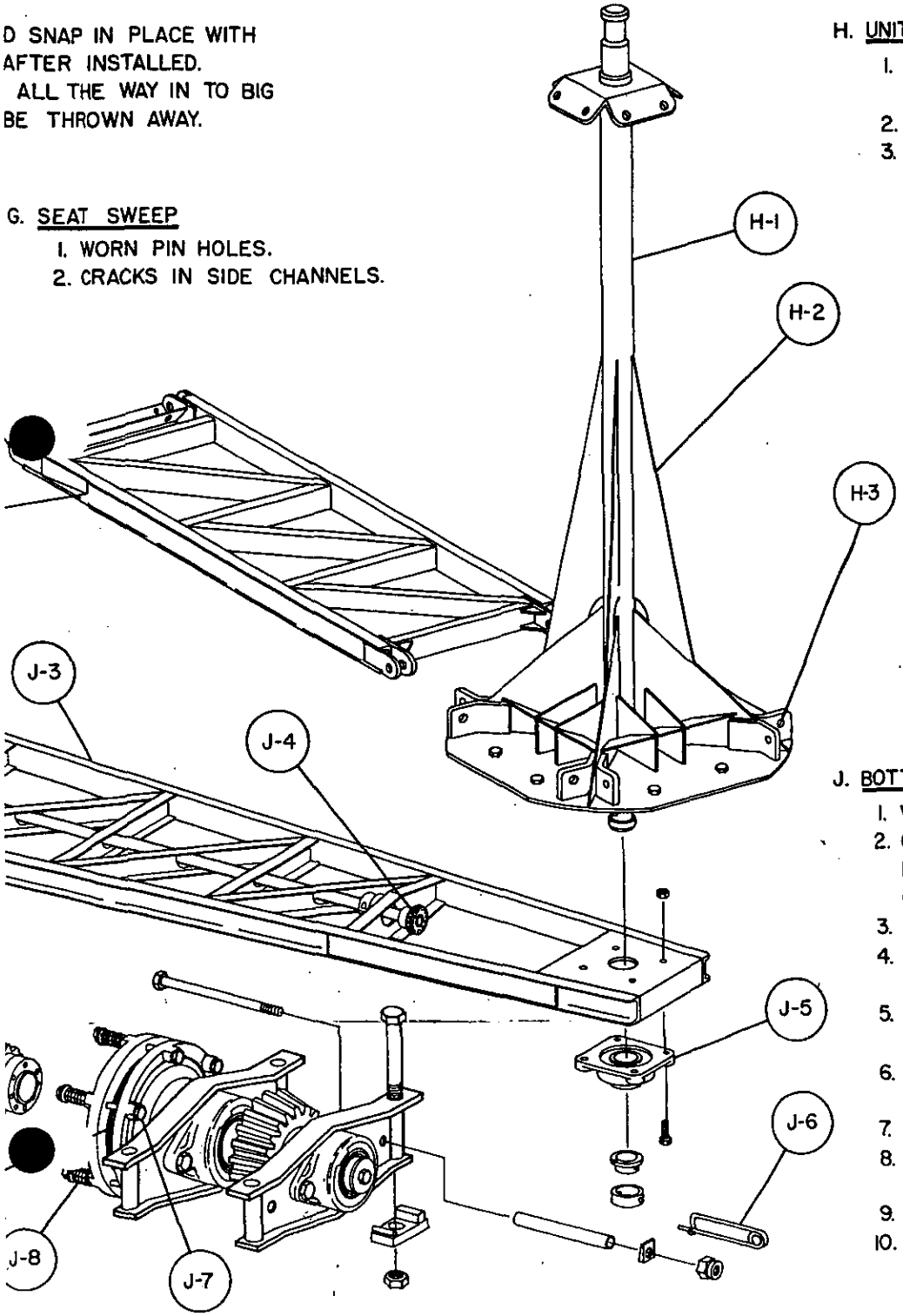
7. KEYWAYS OR SPLINES IN GEARS AND SPROCKETS NOT EXCESSIVELY WORN.
8. PILLOW BLOCK BEARING BOLTS TIGHT.
9. SPROCKET TEETH NOT WORN TO POINTS.
10. BOTTOM SWEEP PIN HOLES WORN.
11. HUB CASTING BOLTS TIGHT.
12. INTERNAL GEAR BOLTS SAFETIED IF LOOSE.

EXCESSIVE WOBBLING OF ROTATING BASE MAY INDICATE BROKEN CENTER POLE WELD AT BOTTOM.

D SNAP IN PLACE WITH
AFTER INSTALLED.
ALL THE WAY IN TO BIG
BE THROWN AWAY.

G. SEAT SWEEP

1. WORN PIN HOLES.
2. CRACKS IN SIDE CHANNELS.




H. UNIT POLE

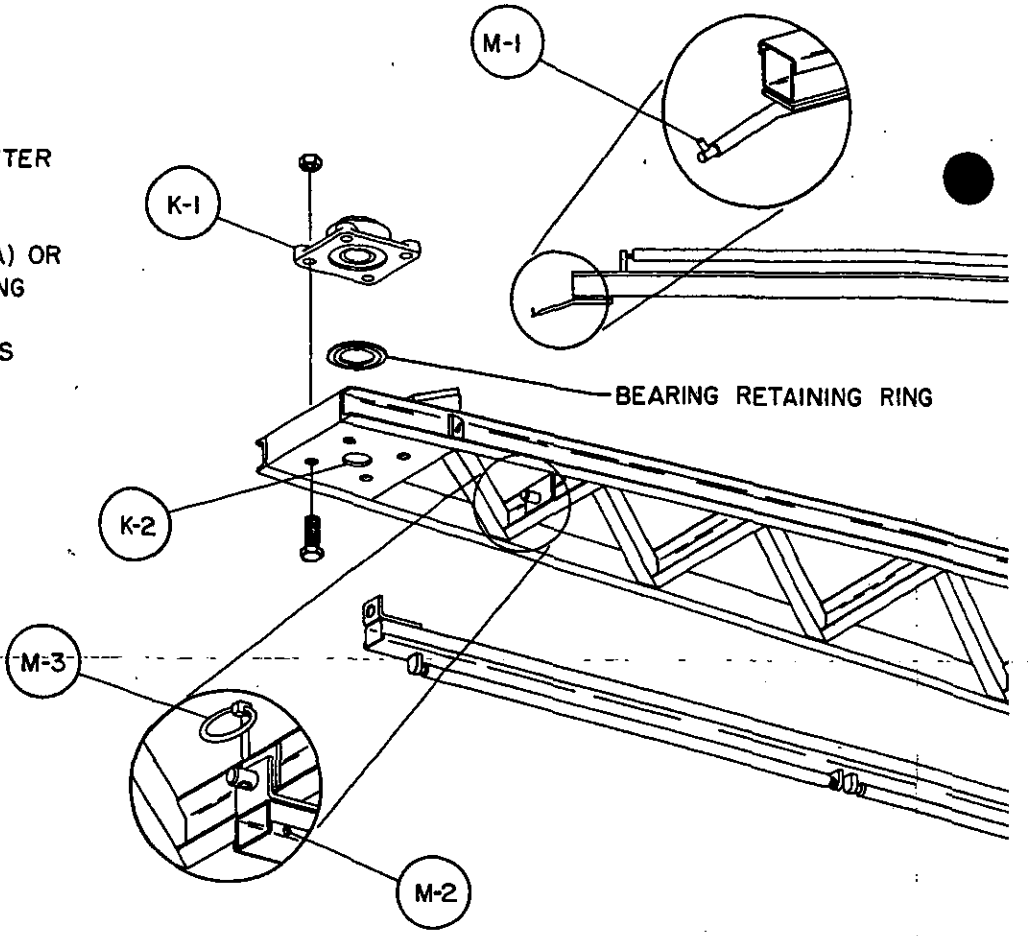
1. CHECK FOR CRACKS ANYWHERE ALONG LENGTH OF MAIN TUBE.
2. GUSSETS MUST BE IN PLACE.
3. WORN PIN HOLES FOR SEAT SWEEP.

J. BOTTOM SWEEP

1. WORN PIN HOLES.
2. CHECK FOR BACKLASH IN DRIVE AS EVIDENCE OF WORN KEYS, KEYWAYS, GEARS, AND SPROCKETS.
3. CHECK FOR CRACKS IN SIDE CHANNELS.
4. SPROCKETS IN GOOD SHAPE, CHAINS SHOULD BE FLEXIBLE WITH GOOD LOCK
5. BEARING REPLACED AFTER 3000 HRS. OR 4 YRS, WHICHEVER IS FIRST.
6. SAFETY PIN SHOULD BE FREE OF ANY OBVIOUS DEFECTS.
7. CLUTCH SPRING BOLTS NOT BENT.
8. CLUTCH SPRINGS NOT WORN (1-5/32" IN-PLACE LENGTH).
9. NO GREASE ON CLUTCH DISK.
10. REMOVE GREASE FITTING ON CLUTCH DISK HUB AND REPLACE WITH PIPE PLU(

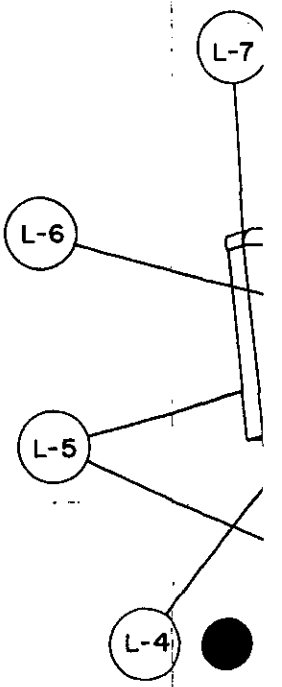
## K. TOP SWEEP

1. BEARING REPLACED AFTER 3000 HRS. OR 4 YRS, WHICHEVER IS FIRST.
2. SMALL HOLE (3-1/4" DIA) OR BEARING RETAINER RING MUST BE USED.
3. TOP SWEEP PIN HOLES WORN.




## L. SEAT

1. CRACKS OR RIVETS MISSING IN FOOTBOTTOM, WOOD BOARD IN BOTTOM OF FOOTBOTTOM.
2. LIP ON BOTTOM OF SEAT CUSHION EXTENDS UNDER LIP OF FOOTBOTTOM.
3. CRACKS IN FRONT RIB,
   WHERE HANDLEBAR STRIKES FRONT OF SEAT.
   WHERE HINGE BLOCKS ARE BOLTED ON.
   WHERE HANDLEBAR HINGE RUBBER BUMPERS ARE ATTACHED.
4. CALIFORNIA LATCH.
5. BACK SHEET RIVETS MISSING.
6. CRACKS OR RIVETS MISSING IN SEAT BODY, CRUSHED RIBS.
7. NO CRACKS WHERE BACK TOP TRAY CONNECTS TO END TOP TRAY, BOTH SIDES.
8. LATCH AND STRIKER ENGAGEMENT, ROLLER IN STRIKER FUNCTIONING.
   BENT OR CUT STRIKER.
   AT LEAST 1/4" ENGAGEMENT, WHERE SEAT STRUCTURE IS SOUND.
   CHECK FOR LATCH BODY AND SLIDING BOLT WEAR.
9. NO DRY ROT IN WOOD BOARDS, REMOVE BOARDS TO CHECK FOR CRACKS IN STRUCTURE UNDERNEATH.
   BOARDS SHOULD BE FREE OF SPLINTERS.
10. ON BACK OF HANDLEBAR, RUBBER BUMPERS IN PLACE.
    WARNING DECAL FULLY READABLE.
    LAP BAR BOLTS TIGHT AND BAR SWINGS FREELY.
    HANDLEBAR WEB NOT WORN THROUGH WHERE LAP BAR BUMPS.
11. NYLINERS AND HINGE

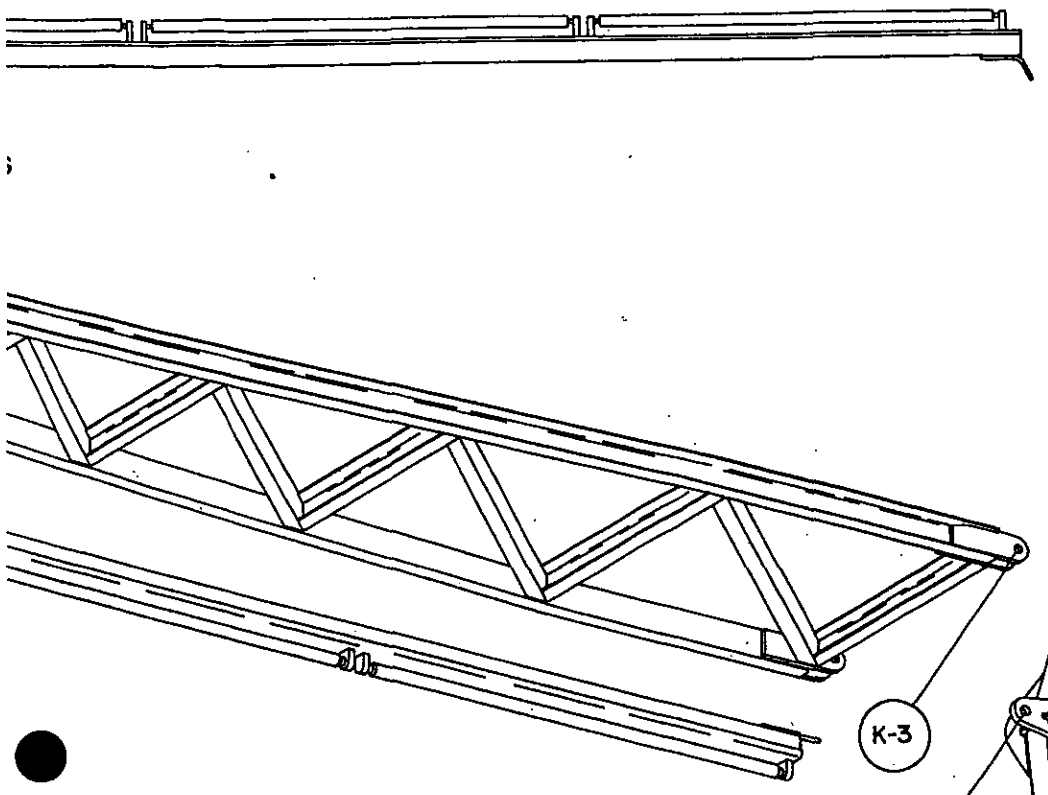



NO HOLES WORN THROUGH INSIDE SKIN UNDER SEAT CUSHION. REPAIR PATCHES TO BE MADE OF STRUCTURAL ALUMINUM, NOT STEEL OR SOFT ALUMINUM.
SEAT EQUIPPED WITH END CUSHION AT RIGHT END.
NO BROKEN AIR-LOCKS, IN SEAT, FOOTBOTTOM, OR STEP.

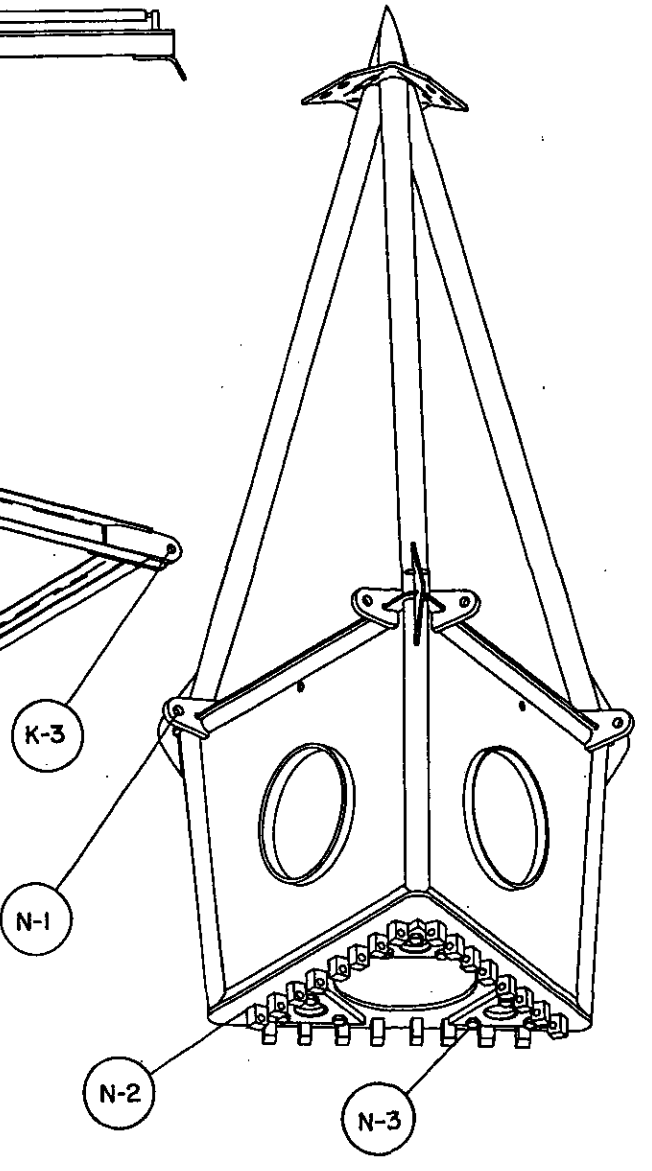
M. LIGHTING

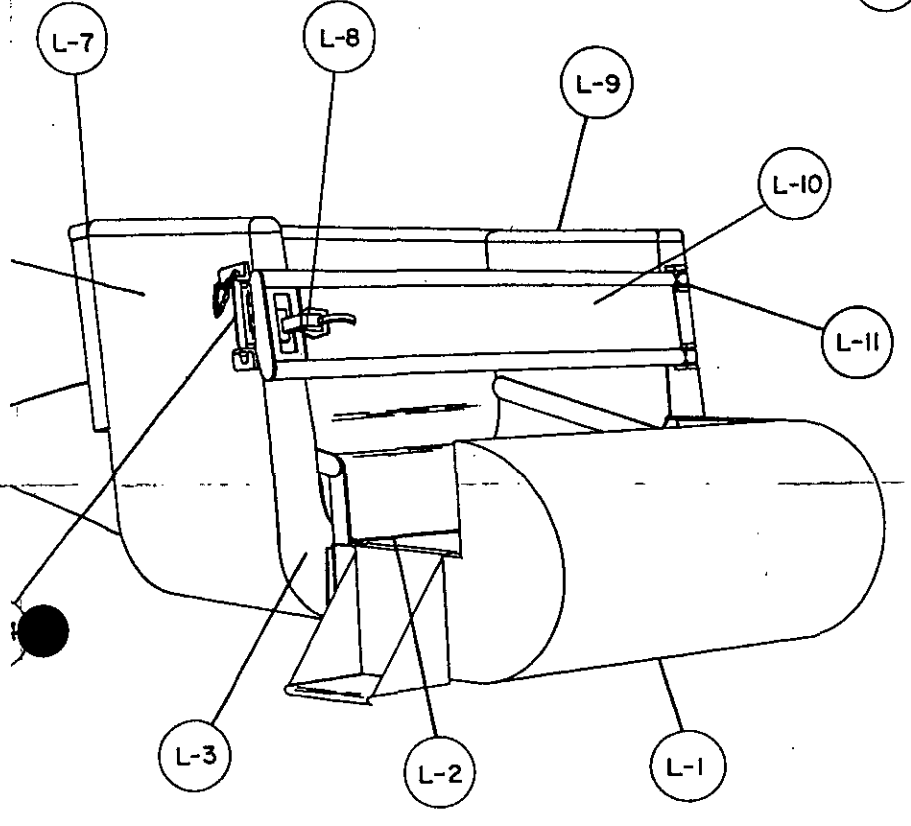
1. GABLE LIGHT END PIN IN PLACE.
2. SCREWS HOLDING PANELS TOGETHER ALL IN PLACE.
3. TOP SWEEP LIGHT PANEL SHOULD BE LOCKED IN PLACE WITH KLIK-PIN INSERTED FROM THE TOP DOWN.

WIRING WITH 3-WIRE GROUND, CHECK FOR GROUNDING.
ALL ELECTRICAL JUMPERS IN GOOD CONDITION, INSULATION INTACT, FITTINGS SECURELY ATTACHED.




) HINGE PINS SNUG.

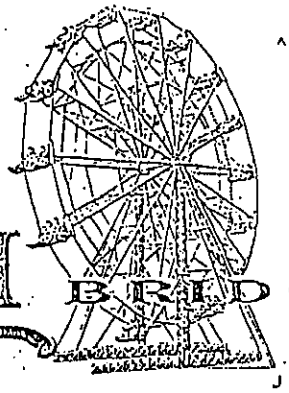


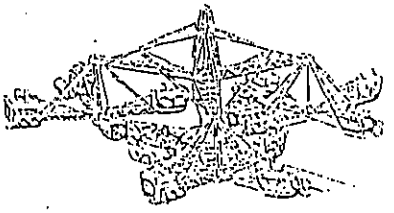

N. MAST

1. TOP SWEEP PIN HOLES WORN.
2. NO CRACKS AROUND HINGE BLOCKS.
3. SHEAR PIN SOCKETS BOLTED TIGHT.

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



AREA CODE 217 PHONE 245-7145



Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS, 62650

INSTRUCTIONS FOR REPLACING OIL SEAL IN SCRAMBLER PINION CASTING ASSEMBLY

The original seal used in the pinion casting assembly was a Chicago Rawhide "Perfect" oil seal Part No. 15245. The manufacturer discontinued that seal, and we could not find an interchangeable replacement from any other manufacturer. The closest seal in size was a Chicago Rawhide Part No. 15250. The original seal had an outside diameter of 3.066", and the replacement had an outside diameter of 3.130".

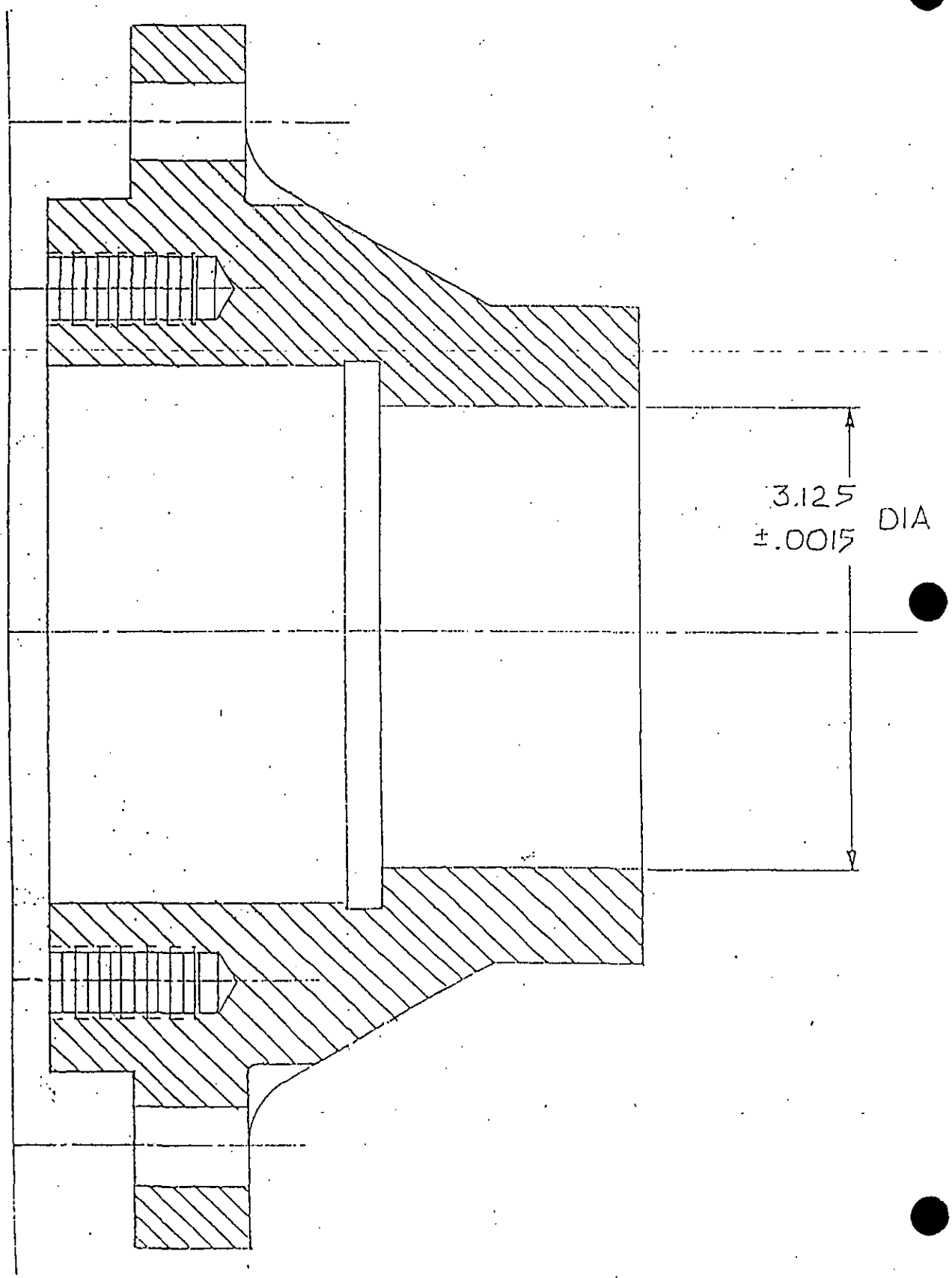
Therefore, to replace the seal it is necessary that the pinion casting assembly be disassembled and the casting re-bored to 3.125" $\pm$ .0015".

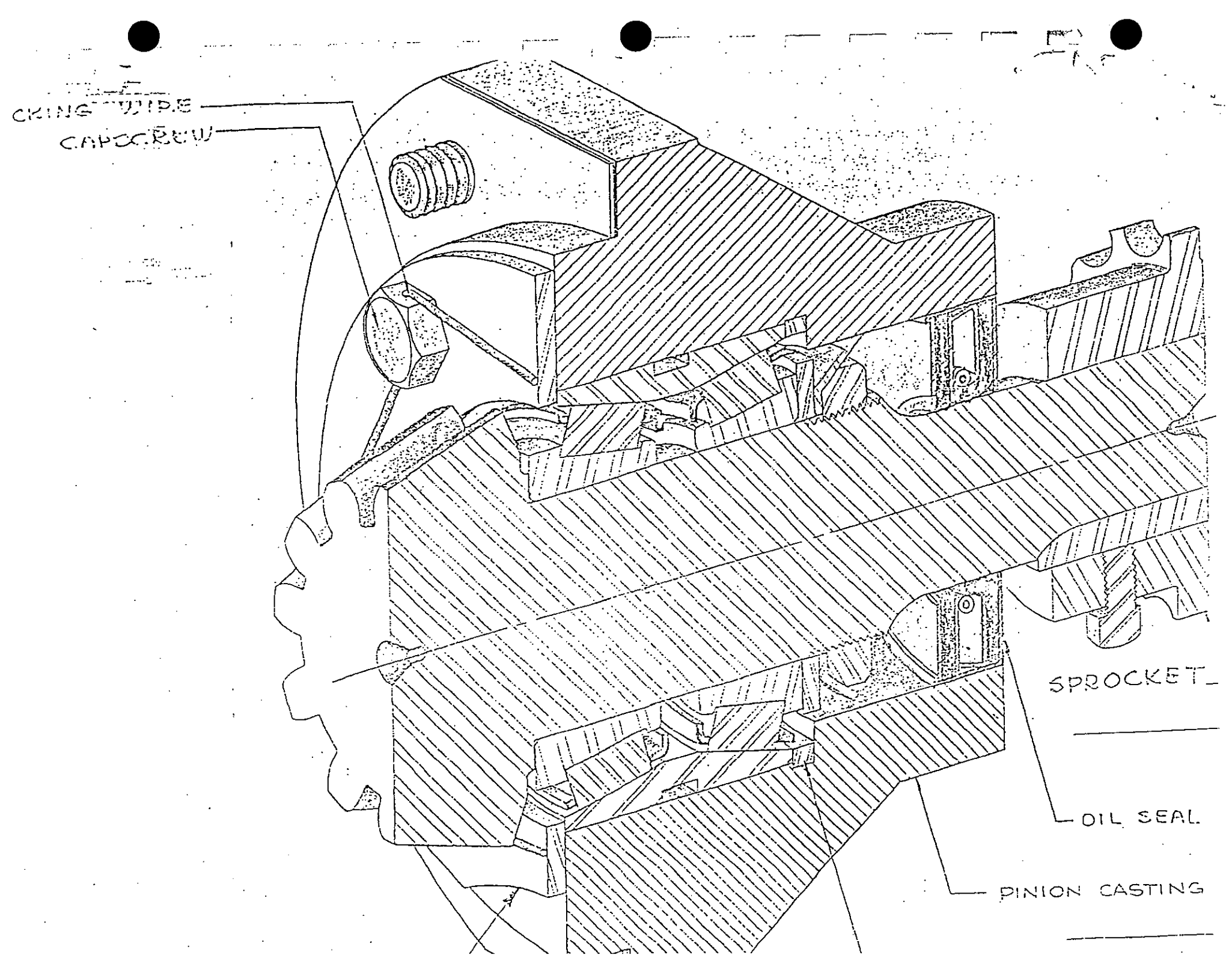
The following procedure should be used:

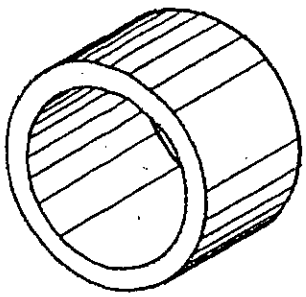
1. Remove the pinion casting assembly from the Scrambler, by taking out the six cap screws that secure it to the stationary base gear pot cover plate.
2. Remove the chain sprocket from the end of the shaft.
3. Remove the locking wire. It is 19 gage, dead soft iron wire, two feet long. When the time comes to replace it, thread the wire through the bolt heads so that loosening of the bolt will cause the wire to tighten, and then twist the ends of the wire together tightly with four turns to keep it from unwinding.
4. Remove the six cap screws that were wired together. This releases the flat ring bearing retainer so that it can be removed from the casting along with the bevel pinion gear, bearing, hardened washer, lock washer, and adjusting nut. All of these parts come out together and do not need to be disassembled.
5. The snap ring stays in the casting and is not to be removed.
6. The casting can then be re-bored to 3.125" $\pm$ .0015".
7. Then, re-assemble all the parts, and install it on the Scrambler

Special Machining Instructions:

The pinion casting was originally machined by gripping the casting at the small end in a three-jaw chuck. All the turned faces on the casting were finished from that one setup except for the facing off of the small end, and that was done after the rest of the machining was completed by reversing the casting in the chuck and gripping it on the large diameter locating shoulder. To re-bore the casting to the new larger diameter, grip the casting in a three-jaw chuck on the large diameter as if you were going to face off the small end. Check the original seal diameter with a dial indicator to be sure that the bore is running true before re-boring to 3.125" $\pm$ .0015".

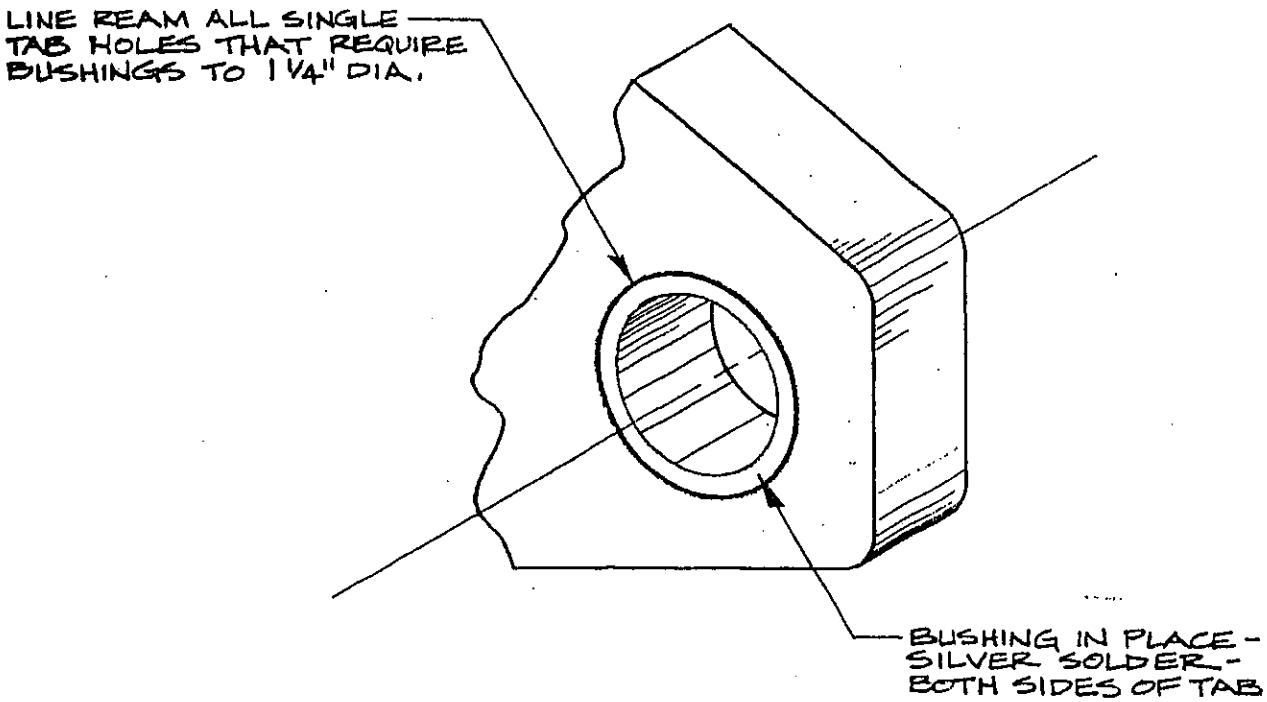

3.125
±.0015
DIA


CKING WIRE
CAP SCREW
SPROCKET
OIL SEAL
PINION CASTING



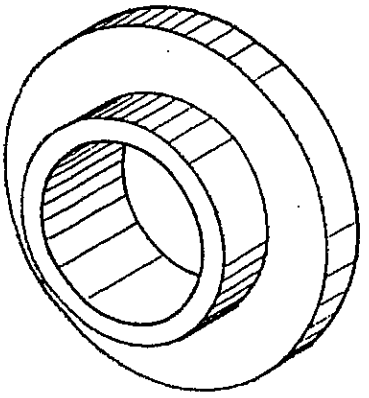
# SINGLE TAB BUSHING

* TYPICAL INSTALLATION LOCATIONS ARE NOTED IN YELLOW ON ENCLOSED SCRAMBLER INSPECTION LIST.



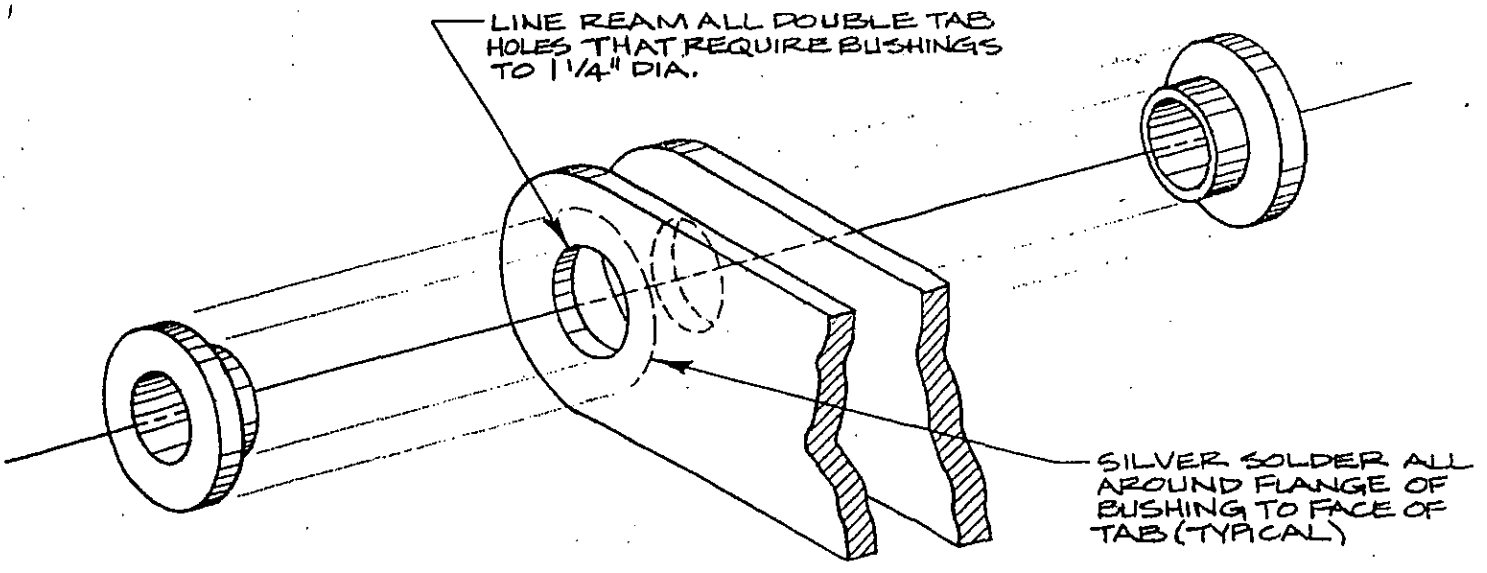

## TYPICAL MOUNTING DETAIL

SINGLE TAB BUSHING



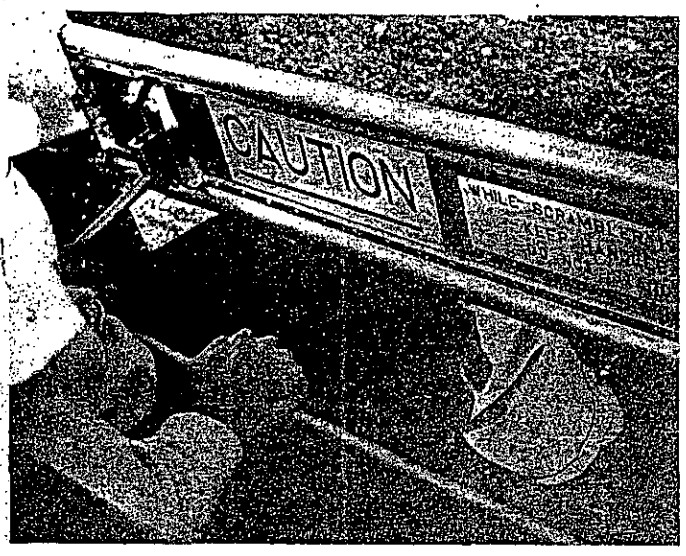
## DOUBLE TAB BUSHING

* TYPICAL INSTALLATION LOCATIONS ARE NOTED IN RED ON ENCLOSED SCRAMBLER INSPECTION LIST.




## TYPICAL MOUNTING DETAIL

## DOUBLE TAB BUSHING




Picture No. 1


Picture No. 2

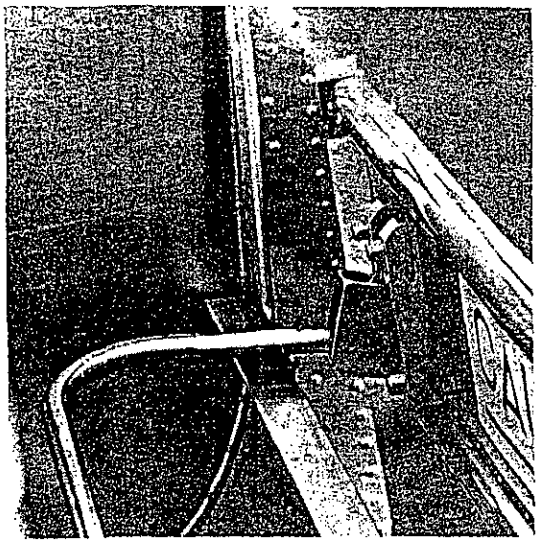
# LAP BAR FOR SCRAMBLER SEAT

A number of Scrambler owners have expressed interest in a lap bar for the Scrambler seat. Accordingly, all 1965 Model Big Eli Scramblers will be fitted with lap bars, and Eli Bridge Company will supply at reasonable cost a modification kit to enable any earlier Scrambler owner to install lap bars on his Scrambler seats if he wishes to do so.

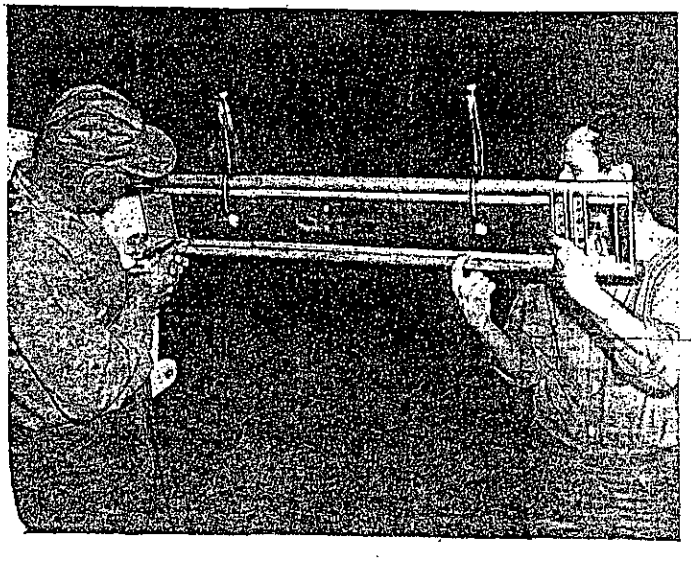
The lap bars have been designed to be installed on aluminum handlebars which were first furnished on 1959 Model Scrambler Serial No. 102. While they can be added to all earlier Scramblers with steel handlebars, it is recommended that the owner change to aluminum handlebars if he still has steel bars. The aluminum handlebars have given trouble-free service from the first time they were used.

The lap bar is made of stainless steel tubing. It is stout enough to withstand heavy use, it will not rust, and will not need painting. The bar turns freely on hinge pins in nylon bushings. It can be used in the low position, as shown in Picture No. 1, where small children can grip it easily and securely, or it can be swung up as in Picture No. 2 to provide more room for stout passengers. Rubber bumpers cushion the lap bar in both the upper and lower positions so that there is no metal-to-metal contact. An additional rubber bumper added to the footbottom prevents the lap bar from hammering on the footbottom when the footbottom is folded inside the seat for transportation. See Picture No. 3.

Installing the lap bar is a very simple matter. All that is necessary is to drill eight holes in the handlebar (as shown in Picture No. 4), drill two holes in the footbottom, and then bolt the parts in place. Complete installation instructions will be provided with the modification kit.



Picture No. 3



Picture No. 4

ELI BRIDGE COMPANY
800-820 Case Avenue
Jacksonville, Illinois 62650

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS

PHONE
CHESTNUT 5-7145

Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
JACKSONVILLE, ILLINOIS, U.S.A.

October 4, 1961

Dear Friend:

In the interest of promoting greater safety for Scrambler patrons, the Eli Bridge Company has reduced the recommended maximum operating speed from 12.5 r.p.m. to 11 r.p.m. All new Scramblers leaving our factory are now adjusted to operate at this lower speed.

Several Scrambler operators have already reduced their speed of operation to 11 r.p.m. with no loss in receipts and greater comfort to patrons.

We strongly urge you to adopt this lower maximum speed, adjust your Scrambler to it, and instruct your operators to observe it at all times without exception.

A revised sheet is included with this letter and is to be inserted in your instruction manual. Remove and destroy the old page 20 and insert the new sheet.

Yours very truly,

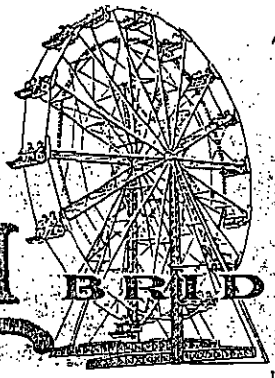
Robert L. Gaines

ELI BRIDGE COMPANY

RLG

Enclosure

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



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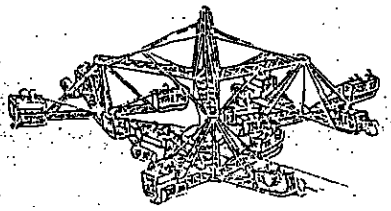


Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
JACKSONVILLE, ILLINOIS, U.S.A.

March 11, 1968

Dear BIG ELI Scrambler Ride Owner:

In limited instances it has been reported to us that a slight crack, and even a complete break, has occurred in one or more of the three Unit Poles of a Scrambler ride. When this happens it can be a severe hazard to any passengers who may be riding at the time.

In all cases known to us the crack or break has occurred immediately above the top of the four gusset plates of the Unit Pole. Due to the seriousness and similarity of this problem, we turned the matter over to an outside firm of consulting engineers for critical study and solution. Their investigation revealed that this failure is caused by operation of the ride at speeds in excess of that which is recommended by Eli Bridge Company.

This finding is further supported by the fact that, to date, the failure has occurred only on Scrambler rides that have been powered by gasoline motor. It seems operators have the ability to bypass factory-set speed limitation on gasoline motors and "goose" the ride to excess speeds, but have difficulty doing this when the ride is equipped with electric motor power. But there is no way to guarantee that this problem will not occur on electric motor powered Scrambler rides in the future.

To avoid this problem in the future, the consulting engineers have made two recommendations. First, DO NOT allow your operator to "goose" the ride to speeds in excess of those recommended by the factory (the centerpole of the ride should not turn more than 11 rpm when powered with gasoline motor, or, 11.4 rpm when powered with electric motor). Second, they have strongly recommended that all Scrambler rides presently in operation be equipped with additional gusset plates, as shown on the attached drawing. These extensions to existing gusset plates are designed to give the Unit Poles proper strength and safety - even though a crack may have already begun to form immediately above the original gussets.

It has been plainly stated that this failure is caused by improper operation, not by a design failure. However, we do recommend and strongly encourage that you immediately add these extension gusset plates to your Scrambler ride - BEFORE you begin your 1968 season's operation. These plates can easily be installed in your own winterquarters, or by a local machine/welding shop.

To further encourage this, Eli Bridge Company will make these extension gusset plates available to all Scrambler ride owners without charge --if ordered promptly. Your only cost of this shipment would be the transportation costs. We have these plates in stock, available for prompt shipment on receipt of your order.

An Order Sheet, with the extension gusset plates listed, and a postage paid envelope are enclosed for your convenience. Simply enter your name and address as to where the shipment is to be made, and return the Order Sheet to us. The plates will be shipped promptly. If you were already planning to order other parts at this time, do not hesitate to add those items to this same Order Sheet.

We believe you will find that these gusset plate extensions add to the appearance of the Unit Poles. As a matter of fact, we have already adopted this design for Unit Poles being furnished with new model BIG ELI Scrambler rides.

Do not delay, order and install these extension plates immediately. We will make these plates available on a "no charge" basis for a limited time only.

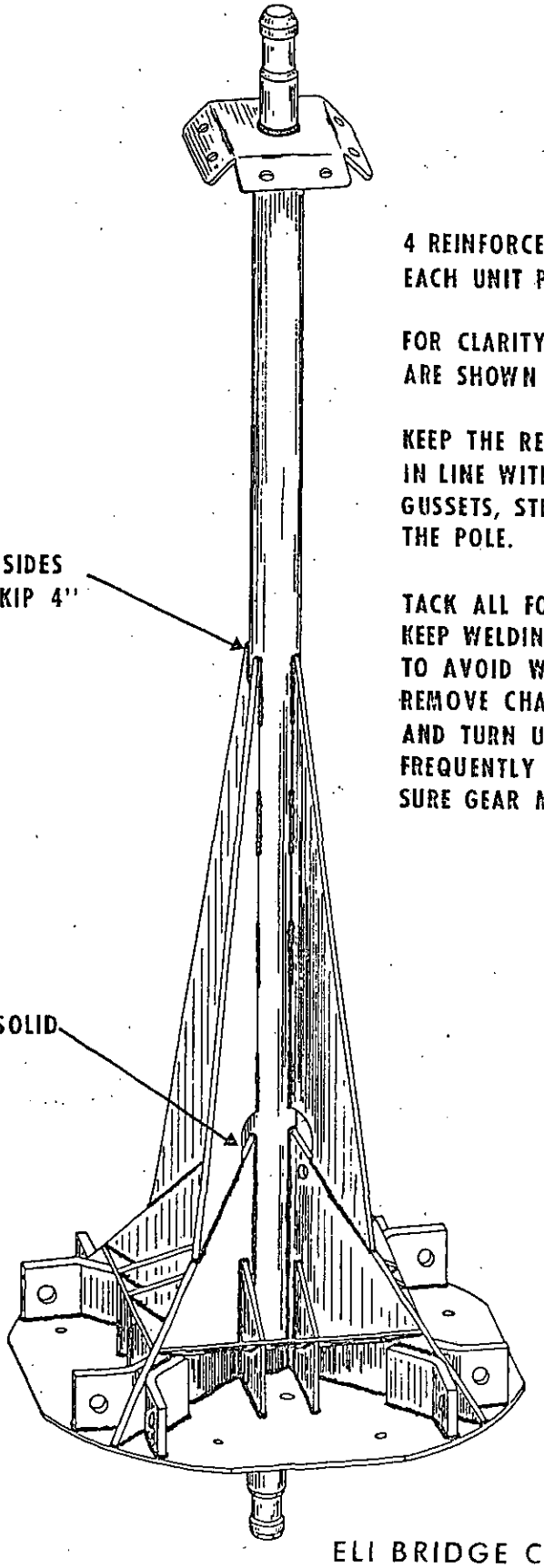
Yours very truly,

ELI BRIDGE COMPANY

Robert L. Gasser

RLG:fn
Encl:
U.P.drawing
Order Sheet
envelope

# UNIT POLE MODIFICATION



WELD BOTH SIDES
WELD 4" AND SKIP 4"

WELD BOTH SIDES SOLID

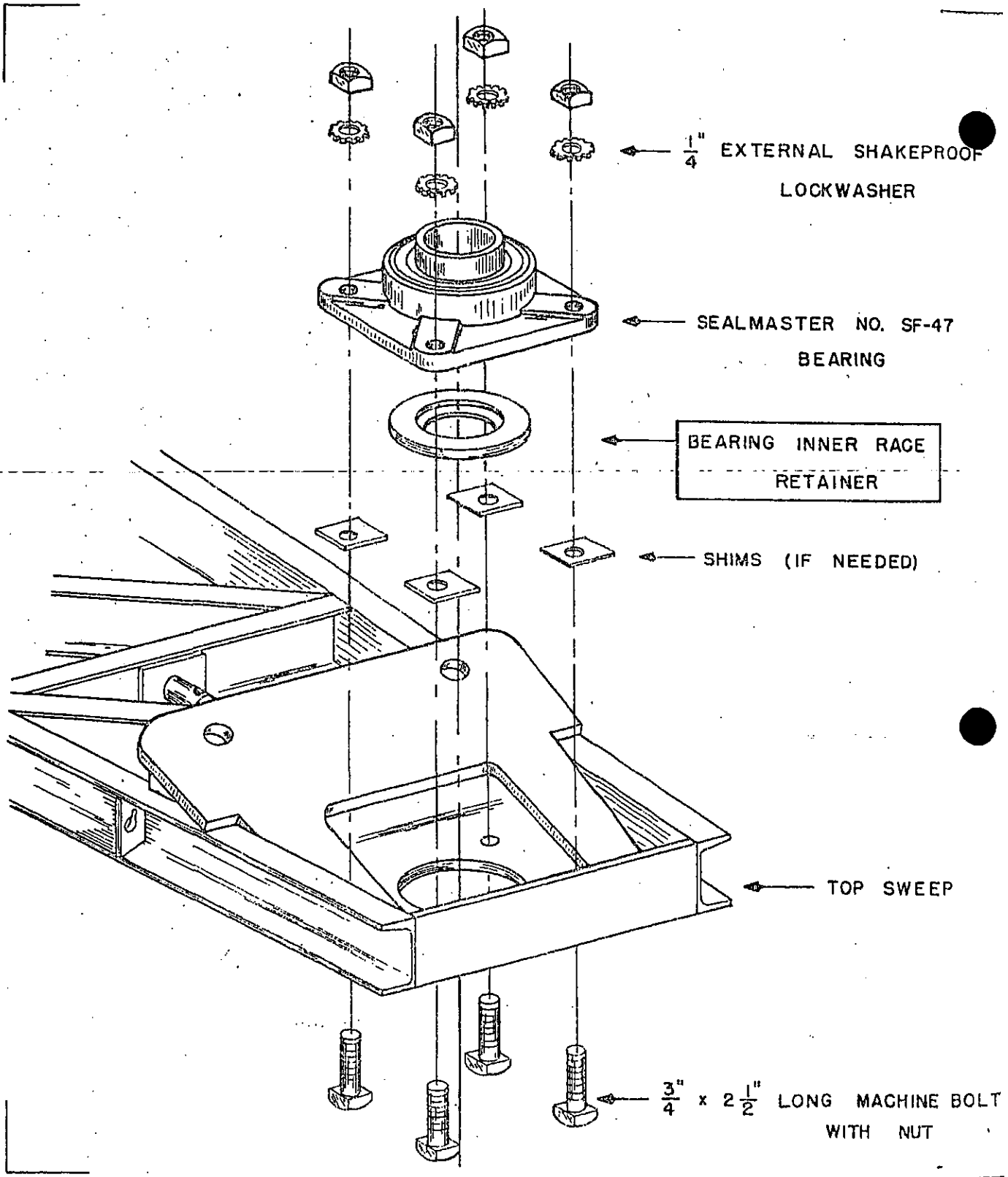
4 REINFORCEMENTS GO ON EACH UNIT POLE.

FOR CLARITY, ONLY TWO ARE SHOWN IN THE SKETCH.

KEEP THE REINFORCEMENTS IN LINE WITH EXISTING, GUSSETS, STRAIGHT UP THE POLE.

TACK ALL FOUR IN PLACE, KEEP WELDING BALANCED TO AVOID WARPING POLE. REMOVE CHAIN FROM COUPLING AND TURN UNIT POLE FREQUENTLY TO MAKE SURE GEAR MESH IS EVEN.

ELI BRIDGE COMPANY
Jacksonville, Illinois

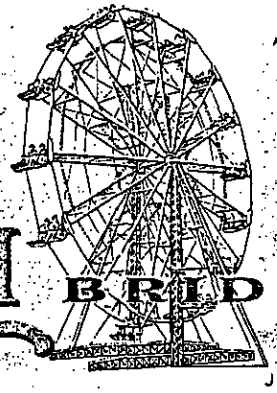



MODIFICATION OF SCRAMBLER TOP SWEEPS

In two instances it has been reported to Eli Bridge Company that the Sealmaster SF-47 flange bearing cast ing has failed, allowing the unit pole to drop through the opening in the top sweep. When this happens it ca be a severe hazard to any passengers who may be riding at the time. Therefore Eli Bridge Company is makin available the special bearing inner race retainer shown, as a safety measure. Remove the bearing on the to sweep, set in place the bearing inner race retainer with its biggest diameter on the top side, and the p down the bearing again. The bearing inner race retainer is a loose piece, and be sure that when you tighte down the bearing, the bearing inner race retainer is still loose. This will not interfere with normal procedur for assembling the unit pole to the top sweep, but will insure that if the bearing casting should fail, the un pole will not drop to the ground.

ELI BRIDGE COMPANY
800 Case Avenue
Jacksonville, Illinois 62650

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



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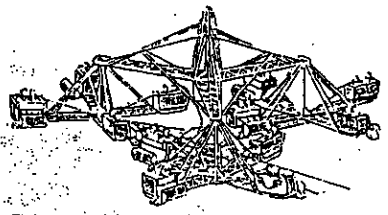


Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS, 62650

12 April 1973

Dear Scrambler Ride Owner:

The State of California has placed a mandatory requirement on all Scrambler rides that operate in that State, requiring that every seat handlebar have a secondary latching device.

In accordance with the above requirement, Eli Bridge Company has developed such a device as shown in the enclosed photograph. It has been strength-tested at the factory, field-tested on a Scrambler ride, and has been approved by the State of California.

This secondary latching device can be added very easily to any Scrambler ride seat equipped with aluminum handlebars. Some of the earliest Scrambler rides may still be fitted with steel handlebars, and it is not designed to fit them. If you have steel handlebars we suggest you contact the factory for further information.

The foreman of our Scrambler ride seat fabrication department has estimated that an entire Scrambler ride could be modified with these secondary latches in approximately three hours.

The cost of this modification kit is $24.00 per seat, or a total of $288.00, f.o.b. our factory. This price includes all the parts, bolts, nuts, rivets, drills, drill templates, and instructions. You will need a hand pop-rivet gun capable of setting 5/32" diameter rivets, and a hand drill.

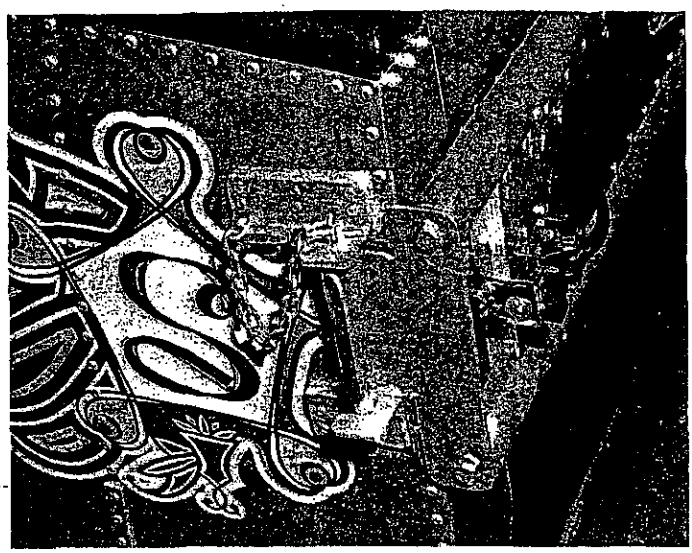
Although you are not located in California, we felt you should be notified of the above -- as you may play one or more locations in California during your normal season.

The above mentioned modification kit, for 12 seats, is available for reasonably prompt shipment, following receipt of firm order.

Sincerely yours,
ELI BRIDGE COMPANY

Lee A. Sullivan, Jr.
Lee A. Sullivan, Jr.
President.

# SAFETY BULLETIN



SECONDARY LATCHING DEVICE

for Seat Handlebar of

BIG ELI Scrambler ride.

In 1973 it became mandatory in the State of California that rides such as the BIG ELI Scrambler ride be equipped with secondary latching devices on the seats, in addition to the normal primary latch. It was intended that this secondary latching device prevent the handlebar from opening, or being easily opened, even if the primary locking device should fail to function.

In accordance with the California requirement, Eli Bridge Company developed and tested such a device. It was approved for use in California, and was made available to all owners of BIG ELI Scrambler rides operating in that State.

At the conclusion of the 1974 amusement season we contacted owners whose seats had been equipped in this manner for the past two seasons, asking to know their experience and comments. Based on the very favorable response received, starting with 1975 models (Serial No. 416) all new BIG ELI Scrambler rides have been equipped in this manner.

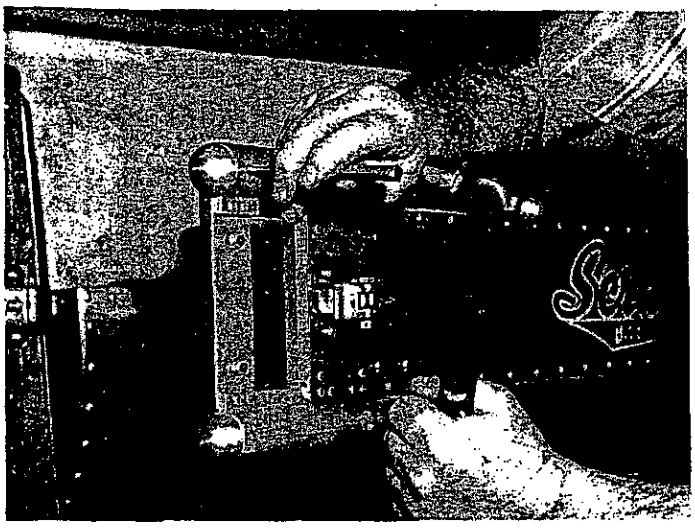
This secondary latching device can be easily added to any Scrambler ride that is equipped with aluminum handlebars. For the added protection of your passengers, we strongly urge you to make this modification to the handlebars and seats of your BIG ELI Scrambler ride.

Back in early 1973 we offered this modification kit complete, for 12 seats, at the price of $288.00 (f.o.b. our factory). The kit included 12 secondary latching devices, necessary hardware, drill bit, drill templates, and instructions for installation. To encourage your purchase, installation and use of this equipment on your BIG ELI Scrambler ride - we offer this equipment to you at the same price we were quoting back in 1973. However, this is a limited offer, for your prompt acceptance.

Installation is quite simple. In addition to the above, you will need a hand pop-rivet gun capable of setting 5/32" diameter rivets, and a hand drill. It is estimated that installation of all 12 secondary latching devices will require approximately 3 hours of your time.

Some older model Scrambler rides (1959 Model, Serial No. 101 or older) are still equipped with old-style steel handlebars. To use this secondary latch modification, these rides would also have to be equipped with aluminum handlebars. You will find aluminum handlebars quoted in your Scrambler ride Parts List.

# DIRECTIONS FOR INSTALLING A SECONDARY LATCH ON A SCRAMBLER RIDE SEAT



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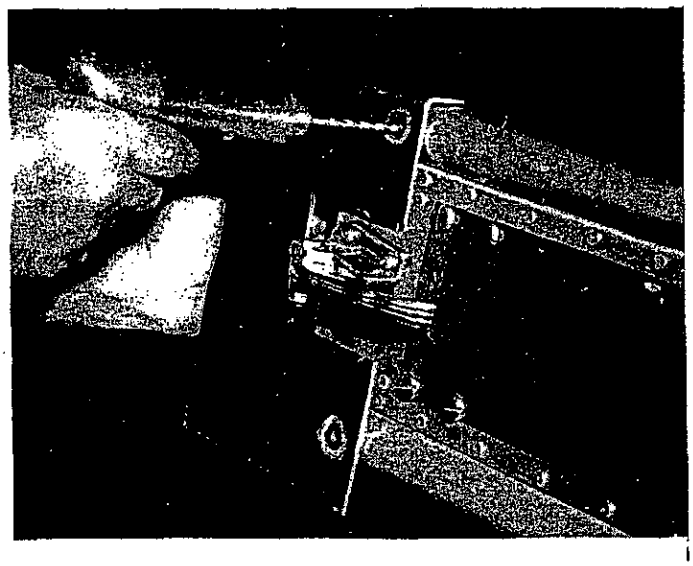

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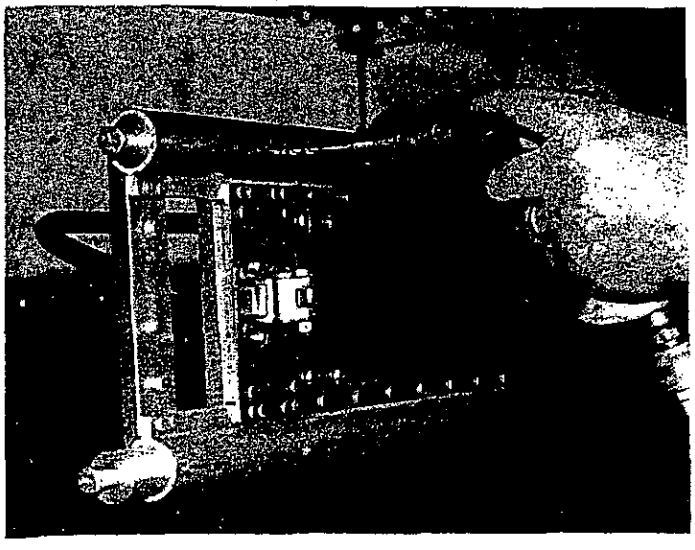

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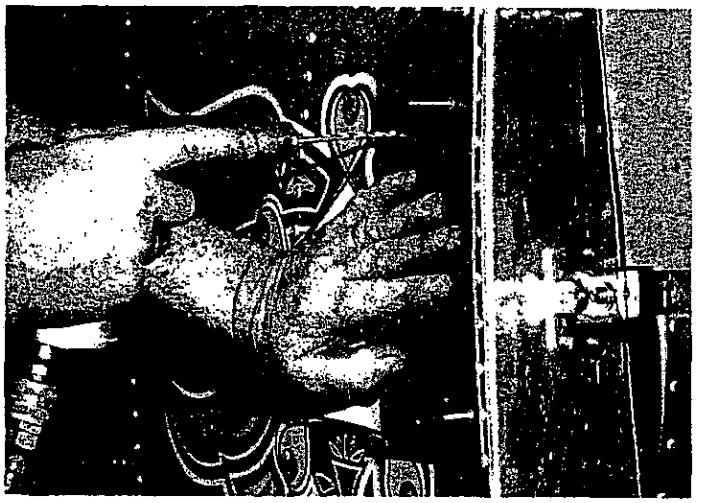
These instructions apply only to Scrambler seats equipped with aluminum handlebars.

1. Use a 5/32" punch to push out the roll pin holding each rounded knob in the end of the handlebar, as shown in Picture No. 1. Then remove the knobs.
2. Hook the handlebar drill template over the top of the handlebar and butt it against the outer end of the handlebar as shown in Picture No. 2. With a 3/16" drill, drill a hole through the front side of the tube at the top of the handlebar, and then do the same with the tube at the bottom of the handlebar. These two holes in the template are encircled in the Picture. CAUTION: DO NOT DRILL THROUGH THE BACK SIDES OF THE TUBES.
3. Each long plug has a 3/8" hex head bolt screwed in the end. Insert the plug into the tube of the handlebar, and shove it in until it is flush with the outer end of the handlebar. Turn the plug around until you can see the hole in the plug through the hole you have just drilled in the tube. Line up these two holes as well as you can. Insert the 3/16" drill all the way in and finish drilling through the back side of the tube, as shown in Picture No. 3. In this way the hole will be lined up all the way through. Install the round head, 10-24 screw, 1-½" long, through the hole and secure it with a self-locking nut.
4. Lay the skin template against the side of the seat and locate it in position by inserting the stem of a rivet through the only hole that is in a corner of the template, and then insert the stem of the rivet through the hole in the rivet head in the top front corner of the seat. Line up the front edge of the template with the front edge of the seat, and insert the stem of a second rivet through the other hole in the front edge of the template and into the hole in the rivet head underneath the template. This locates the template accurately. There are four holes remaining in the template. Using a No. 20 drill, drill one of the holes into the seat skin, and slip a rivet through the template and seat skin to keep them lined up. DO NOT SET THIS RIVET. Then drill the second hole, which is near the first hole. See Picture No. 4. Repeat the procedure with the other two holes.
5. Remove the template and install the two brackets on the side of the seat. The top bracket is the long one, and the hook must be on the bottom side. On the bottom bracket the hook must be on the top side. The two holes located by the template for each bracket are for the top front and bottom rear rivet of each bracket. Set the two 5/32" rivets in each bracket. See Picture No. 5.

6. With a No. 20 drill, drill through the remaining four holes in the top bracket to locate matching holes in the seat skin, and then do the same with the three in the bottom bracket. Then install the 5/32" rivets.
7. Install the chain with the end link laid on top of the bracket and pointed straight out, away from the seat. The round head of the 10-24 screw (¾" long) and the washer go on the top of the chain link, and the *self-locking nut goes underneath the bracket.*
8. Install the handlebar bracket on the end of the handlebar with the two 3/8"-16 hex head bolts, 1" long, and be sure there is an internal lockwasher under the head of each bolt.
9. The locking pin will drop in place freely if all parts have been installed correctly.
10. This completes the installation of the secondary latch, and it is shown in Picture No. 6.



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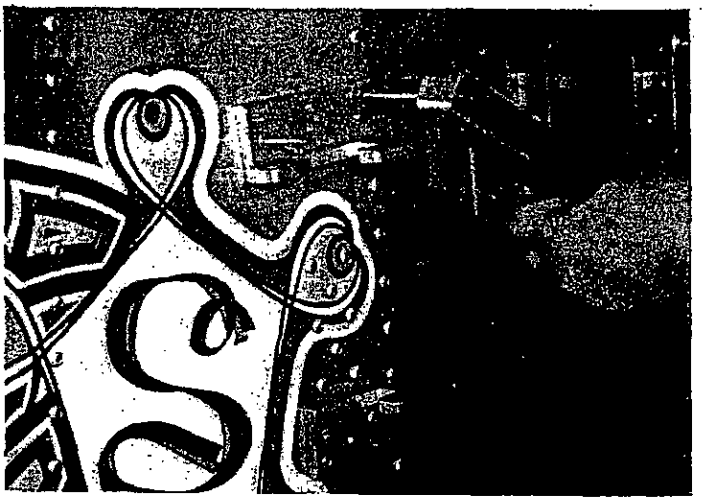

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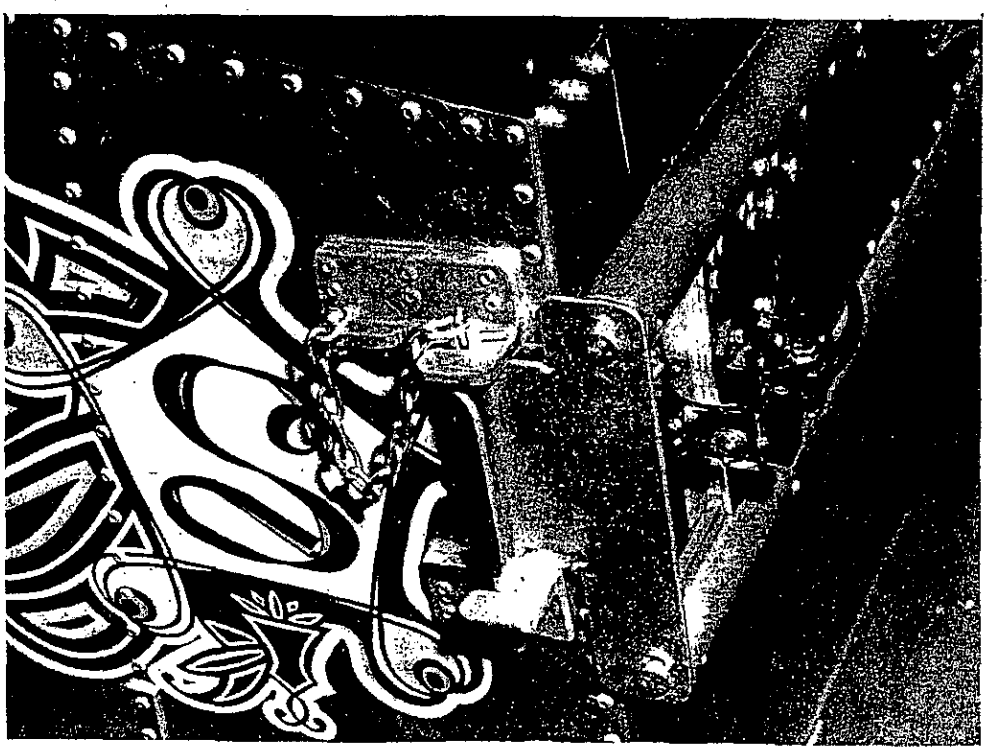

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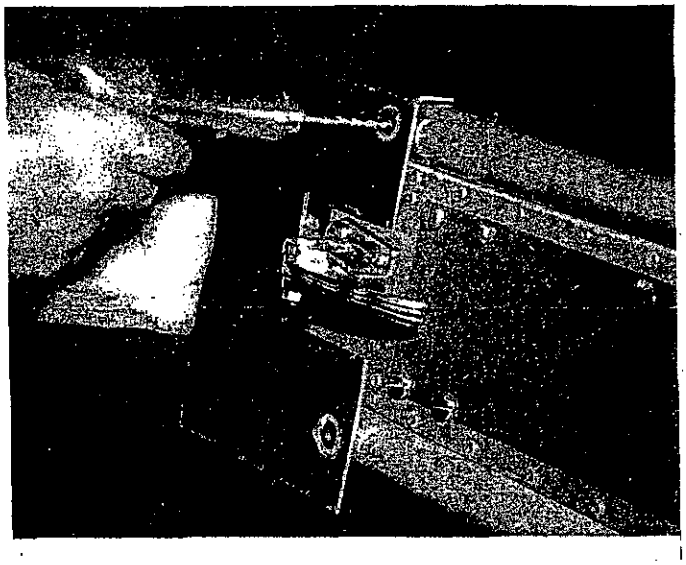

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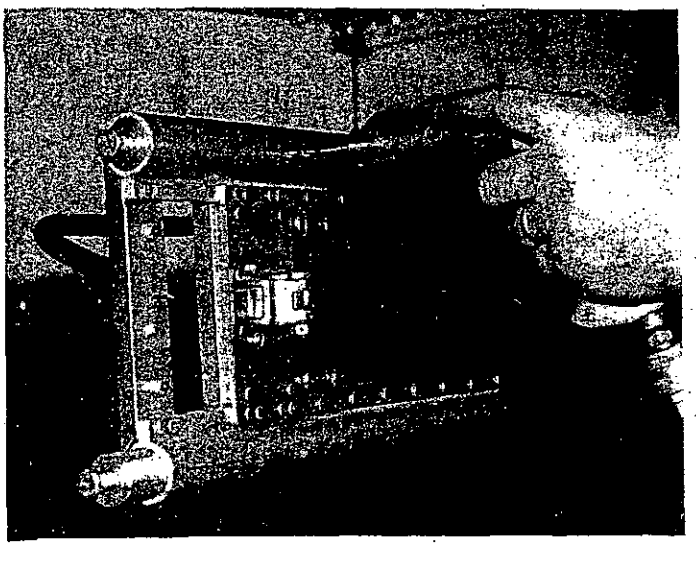

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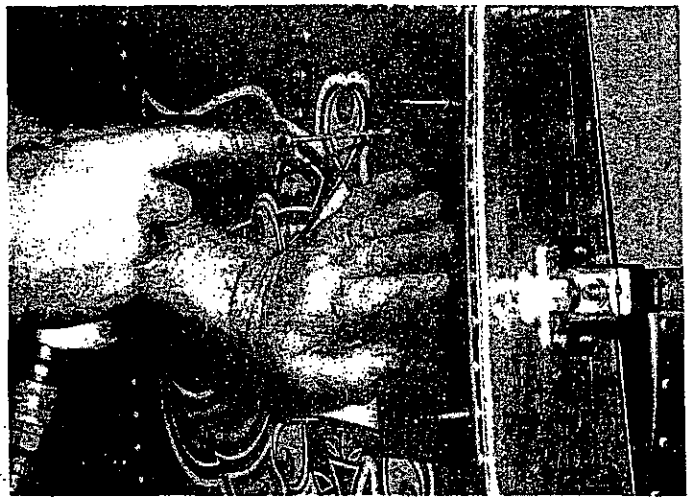

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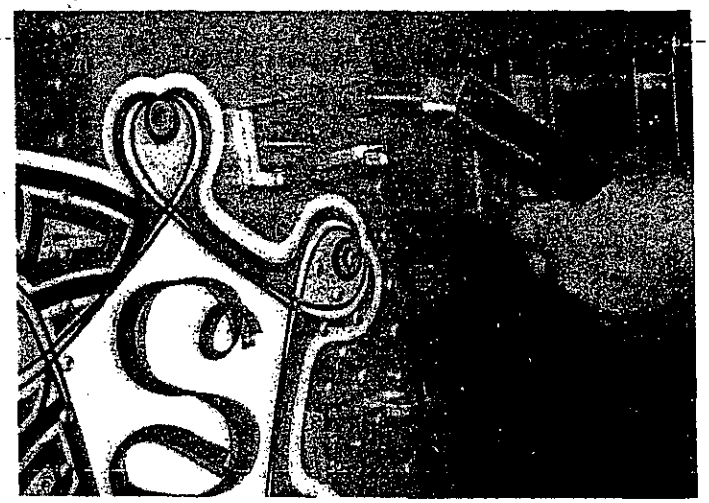

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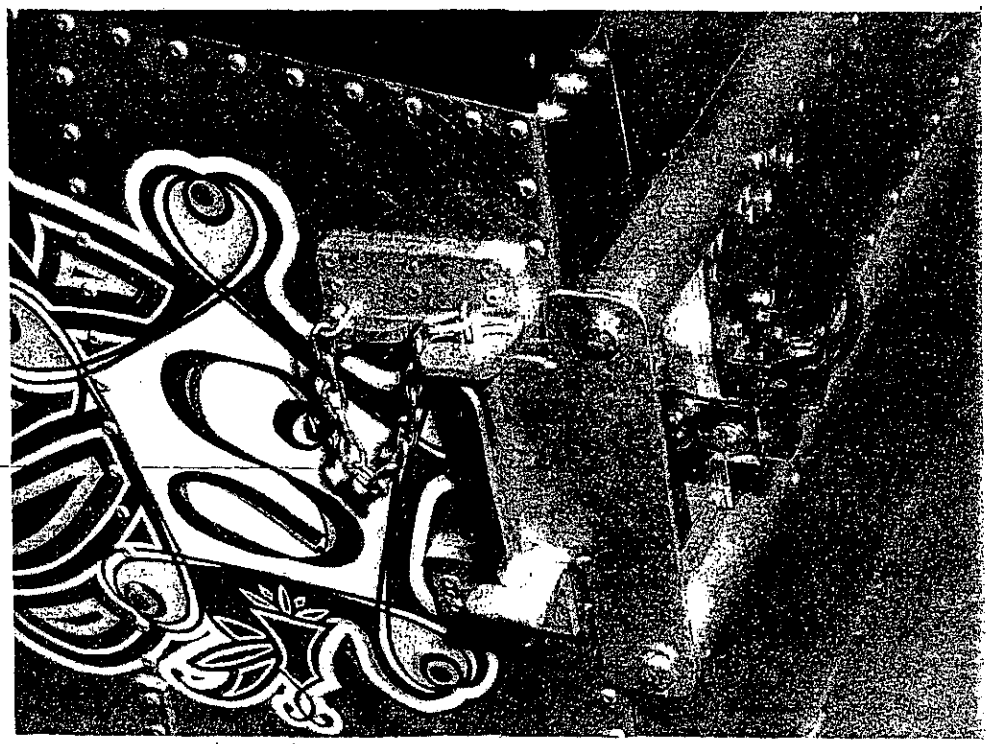

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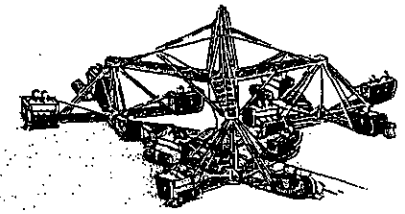
ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS

AREA CODE 217 PHONE 245-7145



Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS, 62650

August 15, 1975

RE: BIG ELI Scrambler ride, equipped with A/C gasoline motor power.

Dear Friend:

Of major concern to you and to us has long been the operator who overspeeds the Scrambler ride. Your operator may be doing this without your knowledge. We would certainly hope he is not doing it with your approval. Operating the Scrambler ride beyond recommended maximum speed can damage the equipment itself, and it can present circumstances that lead to passenger injury.

Even though the maximum operating speed of the gasoline motor unit is pre-set before the equipment leaves our factory, we do recognize that some operators find ways to by-pass this setting in order to operate the ride in excess of recommended capacities.

You should be interested in the facts that are outlined on the reverse side. The man who operates your Scrambler ride at excess speed is damaging your equipment; he is discouraging people from riding, or at least from riding the second time; and, in some cases, he is even injuring your customers. Many persons cannot take the excessive speed without getting bruises or even broken bones.

To avoid this overspeeding problem, some owners have replaced their gasoline motor with the electric motor unit. Others have been reluctant to do this because of the cost involved or because their gasoline unit is still serviceable. There are others who prefer the sound of the gasoline motor operating, feeling it provides "action advertisement" for the ride.

We are pleased to inform you that it is now possible to effectively limit the maximum operating speed of the gasoline motor unit - at very reasonable cost. The enclosed brochure will introduce you to an overspeed device that has been designed for this specific purpose. It measures the operating speed of the motor. If your operator cheats on the speed of the ride, with this equipment installed, the red warning light will come on and the gasoline motor will "shut down" until it comes back to recommended speed.

As you can see by the enclosed instructions, this is equipment that you can easily install. Your cost, f.o.b. our factory, is $325.00. We have these units in stock, available for prompt shipment following receipt of your firm order.

Very truly yours,
ELI BRIDGE COMPANY

Robert L. Garner

RLG/pc
Encl: 2

# W A R N I N G

The BIG ELI Scrambler ride should never be operated beyond the maximum recommended top speeds —

11.0 revolutions per minute of the center pole, when powered with gasoline engine;

11.4 revolutions per minute of the center pole, when powered with electric motor.

The following table will show what happens to the loads on the structural members, and the seats, when the speed is increased beyond the recommended maximums:

| Center Pole Speed (R.P.M.) | Per Cent of Overload | Approx. force against end of Seat with 600 lb. passenger load |
|---|---|---|
| 11.0 | .0% | 695 lbs. |
| 11.4 | 7.4% | 747 lbs. |
| 12.0 | 19.0% | 827 lbs. |
| 12.5 | 29.1% | 897 lbs. |
| 13.0 | 39.6% | 970 lbs. |
| 14.0 | 61.9% | 1,125 lbs. |
| 15.0 | 85.9% | 1,292 lbs. |
| 16.0 | 115.0% | 1,494 lbs. |

Your operator may tell you that it "is necessary" to operate at 12 or 14 or 16 r.p.m. in order to give the customers a "good" ride, and that "it doesn't hurt the equipment". DON'T BELIEVE HIM. Look at the above figures. At the recommended maximum speed of 11 r.p.m., three 200 lb. passengers will exert a force against the end of the seat of approximately 695 lbs. But at 16 r.p.m. these same three people are exerting a force twice as great, equal to having six 200 pound people in the seat.

It is obvious from these figures that going above the recommended maximum speeds can very quickly put excessive structural loads on the Scrambler ride's load carrying members, loads for which they were not designed. But of even greater importance, this is very hazardous to the passengers.

You would not allow your operator to load four, five, or six 200 lb. adults into each seat of the ride, even if he could manage to squeeze them in. You know this would overload the ride. You know this would be dangerous for the passengers. You would prevent this from happening.

Keep in mind that operating the ride at faster than recommended speeds ALSO overloads the ride, almost as though your operator was putting additional people into every seat.

It has been demonstrated that excessive speeds are not necessary to get good business with the Scrambler ride. One Scrambler ride reportedly carried over one million passengers in a single year, and it was operating at less than the maximum recommended speed.

# INSTALLATION OF OVERSPEED SWITCH FOR ALLIS-CHALMERS ENGINE

## I INTRODUCTION

The Scrambler Overspeed Switch is an electronic sensor that mounts on the Scrambler Power Unit. It receives speed information directly off the ignition system. When the engine is run above the recommended speed, the Overspeed Switch momentarily shuts down the engine and lights the warning lamp. The switch has been designed to fit all Allis-Chalmers Generator Equipped Power Units that retain their original equipment. When properly installed and maintained, the Overspeed Switch will insure operation of your Scrambler within recommended RPM. Any attempt to overspeed the Scrambler beyond its rated maximum centerpole speed of 11 RPM will cause the warning light to go on and the engine to slow to the recommended speed.

## II The following parts are needed for the installation:

1) one Overspeed Switch assembly with wiring harness (see Figure 1)
2) four 5/16 X 3/4"hex head bolts
3) four 5/16" Esna nuts
4) one lamp assembly with wire and sleeve (see Figure 2)
5) seven 5/32" pop rivets
6) three #8 plain washers
7) three 1/8" plastic wire clamps

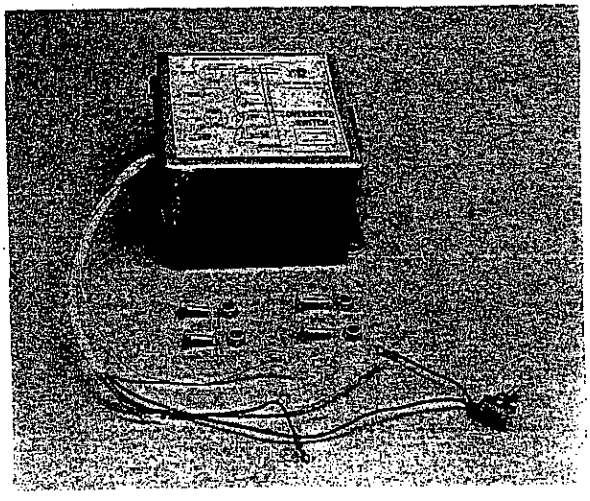


FIGURE ONE

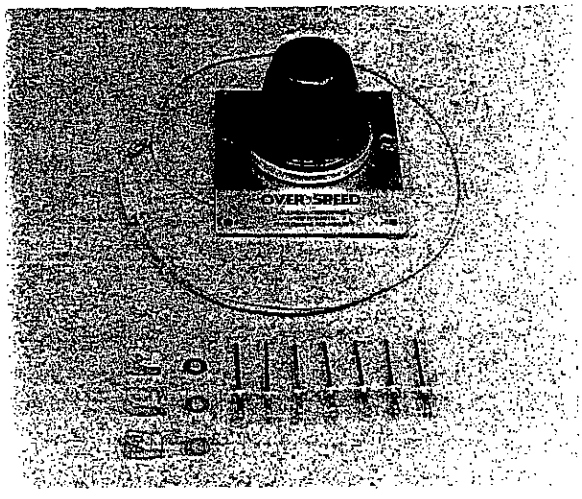



FIGURE TWO

## III MOUNTING THE BOX

1) Locate the box on the Power Unit as shown in Figure three, with the top and side of the flange flush with the upper corner of the angle beam. Mark the four holes. Also see Figure Nine.
2) Centerpunch the marks on the angle beam. Drill first with a small drill like 1/8, then redrill with a 3/8 size.
3) File the burrs from the holes.
4) Bolt on the box. The wiring harness should face the engine.

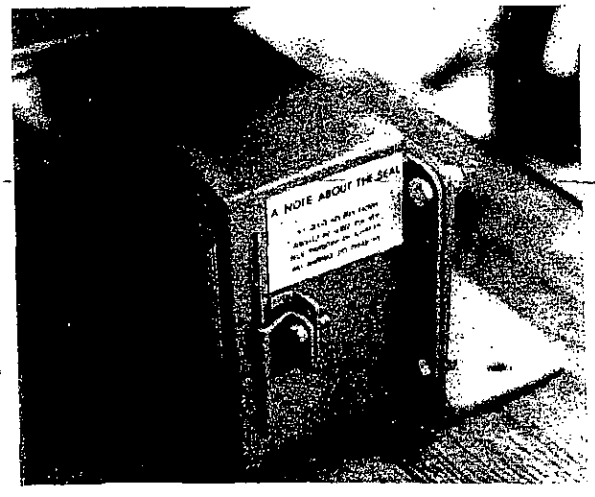



FIGURE THREE

## IV MOUNTING THE LAMP

1) Use the paper template as shown in Figure 4 to locate two of the five lamp mounting holes. Centerpunch one corner hole and the off-center hole. Drill the corner hole 5/32" and the off-center hole 3/8".

2) The red warning lamp assembly has a wire protruding. Thread this wire thru the 3/8 hole in the engine cowling. Insert a rivet in the drilled corner hole. The part of the lamp mounting plate that reads "OVERSPEED, maximum centerpole speed, eleven revolutions per minute" should face the brake lever side, see Figure 5.

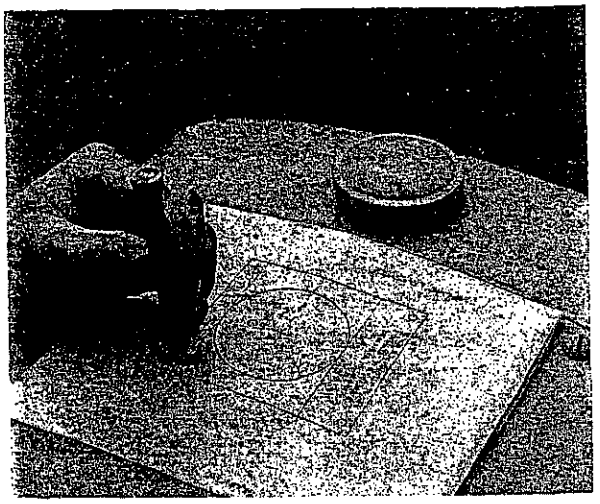


FIGURE FOUR

3) Drill out the remaining three corner holes using the lamp plate as a guide. Insert and set the four rivets.

4) Next, the yellow wire will be clamped in several places inside the hood to keep it away from the fanblades. Figure 6 shows the three locations of the clamps. An easy way to line up the holes is to drop a weighted string over the brake lever side of the hood. Lay it over the rivet that is 1-1/2" from the hood joint as shown. Pencil in this line down the side of the engine cover. Then, using the top and bottom hood bolts, locate the holes on the vertical pencil line using the dimensions from Figure 6. Centerpunch and drill the holes to 5/32".

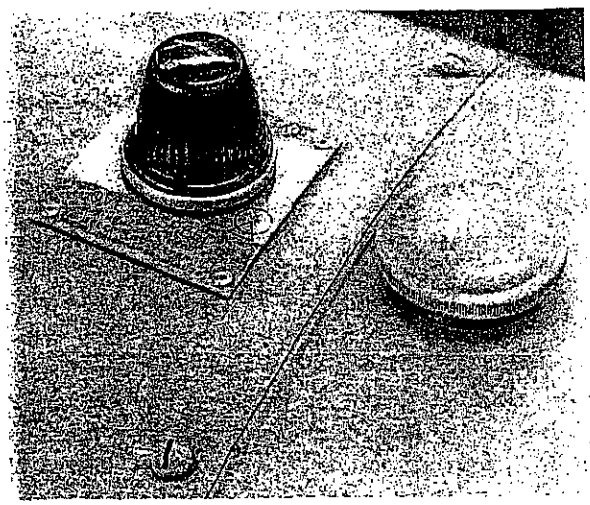


FIGURE FIVE

5) Slip one of the plastic wire clamps on the yellow wire so that the hole is to the left of the wire, refer to Figure 6. Position the clamp behind the top hole. Make sure the wire lays along the inside of the hood. Insert a rivet from the outside and a washer on the back of the clamp. Set the rivet.

6) Do the same for the middle rivet, making sure that the wire lays smoothly along the inside of the sheet metal. The wire is exposed between the middle and bottom clamps. This path keeps it straighter.

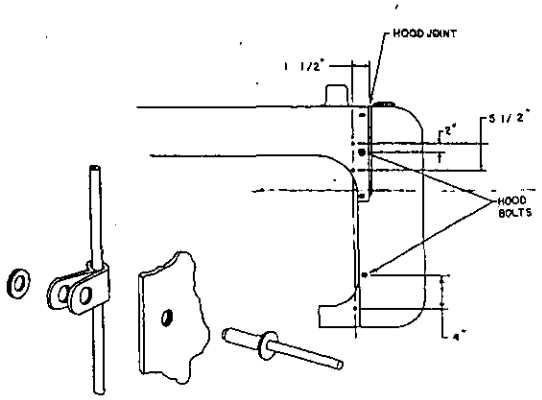



FIGURE SIX

7) Bring the yellow wire from the Overspeed Switch box up thru the small hole shown in Figure 7. Slip a clamp on it and rivet like the other two, at the bottom hole. The spade connector should be just above the clamp.
8) Connect the two yellow wires. Slip the insulating sleeve down over the joint. This joint permits the lamp to be unplugged for removal of the engine hood during servicing.

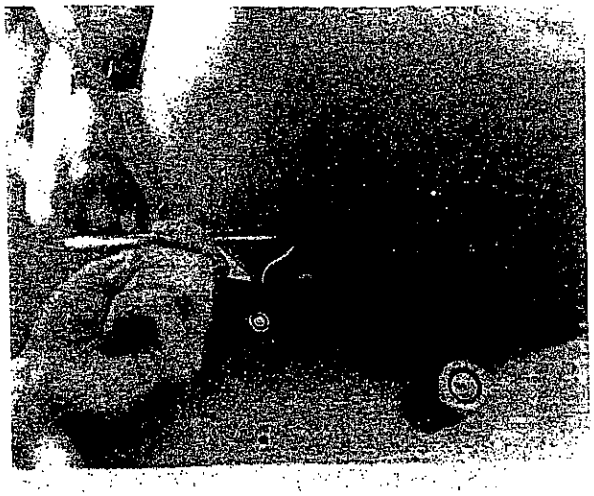


FIGURE SEVEN

## V CONNECTING THE WIRING HARNESS

1) Temporarily disconnect the battery for this last section.
2) Find the larger of the two holes to the right of the ammeter. Drill it out to 1/2".
3) Insert the toggle switch attached to the red wire thru the hole from the back. The ON/OFF plate should be on the front, with the knurled nut over it. OFF should be down. Make sure the switch is off. Figure 8 shows the installed toggle switch.
4) Connect the short red wire from the toggle switch to the battery negative on the ammeter. This is the terminal closest to the battery. Also refer to the diagram on the Overspeed Switch box.
5) Connect the white wire to the same side of the starter button that is connected to the starter solenoid.
6) Loosen the nut holding the keyswitch so that the switch can be rotated for better access. Connect the black wire to the keyswitch terminal.

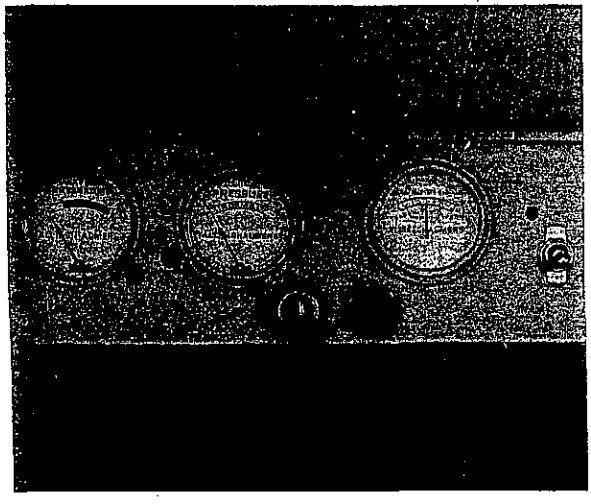


FIGURE EIGHT

7) Connect the green wire to one of the nuts on the temperature gage. This is a convenient grounding place.
8) Recheck all the wiring. All the connections need to be made for proper operation.
9) Reconnect the battery. The completed installation is shown in Figure 9.

## VI TESTING

1) With the engine off, turn on the toggle switch. The warning lamp should come on.
2) Turn on the keyswitch and press the starter as you would normally do.
3) The engine should start and the warning lamp should go out. This is normal running. Dimness in the lamp indicates low battery. The engine won't start without full battery voltage.
4) To test overspeed, push the governor linkage on the instrument panel side of the engine. The warning lamp should light at overspeed, and the engine will stop firing. Releasing the linkage will return the engine to normal running. Continuous holding of the linkage will cause backfiring as the Overspeed Switch cuts in and

## VII OPERATION

The only change in operating procedure is in turning on the toggle switch before starting the engine. This applies power to the Overspeed Switch. The engine will not start or run without it. The toggle switch should be turned off when the engine is shut down. If it is not, the warning lamp will light as a reminder.

If you have any questions, call ELI BRIDGE COMPANY at (217) 245-7145.

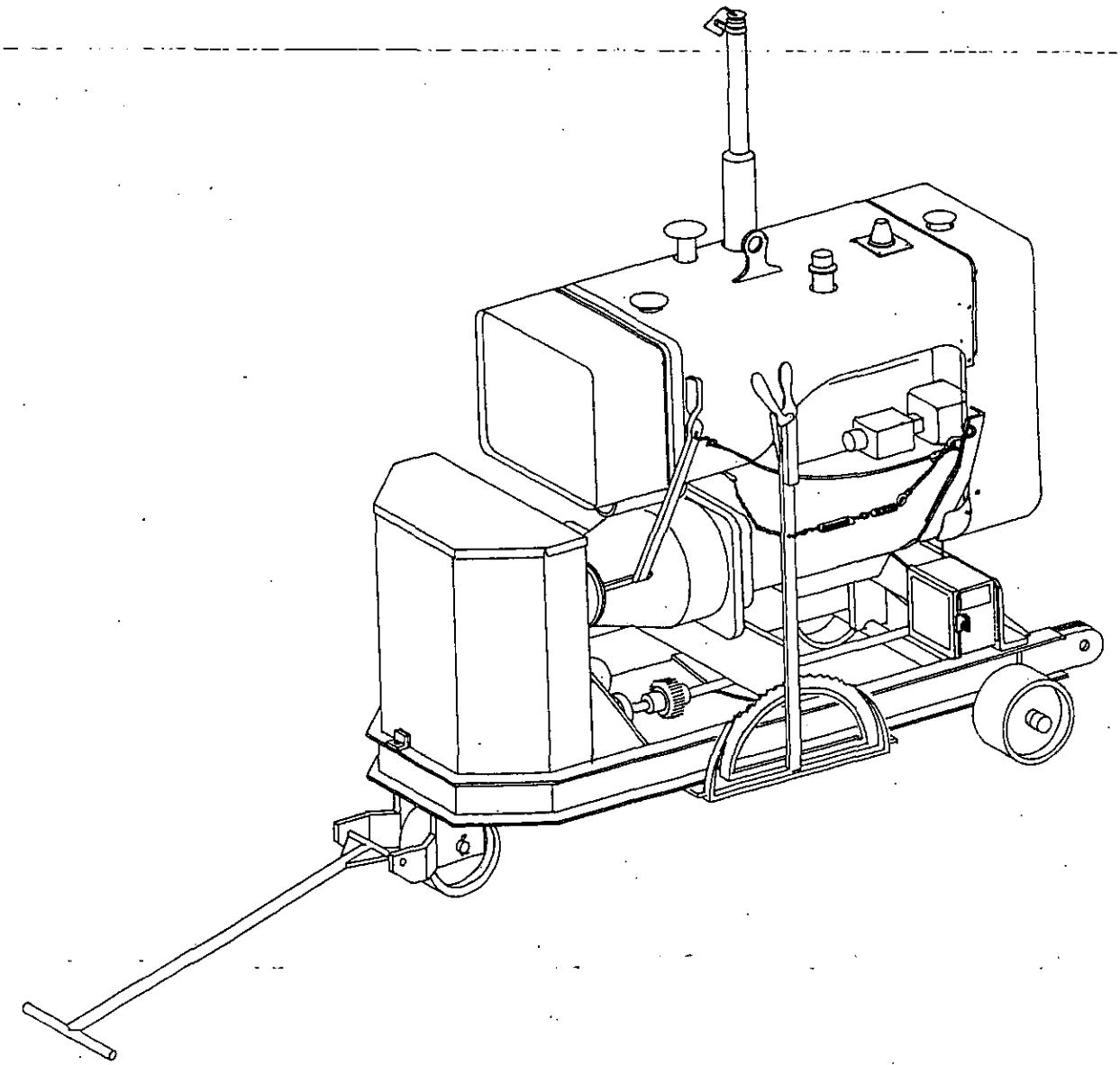
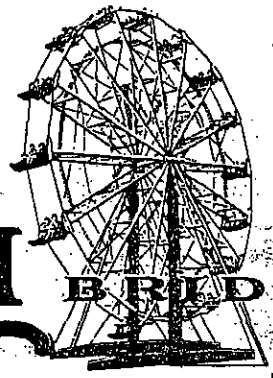


FIGURE NINE

OVERSPEED SWITCH MOUNTED ON ALLIS-CHALMERS POWER UNIT

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



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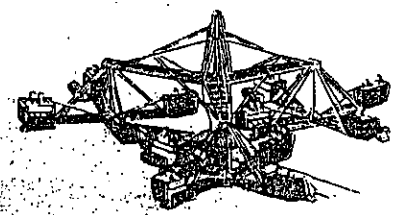


Scrambler
BIG ELI
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS, 62650

July 10, 1976

Dear Scrambler ride Owner:

RE: Removable Slip Clutch & Pinion Assembly
for BIG ELI Scrambler ride.

Beginning with BIG ELI Scrambler ride Serial No. 92 (1959 model) all new Scrambler rides have been equipped with a Removable Slip Clutch and Pinion Assembly in the bottom sweeps. This has been a major improvement to the ride, permitting the clutch assembly to be removed from the sweep for easier replacement of the clutch disc or other clutch maintenance.

The removable slip clutch assembly was designed for long life and easier maintenance and can, with the slight modification that is necessary, be fitted to older model Scrambler rides. This is a modification that can be made "in the field", and many owners of earlier models have already made this conversion. If your Scrambler ride has not already been so modified then this letter is MOST IMPORTANT TO YOU.

Although the old style slip clutch assembly and drive shafts were discontinued as standard equipment seventeen (17) years ago we have, as a service to owners of these older model rides, continued to make repair parts for this obsolete clutch equipment available. We will continue to furnish clutch discs and other parts as long as our current limited stock will permit. However, circumstances beyond our resonable control make it necessary to inform owners whose rides were originally equipped with the older style clutches that certain castings and other parts will no longer be available.

It is therefore recommended, if you have not already done so, that you convert your Scrambler ride to the new style removable slip clutch assemblies at this time. You will find the items necessary for this conversion listed on page 16 of your current Scrambler Ride Parts List, as follows:

| | |
|---|---|
| 3 #24A1 000 Long Drive Shaft Group @ $377.75 each ..... | $1,133.25 |
| 3 #RC-6018 Coupling Chain @ $6.70 each ..... | 20.10 |
| 3 #24A3 000 Removable Slip Clutch & Pinion Assy. @ $526.40 ea... | 1,579.20 |
| Total Cash Price, f.o.b. our factory ..... | $2,732.55 |

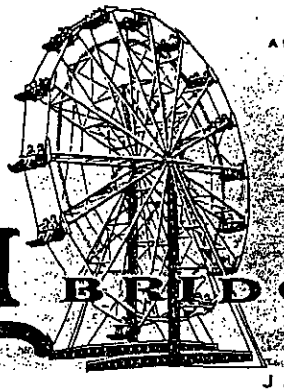
We encourage that you purchase and install this equipment on your Scrambler ride at your very earliest convenience.

Very truly yours,
ELI BRIDGE COMPANY

Parts Department

RLG/pc

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



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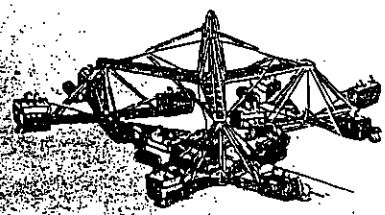


Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS, 62650

August 12, 1976

# URGENT WARNING

Dear Scrambler Ride Owner:

On June 2, 1976, it was reported to us that a Unit Pole had fractured on a Scrambler ride, just above the top end of the gusset extension plates. This was the result of being dropped on blacktop surface. It and the other two Unit Poles from that ride were immediately taken by Eli Bridge Company to a consulting engineering service in Urbana, Illinois, for testing and evaluation. We have not yet received the results of this evaluation.

Yesterday we were advised by a state ride inspector that a hairline crack was discovered in the Unit Pole of a 1961 model BIG ELI Scrambler ride, in the same area where the Unit Pole mentioned above had fractured. This is the first report since 1968 of a Unit Pole crack apparently resulting from normal operation.

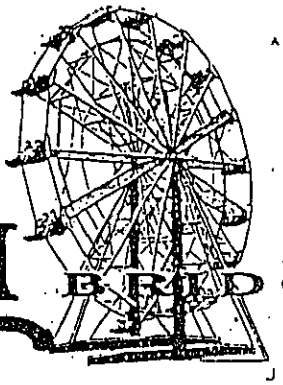
As yet we do not know why a crack should have occurred, nor a suitable repair. We will not be able to approach these subjects until we receive the results and recommendations from the testing currently being conducted in Urbana.

In the mean time, you need to be aware of the possibility of a Unit Pole cracking or fracturing, and to remind you of the extreme hazard of a Unit Pole fracture. If the ride is being operated at the time of a complete fracture of the Unit Pole, this could allow the bottom sweep and the cluster of four (4) seats to drop suddenly to the ground with most serious results to the ride and passengers.

Your Unit Poles should be inspected very carefully every day for such cracks. If any cracks are found, even hairline cracks, the Unit Pole should be taken out of service immediately. DO NOT operate any Unit Pole that is cracked or that you suspect may be cracked. You should also keep in mind that if one of the Unit Poles is cracked, the other two have been operated under similar conditions.

For a limited period, we will make replacement Unit Poles available, in sets of 3, at half price. This is with the understanding that the old Pole, being replaced, would be returned to us (prepaid) for our inspection. Cash Price of one (1) Unit Pole (without gear) is $655.00 fob our factory. Under this limited offer, all 3 Unit Poles (without gears) can be purchased for $982.50 f. o. b. our factory, plus applicable tax--if any.

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



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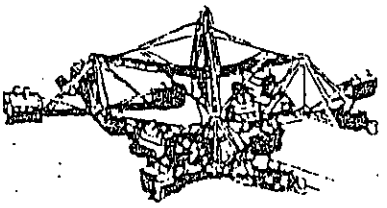


Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS 62650

May 19, 1977

RE: Scrambler Ride Unit Poles

Dear Scrambler Ride Owner:

Last August 12th you were sent a letter warning about possible cracks in the Unit Poles of the BIG ELI Scrambler ride. We informed you that two such cases had been reported to us, that those Unit Poles had been secured and sent away for testing, and that we would be in contact with you again as soon as test results were received. At long last we have received and evaluated the report from the consulting firm in Urbana, Illinois.

A copy of "Conclusion Based on Examinations" is enclosed. The entire report is available for examination at our office.

As indicated by the enclosed, the hairline crack reported in our August 12th letter was not confirmed by this examination. So, the only crack/fracture that we definitely know about is the one that occurred on June 2, 1976, as the result of a Unit Pole being dropped from the back of a semi-trailer onto a hard ground surface. Although our letter of last August was sent to all owners of BIG ELI Scrambler rides, no further reports of cracked or fractured Unit Poles have been received.

You will notice that the opinion expressed by the enclosed indicates that the failure that did occur on June 2, 1976 was "the result of the application of a dynamic load when the unit was dropped and impacted the ground surface", not a failure resulting from normal operation. So, based on the examinations performed at Urbana, Illinois, and the lack of any substantiating reports of cracks on any other Scrambler ride, it would seem there appears to be no reason for further concern.

HOWEVER, the full report does include two recommendations which need to be specifically mentioned at this time:

(1) The report does recognize that the material now being used in the construction of Unit Poles is superior to that which was used prior to 1969, with the recommendation that, "This practice should be continued and owners should be encouraged to replace the (unit) poles on their (older) model equipment if they have any reservations."

(2) With reference to the older style unit poles, the report further recommends, "Most importantly, extreme care should be exercised in loading, unloading, assembly and disassembly of the unit (pole). Impact loads, unnecessary and potentially harmful distortions, mishandling or other abuses of the poles must be avoided."

Therefore, for those of you who have Scrambler rides that are 1968 model or older (Serial Nos. 1 - 325) we do recommend that you continue to make regular and close examination of your Unit Poles, giving special attention to the area at and just above the top weld of the gusset plates.

The Unit Poles of these older model rides utilize three-inch black iron pipe (ASTM A120), whereas we started using drawn over mandrel tubing (ASTM A36) in this application in 1969, beginning with Scrambler ride Serial No. 326-69. Our previous testing, and the current test report, recommends the use of drawn over mandrel tubing in this application in preference to the black iron pipe.

So our recommendation to you, based on the information available to us at this time, is as follows:

(a) If your Scrambler ride is Serial No. 326-69 or newer, your ride is already equipped with the drawn over mandrel tubing type Unit Poles. Except as normal wear or damage might dictate, we do not recommend replacement at this time.

(b) For those of you who have older model rides, Serial No. 325-68 or older, we do recommend that you up-date your Scrambler ride by this replacement because it is felt the material in current production Unit Poles is superior to that previously used. In view of this recommendation we shall, for a limited period, continue to offer trade-in and special price offer quoted in our letter of August 12, 1976. For those of you who no longer have your copy of that letter, the offer was as follows:

> "We will make replacement Unit Poles available, in sets of 3, at the special price of all 3 poles (without gears) of $982.50 f.o.b. our factory, plus applicable tax - if any. This offer is with the understanding that the old Poles, being replaced, will be returned to us (freight prepaid) promptly.
>
> At today's pricing, this gives you the opportunity to purchase all three Unit Poles for approximately the price of one. As this offer represents a money-losing price condition for us, we reserve the right to modify and/or terminate this offer, without prior notice, at some reasonable future time.

Although the comments of this letter are intended to reasonably answer questior that may have been raised by our letter of August 12, 1976, please do not hesitate to let us hear from you if you have any questions that remain.

Very truly yours,

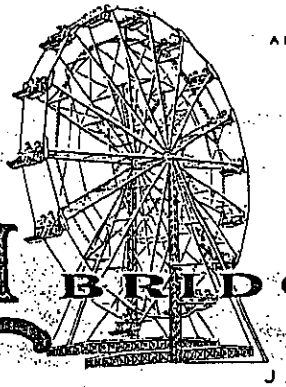
ELI BRIDGE COMPANY

Robert L. Garner

Robert L. Garner

RLG/pc
Encl: 1

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



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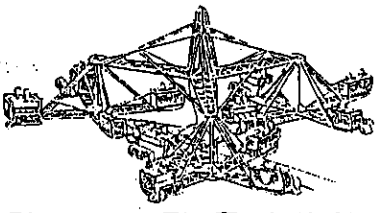


Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS, 62650

8 June 1979

TO WHOM IT MAY CONCERN:

There have been brought to our attention perhaps three instances where the socket head shoulder screws holding the 138 tooth internal gear to the bottom side of the rotating base have loosened. In one case, all 12 shoulder screws backed out, the gear came completely loose, and dropped down. Since more than 450 Scramblers are in service, this has been a problem for no more than about 1% of them, so far as we know. We do not believe this is a high risk situation, but after first learning of these screws loosening, we have drilled the heads of the shoulder screws and secured them to each other in pairs with safety wire on all succeeding Scramblers, beginning with Serial No. 402 delivered in 1973.

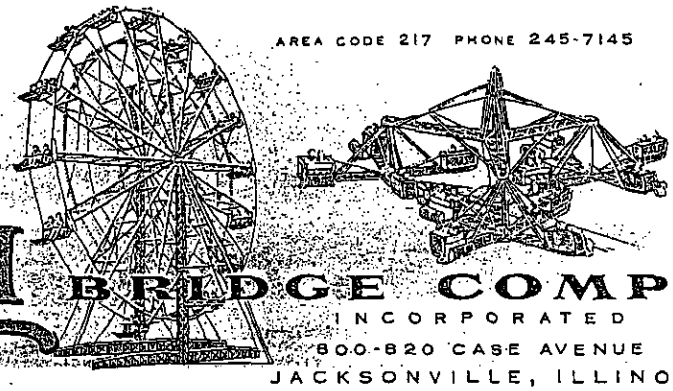
We do recommend that where a customer finds ANY ONE of the screws loose, that the screws be removed one at a time, drilled with a .125" diameter hole through the head of the screw, .141" (9/64") down from the top of the head, be replaced and then safety wired in pairs of shoulder screws using three feet of 19 gage stove pipe wire. The safety wire should be installed in such a way that it will tighten if either, or both, of the screws start to back out.

We have never used safety wire on the bolts holding the six ball bearing pillow blocks supporting the three rotating base drive shafts. While we have no objection to this, it has not been our recommendation.

William C. Deem

William C. Deem
Chief Engineer
ELI BRIDGE COMPANY

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800-820 CASE AVENUE
JACKSONVILLE, ILLINOIS, 62650

AREA CODE 217 PHONE 245-7145

19 Mar 80

RE: Std. Canvas Seat Covers

Dear SCRAMBLER Ride Owner:

In our endeavor to hold pricing down, we are trying lighter weight material in our standard seat covers than you are accustomed to. We are currently looking for alternative materials for durability at a reasonable price.

As an aid to us in our search, please let us know how these new covers hold up in your operation as compared to the older heavier ones.

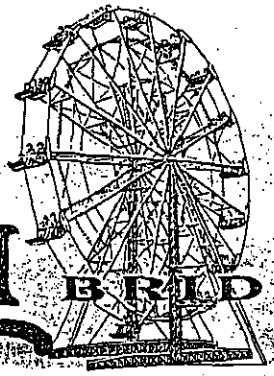
Thank you.

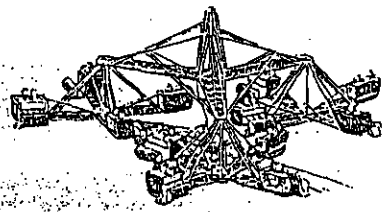
Very truly yours,

ELI BRIDGE COMPANY
Parts Department

WAS

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS





Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800 CASE AVENUE
JACKSONVILLE, ILLINOIS 62650-1493

8 October 1991

Subject: CRACKS IN SCRAMBLER SEATS

A. Inside, outside, and back skins

1. These skins are made of 2024 Alclad aluminum.

2. Repairs to the skins cannot be made by welding, and is not authorized.

3. Most damaged areas can be repaired using pull-through rivets and standard repair parts with instructions available from Eli Bridge Company.

B. Front, middle, and back ribs

1. These ribs are made of 6061-T6 aluminum.

2. The major strength of each rib is developed by the rib flanges to which the inside and outside skins are riveted. The primary purpose of the face of the rib is to separate and support the flanges.

3. This type of aluminum is weldable.

4. Unless welding achieves full penetration along the face of the rib as well as in both flanges the full strength of the rib cannot be developed.

5. Our experience has been that any field welding of these ribs has not always achieved full penetration, and in some cases where the flanges were cracked through, there was no welding of the flanges.

6. Cracked or broken ribs must be replaced. Because the ribs are directly tied into the support structure, fasteners other than pull-through rivets are used in the structural connections. We believe that field repairs to Scrambler seat ribs should not be attempted, and that seats showing significant cracking in the seat ribs should be returned to the factory for repairs which will return the seat to its fully functional original strength.

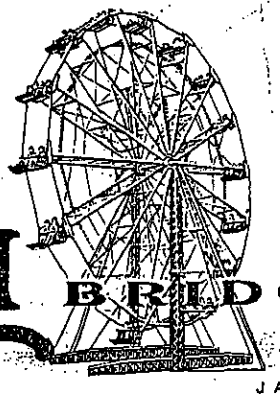
7. Because of the demonstrated uncertainty of the quality of field welds on Scrambler seat ribs, and after reviewing design criteria, it is the position of Eli Bridge Company that we do not authorize, recommend, encourage, or condone the use of welding for repair of cracked Scrambler seat ribs.

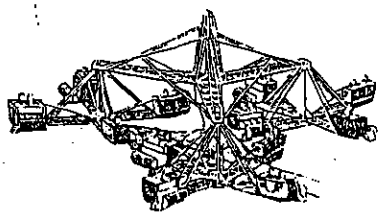
William C. Deem

William C. Deem, Engineer
ELI BRIDGE COMPANY

PHONES: 800-274-0211 • 217-245-7145 • FAX 217-479-0103

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS





Scrambler
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ELI BRIDGE COMPANY
INCORPORATED
800 CASE AVENUE
JACKSONVILLE, ILLINOIS 62650-1493

Toll-free WATS line (800) 274-0211 is available in all 50 states
during normal business hours, 8 A.M. to 5 P.M., Monday through Friday, except for holidays.

# Scrambler® Bulletin No. 8

## Applies to ALL Serial Numbers

**DATE: March 15, 1993**

**UBJECT: Weld cracks at the bottom of the center pole.**

The method that has always been used to assemble the stationary center pole to the stationary base is as follows:

1. The bottom end of the stationary center pole is carefully machined to size.

2. The stationary base top and bottom 1/2" plates are line bored slightly smaller than the outside diameter of that part of the stationary center pole which fits inside the stationary base.

3. The stationary center pole bottom end is cooled with dry ice until the outside diameter has shrunk down smaller than the inside diameter of the holes bored in the stationary base.

4. The stationary center pole is then slipped into the stationary base all the way, and allowed to warm up to room temperature. At room temperature, the stationary center pole is firmly locked into the stationary base.

5. The entire assembly is then turned upside down, and the very bottom end of the stationary base is completely welded to the bottom plate of the stationary base.

Our first indication of any problem with this weld cracking occurred on a Scrambler which had been in service for nine years. Since that time there have been several others reported to us, but they still represent a very small percentage of the Scramblers in service. In each case the Scrambler had been in use for a number of years.

In analyzing the forces acting on this weld connecting the stationary center pole to the stationary base, there were two factors involved:

A. The weld was located between two very rigid structures. The pole was a 10 inch diameter tube with a 1 inch wall thickness, and the bottom plate of the stationary base was 1/2 inch thick and 60 inches wide. The molten weld metal, in cooling, wanted to shrink but could not because of the rigid parts it was connecting. This resulted in built-in shrinkage stresses that over time tend to relieve themselves by plastic deformation or by cracking.

B. The rotating structure was held on the stationary center pole with a tapered roller bearing at the top and bottom of the stationary center pole. It is the nature of tapered roller bearings, when used in pairs, that the normal radial loads produce thrust loads that want to push the two bearings away from each other. In the Scrambler application, the bottom bearing was located against the top of the stationary base. The top bearing pushed against a plate bolted to the very top of the stationary center pole. This thrust against this top plate produced a force acting to pull the stationary center pole out of the stationary base, and this was resisted by the interference fit between the stationary center pole and where it fit inside the stationary base, plus the weld on the very bottom of the pole.

These two factors appear to be responsible for any weld cracking which has been reported to us.

If there is any uprooting of the stationary center pole out of the stationary base, this allows separation between the two tapered roller bearings, and this then allows the top of the center pole to sway. This is usually the sign that a problem has developed. Swaying of the center pole will then allow the unit pole to dip closer to the ground until eventually it would strike the drive unit if the problem is not corrected.

Occasionally, the top hole of the stationary base has been found to be hammered out so that the pole is no longer tight in the hole, but our experience is that this has never happened until after the weld on the bottom has cracked out.

HOW TO CHECK TO SEE IF THERE ARE ANY CRACKS IN THIS WELD THAT CONNECTS THE STATIONARY CENTER POLE TO THE BOTTOM PLATE OF THE STATIONARY BASE

1. On a portable ground-model Scrambler, look underneath when the base section is on the ramp coming out of the trailer. Clean off the weld area thoroughly, and wire brush it if necessary to see the weld area clearly.

2. On a TMS Scrambler, the bottom of the base section can always be observed when the front end of the trailer is raised and connected to the tractor. Here again clean off the weld area thoroughly to check for cracks.

3. Inspecting a Scrambler permanently located in a park will be most difficult, since there would normally be no time when this part of the base section exposed to view. Somehow it is going to be necessary to make this inspection, and this may require dismantling the Scrambler and lifting or turning the base section so the bottom side can be viewed.

WHAT TO DO IF YOU FIND CRACKS

1. Measure the length of any crack and determine the location of each.

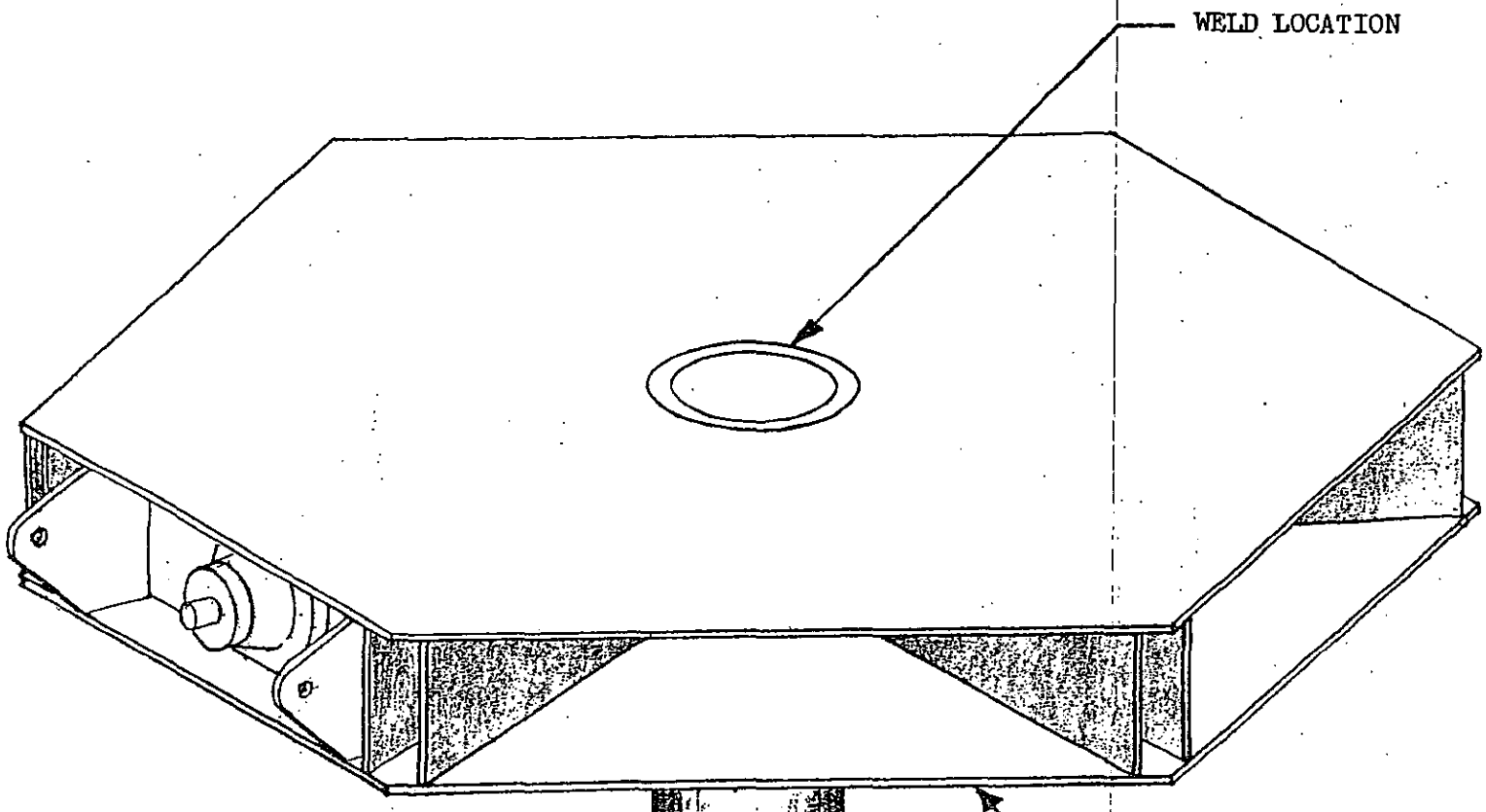
2. Contact Eli Bridge Company, and describe any cracks and where they are located.

3. Depending upon the nature of the problem, we will recommend a repair procedure. Where there is severe cracking resulting in weaving of the center pole, then it will be recommended that the entire base section (rotating and stationary base) be returned to the factory for rebuilding. In our established procedure, the entire unit is disassembled, beat out holes in the stationary base will be re-welded and re-bored to original dimensions, and the stationary center pole is built up and re-machined to original dimensions.

THIS INSPECTION IS CONSIDERED MANDATORY ON ALL SCRAMBLERS AND TMS SCRAMBLERS TEN YEARS OR MORE OLD.

ELI BRIDGE COMPANY

Lee A. Sullivan
Chairman of the Board




BOTTOM VIEW

ELI BRIDGE CO
JACKSONVILLE, IL 62650

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES

DECIMAL PLMS

ANGULAR PLMS

SCALE

ORIGINAL EQUIPMENT

TITLE

WELD INSPECTION ON GROUND MODEL SCRAMBLER AND TMS SCRAMBLER

THRU

DATE

DES

DWN

CHK

APPR

JOB

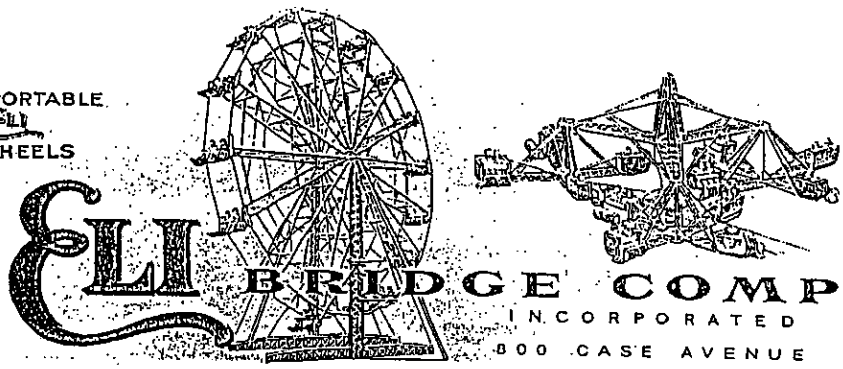
FILE

BY | CHD | DATE

REVISIONS

INDEX NO. | ASSEM NUMBER OF PARTS | FILE NUMBER | DESCRIPTION

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800 CASE AVENUE
JACKSONVILLE, ILLINOIS 62650-1493

# RE-INSPECTION OF THE SCRAMBLER CENTER POLE

With regard to Scrambler Bulletin No. 8, we believe that it would be reasonable to re-inspect the Scrambler center pole according to the following schedule:

A. If it has been inspected and no crack has been found, then it should be re-inspected five years from that inspection.

B. If a crack has been found and the crack extends no more than 1/3 of the way around, and it is then grooved out and re-welded by a certified welder, then it should be re-inspected in five years.

C. If the center pole has been returned to the factory for repair, then we feel that re-inspection should not be necessary for 10 years from the date of the repair.

Based on our experience with the Scrambler we believe that these are conservative procedures. We have tried to keep the inspections as far apart as we believe to be prudent, while at the same time keeping them as close together as necessary to give you the protection you need.

William C. Deem

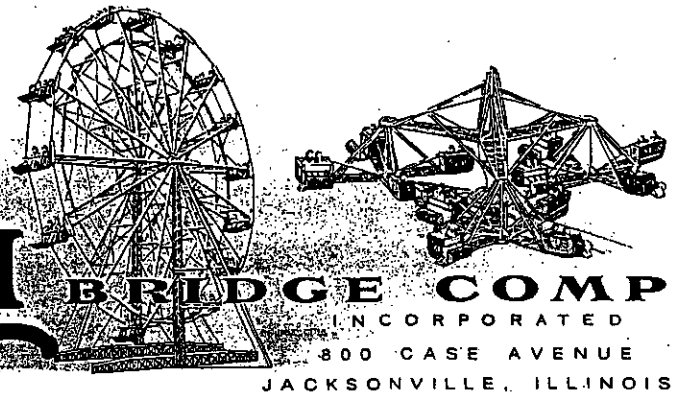
William C. Deem, P.E.

ELI BRIDGE COMPANY

30 March 1994

PHONES: 800-274-0211 • 217-245-7145 • FAX 217-479-0103

ALL STEEL PORTABLE
BIG ELI
FERRIS WHEELS



Scrambler
ELI POWER UNITS

ELI BRIDGE COMPANY
INCORPORATED
800 CASE AVENUE
JACKSONVILLE, ILLINOIS 62650-1493

Toll-free WATS line (800) 274-0211 is available in all 50 states
during normal business hours, 8 A.M. to 5 P.M., Monday through Friday, except holidays.

# BIG ELI Scrambler® Bulletin No. 9

## Applies to ALL Serial Numbers

## DATE: November 16, 1994

## JBJECT: Scrambler® Seat Fiberglass Inserts

Fiberglass seat inserts are being manufactured and sold to owners of Big Eli® Scramblers®. These inserts are not manufactured by Eli Bridge Company. In our testing and many years of working with customers regarding their Big Eli® Scramblers®, we believe we have developed a seat design that has stood the test of time. Eli Bridge Company does not condone nor authorize the use of these fiberglass seat inserts on Big Eli® Scramblers® and believes that all who are using them ought to be warned not to use them and to promptly replace any in use with a seat cushion design meeting Eli Bridge Standards.

Very early in the history of the Scrambler® use, a Scrambler® owner suggested that we raise the front edge of the seat to provide a better feeling of security for the passengers. We investigated and found this to be a valuable improvement, it was immediately incorporated into our design, and we have continued to use this feature throughout the 39-year history of the Scrambler®.

The seat cushion we are currently supplying is 3-3/16 inches high on the back side, and the highest part of the seat cushion is 6-1/2 inches high on the front edge, measuring back from the rounded front edge of the cushion 1-7/8 inches from the front vertical surface of the seat cushion.

In the case of the fiberglass shells, they do not incorporate this raised front edge. Our investigation of these fiberglass shells leads us to conclude that they lower the security of the passengers.

Therefore, it is mandatory that the use of these fiberglass seat inserts in Big Eli® Scrambler® be immediately discontinued.

Lee Sullivan

Chairman of the Board
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# SAFETY ALERT

**Ride Manufacturer:** Eli Bridge Company **Affected Production Dates**: All **Affected Serial Nos**: All
**Ride Names**: BIG ELI Scramblers®, especially those powered by Gasoline Engines

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**Abstract of Issue**: Scramblers® were originally run with Allis Chalmers Gasoline Engines. At the point where Eli Bridge Company found out that many owners were disconnecting the governors and speeding the Scramblers® over the recommended maximum 11 rpms, all owners were notified that this was not to be done because of the danger involved. More recently, electric motors have been placed in service on Scramblers®. The maximum rpms on electric motor-powered Scramblers® is 11.4 rpms.

When the Scrambler's® speed is faster than the recommended maximum, the G-forces increase dramatically compared to the rpms. This not only puts the patrons' health in danger, but causes greater stresses to the aluminum seats which could cause a catastrophic failure during a ride. Aluminum, by its very nature has a fatigue life and once the fatigue starts, ultimate failure will be the result. Overspeeding exceeds the design parameters of the Scrambler® parts and structure, but the seats are the most vulnerable. (For more information refer to page J-1 of your Manual for *Erecting, Operating and Servicing the Big Eli Scrambler®*.)

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**Reason For Release:** Many Scramblers® have been operating for up to 50 years or more. Even though owners with gasoline engines were warned years ago against over speeding, we have received information indicating that there are still some in operation doing this. Although we have not been made aware of any electric motors running Scrambler® over 11.4 rpms, this bulletin serves notice to all Scrambler owners that exceeding the recommended rpm's should not be tolerated. Because no two Scramblers® have had the same number of cycles at the same rpms or with the same loads, there is no way to accurately predict when the aluminum will fail as a general guideline. But seats on Scramblers®, which have consistently exceeded the recommended speed, are considered to be at greatest risk.

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**Actions to be taken**:

1) Check the RPM level at which your Scrambler® is being run. If it is being run over 11 rpms for gasoline or 11.4 rpms for electric, it should immediately be shut down and modified to prevent this from happening.
2) If the Scrambler® has been run at speeds over the 11 rpms for gasoline or 11.4 rpms for electric, regularly, the seats should be replaced immediately.
3) All Scramblers®, especially those found to be exceeding the recommended rpm's, should be carefully checked for cracks and connection wear exceeding tolerances.

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# SAFETY ALERT

**Ride Manufacturer:** Eli Bridge Company **Affected Production Dates**: All **Affected Serial Nos**: All
**Ride Names**: Seats on the Scrambler®, Trailer-Mounted Scrambler (TMS), Retro-Fitted Scrambler (RS)

**Abstract of Issue**: The Seats on a BIG ELI SCRAMBLER®, TMS®, or RS (28' Trailer-Mounted SCRAMBLER®) are designed for a passenger who remains properly seated, to be able to enjoy the ride without being ejected by the forces developed by the motion of the ride. "Properly seated" means that the passenger must sit on the seat with their back against the seat back, their bottom on the seat cushion, their legs in the forward position and their feet, if they reach, on the floor. The "lapbar" was designed and installed in Scrambler seats to help remind and restrain passengers to stay in the seated position during the ride. Seat belts have also been available for Scrambler seats for many years and a number of operations use them. For the past six or seven years Eli Bridge Company has recommended "No Single Riders" in Scrambler seats, and "unless seat belts have been installed" has been added after customers who use them report improved rider behavior with seat belts.

**Reason For Release:** An accident occurred where a young girl over the 48" minimum height requirement, was riding alone in a Scrambler seat in a building where it has not been determined whether the operator could see the passengers at all times. The girl had a friend riding in another seat and even though the seat had the warning about remaining seated, she chose to turn around, get up and wave to her friend during the ride. Because she had gotten her center of gravity over the top of the seat, the accelerations of the ride forced her out of the seat into the path of the moving ride. The tragic result was death.

**Actions to be taken:**

1) Be sure your Scrambler operators can see the passengers at all times before, during and after the ride.
2) Have all operators read the complete OPERATION section of your Scrambler Manual. In part, it says: "Passengers must not be allowed to misbehave. Vigilance on the part of the operator can prevent accidents. The operator must watch the ride at all times, and refuse rides to any person who, in his opinion, might be in danger. The operator must not become careless, because the Scrambler is a fast ride which involves high accelerations and decelerations, and any person leaving his seat when the ride is in motion is almost certain to be severely injured."
3) Stop the Scrambler immediately if a patron(s) misbehaves and remove the patron(s) from the ride. Misbehavior includes but is not limited to: a) Turning around (sideways or backwards) in the seat, b) kneeling in the seat, c) standing up in the seat, d) putting feet or legs outside the seat or on top of the footbottom, e) Any movement in the seat that allows the passenger's back or bottom to break contact with the seat back and the bottom cushion of the seat while the ride is operating.
4) Do not let that patron on the ride again if the patron leaves the "Properly Seated" position during the ride. The operator must adhere to a Zero Tolerance Policy (No second warnings/immediate removal of misbehaving riders) because they are a danger to themselves and may be to others.
5) Add information to Scrambler signage stating: STAY SEATED AT ALL TIMES.
6) Add to weekly inspection list: Check that the warning signs inside the handlebar of all Scrambler seats are clearly legible and in good repair.
7) Eli recommends that seat belts be installed on Scrambler seats.
8) Adopt a "No Single Riders" policy for the Scrambler, unless seat belts have been installed. Note: Installing seat belts does NOT prohibit a "No Single Riders" policy.

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# SERVICE BULLETIN

**Ride Manufacturer**: Eli Bridge Company **Affected Production** Dates: All **Affected Serial Nos**: All
**Ride Names**: Scrambler®, Trailer-Mounted Scrambler (TMS), Retro-Fitted Scrambler® (RS)

**Abstract of Issue**: It has been brought to our attention that weld cracking has occurred on the bottom side of the stationary center base. The cracking has occurred at the weld connection of the center pole and the base. The weld is located between two very rigid structures, the base and the center pole. The out-of-balance forces on these structures can, over the years, allow cracking around the weld.

Another factor contributing to the cracking deals with the tapered roller bearings. The Scrambler® uses two of these bearings, per sweep, at the top and bottom of the stationary center pole. It is the nature of tapered roller bearings, when used in pairs, that the normal radial loads produce thrust loads that want to push the two bearings away from each other. Thrust is created by the top bearing against the plate bolted to the top of the stationary center pole. This produces a force acting to pull the stationary center pole out of the stationary base. The interference fit between the base and the center pole, along with the weld, resists this force. Thus, creating cracking in the weld. Separation between the two bearings shall occur if the center pole is uprooted from the base. This may be indicated by swaying of the center pole. Eventually, the swaying will allow the seats to strike the bottom sweeps while the ride is in motion if not corrected.

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**Reason For Release**: This is not a new issue for Scramblers® and there was a previous letter about this many years ago. However, Eli has received an increasing number of phone calls regarding Scrambler bases and the median age of Scramblers in operation is approximately 35 years, so it was decided to distribute the information again in a Bulletin.

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**Action to be taken**: The Scrambler® should be inspected at the arrival of this bulletin unless it has already been inspected to the following schedule. Furthermore, we believe that it would be reasonable to re-inspect the Scrambler® center pole and take action according to the following guidelines:

A. If the ride has been inspected and no crack is found, then the ride should be re-inspected as follows: Portable models should be re-inspected every setup. Park model bases should be visually re-inspected at least every five years. During the interim, park model bases should be inspected to verify the distance between each of the bottom sweeps and the top of the catwalk is relatively equidistant, approximately 3.5", at least every five months or more if the operating season exceeds five months.
B. If a crack is found and the crack extends no more than 1/3 of the way around, and it is then ground out and re-welded by a certified welder (call Eli for approved procedures), then it should be re-inspected in five years.
C. If the center pole has been returned to the factory for repair, the next re-inspection should be within five years from the date of the repair, then according to "A" above thereafter.

Based on our experience with the Scrambler® we believe that these are conservative procedures. We have tried to keep the inspections as far apart as we believe prudent, while also keeping them close enough to give the ride the protection it needs to operate in a safe manner.

For additional information not found in this bulletin or consultation about your Scrambler®, please contact Eli Bridge Company at the phone number or email listed above.

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# SERVICE BULLETIN

**Ride Manufacturer**: Eli Bridge Company **Affected Production Dates**: All **Affected Serial Nos**: All
**Ride Names**: Scrambler®, Trailer Mounted Scrambler (TMS), Retro-Fitted Scrambler (RS)

**Abstract of Issue:** Pin-holes becoming ovaled and oversized is a problem on older rides due to wear or misalignment of pins driven into the holes. Once the holes are worn, the condition will rapidly become worse due to cyclic loading and peening of the parts. The hole wear can be in all structural connections such as seat tabs, seat sweep, either end of the upper or lower sweep or the tie rods.

**Reason for Release:** This is not a new issue, but Eli has experienced an increase of phone calls with questions regarding pin and pinhole wear. If the problem is not resolved, then the rate of wear increases and results in unsafe operating conditions. Pin wear can allow the entire ride to "sag" and can possibly allow the seat step to come into contact with the bottom sweep. This contact will result in catastrophic consequences such as patron injury or death not to mention damage to the equipment.

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**Action to be taken:** If the pin diameter has worn 1/32" or more, then the pin must be replaced with a new pin unless the pinhole had similar wear. If the pinhole has worn 1/32" over, at widest point, then the hole must be oversized and the next larger size assembly pin used or oversized and bushed back to the original 1". Eli Bridge Company has oversized pins available and a line reamer rental program to allow the owners to bring the worn holes back to factory tolerances. There are also bushings available to rebuild the holes after reaming past maximum oversized pin sizes. The corrective action is to line ream the worn holes to the next available oversize diameter and install new oversize pins to match. The original diameter of the assembly pin is one inch. Oversize pin diameters are 1 1/16" and 1 1/8" and are marked with one groove in the head for 1 1/16" and two grooves for 1 1/8" diameter. After this, Eli Bridge Company has 1-1/4" OD/ 1" ID cylindrical bushings available that are to be silver soldered into the single tab holes after reaming to 1 1/4" diameter. The double tab locations have a flanged bushing design and these are welded around the flange to the double tab

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For additional information not found in this bulletin, please review your Scrambler Manual. For consultation about your SCRAMBLER®, please contact Eli Bridge Company at the phone number or email listed above.

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# SERVICE BULLETIN

**Ride Manufacturer**: Eli Bridge Company **Affected Production Dates**: All **Affected Serial Nos**: All

**Ride Names:** Scrambler®, Trailer-Mounted Scrambler (TMS), Retro-Fitted Scrambler (RS)

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**Abstract of Issue:** Scrambler Seat Repair- Acceptable Blind Fasteners/ Rivets.
It has come to our attention that
1) Some Scrambler seats are regularly being run with loose or missing rivets and
2) Occasionally when seat repairs are being done, it is difficult to find a Huck Rivet Gun to replace Huck Rivets.

The seat design is similar to an aircraft wing design utilizing inner ribs with bent flanges riveted to outer aluminum skins. The strength is therefore an overall integral unit assembly. If rivets are missing or loose, forces cannot be transmitted properly throughout the assembly to spread the loads. And, if several rivets in a row are missing or loose, the rivets on each side may also become damaged due to the "sawing" action of the skins moving against the rivet shafts. When seats are allowed to operate under these circumstances, the remaining structure is flexing and straining, which results in structural fatigue of the skins and the rivets.

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**Reason for Release:** 1) BIG ELI Scrambler Seats should not be operated if rivets are missing or loose, and 2) To address acceptable rivet fasteners for use on Eli Bridge Co. Scrambler seats.

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**Action to be taken:** In the assembly of the scrambler seat, the main rivet used is a 5/32" (#56) aluminum pop rivet installed in a hole which has been made with a #20 drill of .1610" diameter. Loose rivets should be drilled out, then look through the hole to see the position of the rib flange. If it is in close position to the skin, then a new aluminum pop rivet of appropriate gauge and length can be used to clamp the assembly tight again. Note that in some places there may be more than 2 layers of aluminum or different thickness. The skin is .040" thick so be sure to use an appropriate gauge rivet. Do not use steel/steel or aluminum/steel pop rivets due to rusting and therefore corroding the aluminum skin. Only reuse existing holes, do not drill new holes in the flange. Use an awl or ice pick to align holes if necessary.

Also note that in some corners, a 3/16" all aluminum huck rivet is used. Since these rivets require a special swagger to install, which can often be unavailable, an all stainless steel pop rivet of appropriate gauge can be used. The stainless steel will not rust and has superior grip and sheer strength than the aluminum. The proper drill size for this replacement is a #11 or .1910" diameter. These are the points of higher stress that need to be handled properly. All seats shall be inspected weekly for portable rides and monthly for stationary rides.

If three or more rivets in a row are missing or loose, replace the three rivets on each side of the missing rivets to maintain the integrity of the design because typically these will be become exceeding worn as well.

For additional information not found in this bulletin or consultation about your SCRAMBLER® seats, please contact Eli Bridge Company at the phone number or email listed above.

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# SERVICE BULLETIN

**Ride Manufacturer**: Eli Bridge Company **Affected Production Dates**: All **Affected Serial Nos**: All

**Ride Names**: Scrambler®, Trailer-Mounted Scrambler (TMS), Retro-Fitted Scrambler (RS)

**Abstract of Issue**: The cushions used for the SCRAMBLER® seats are specifically designed for safety, proper ergonomics and balance of the seat. We understand that these cushions wear and will eventually need to be replaced. It is imperative that the replacement cushions have the same height dimensions, 6.50" front and sloping rearward, as the Manufacturer's original cushions. Replacement cushions that are higher than original cushions will raise the center of gravity of the patron, which can result in injury or death to a patron, if ejected from the seat. Also, a higher cushion will minimize or eliminate the clearance between the patron's legs and the lap bar, thus, creating uncomfortable riding positions for the patrons and restricting the function of the lap bar.

Replacement cushions that are lower than original cushions will allow too much room between the lapbar and the smaller patron's legs and can render the lapbar useless as a restraint. Additionally, replacement cushions that are higher or lower than original cushions will result in strain on the seat structure and may result in rapid seat wear or failure.

**Reason For Release**: Scrambler seat cushions need to be inspected regularly and then properly repaired or replaced with a proper seat cushion replacement. Failing to replace the non-conforming cushions jeopardizes the safety and comfort of the patrons.

**Action to be taken**: Add cushion inspection to your regular Inspection Log (Included in this packet). If your current Scrambler® has cushions that do not replicate the height dimensions and follow the front to back sloped design of the original cushions, then they must be repaired or replaced with acceptable cushions.

On Naugahyde cushions: Check the wooden frame for decay or disintegration, rebuild, if necessary. Check the padding height once the wood is in proper repair, you may need to add firm padding to older cushions to build up the height before replacing with a new covering to bring it back to the proper height. You can always send them back to the factory to be refurbished, too.

New Urethane foam molded cushions are also available from Eli which will reduce the amount of time and money you spend on repair and replacement of your cushions.

For additional information not found in this bulletin or consultation about your Scrambler® seats, please contact Eli Bridge Company at the phone number or email listed above.

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Completion Date: Various


# SERVICE BULLETIN

**Ride Manufacturer**: Eli Bridge Company **Affected Production Dates**: All **Affected Serial Nos.:** All
**Ride Names**: Seats on the Scrambler®, Trailer-Mounted Scrambler® (TMS), Retro-Fitted Scrambler® (RS)

**Abstract of Issue**: Seats on a BIG ELI SCRAMBLER®, TMS®, or RS are constructed with the intent of longevity and durability. They are designed like an aircraft wing to be strong, but light. However, they must be properly handled and maintained to retain the integrity of the design. When inspecting seats, the inspector would do well to imagine flying in a plane with a wing that is in the same condition as the seats being inspected – would the aircraft wing pass inspection? If not, the seat should not pass either.

The SCRAMBLER® seat depends on the two "skins", the three flanged ribs and the "box" on the seat back to give the seat it's structural integrity. There is NO additional frame inside to strengthen the seat. The rib flanges, to which the inside and outside skins are riveted, develop the major strength of the seat. Damage may begin to appear in the seats of a SCRAMBLER® over time from wear, abuse and/or fatigue. There are different levels or types of damage. They are: Minor Damage, Moderate Damage, Extensive Damage or Fastener Issues/Damage which includes Flaking Aluminum Tabs and Missing or Loose Rivets and Bolts.

**Reason For Release**: Many seats have been sent in to the factory or observed by Eli Bridge Company personnel in operation with missing rivets, loose rivets, with minor, moderate and extensive skin and rib damage and/or which were improperly repaired. Also, personnel have observed non-conforming or missing cushions, and flaking on aluminum tabs. We have also observed that some seats appear only slightly damaged on the outside, but when they are opened up to replace a rib or skins, for instance, the inside of the seat has much more serious damage. This includes extra holes in the flanges even becoming slots, severe corrosion, debris wearing out the inside of the metal and rivets, etc. The extra holes occur when the person repairing the seat does not match up the new holes in the skin to the original holes in the flange.

(a) **Minor Damage** consists of a non-invasive dent, such as a small dent in the skin that is not in the area of a rib connection. It also includes an improper patch covering a small hole in the inside skin or the outside skin which has no cracks emanating from it. This type of damage should have a time limit to be repaired of before the next season starts.

(b) **Moderate Damage** consists of one or two structural issues, such as a cracked rib or a small hole underneath the seat cushion. These need to be repaired as soon as the parts can be ordered in, at the most, within 30 days.

(c) **Extensive Damage** consists of major structural damage to any three or more of the five major components of a Scrambler® seat. The five major components of a seat are the back (including the back rib), the inside rib, the front rib, the inside skin and the outside skin. For example, damage to two of the three ribs and a skin (or more), or 2 skins and a rib (or more) is considered extensive damage. This amount of damage is generally cause for replacement. This is because most of the 4,000+ fasteners need to be drilled out to remove the damaged parts. This leaves essentially no structure to start putting the seat back together. Also, all the 4,000+ fasteners then need to be replaced with new ones. Few shops have all the necessary tools and fixtures for this type of repair and the cost of the parts and labor can be more than the cost of a new seat shell. Extensive damage should be fixed immediately, before the seat carries any more passengers.

(d) **Fastener Issues/Damage** include missing rivets, loose or corroded rivets and flaking aluminum seat tabs. If your Scrambler seats have any of these issues, the fasteners must be replaced (i.e. replace the rivets with the proper size and type of rivet, replace the tabs with steel tabs) before operating that seat.

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# SERVICE BULLETIN

**Ride Manufacturer**: Eli Bridge Company **Affected Production Dates**: All **Affected Serial Nos**: All
**Ride Names**: SCRAMBLER®, Trailer-Mounted SCRAMBLER® (TMS®), Retro-Fitted SCRAMBLER® (RS)

**(Cont.)**
**Action to be taken**: 1) All Scrambler® seats should be thoroughly inspected immediately. Begin with the information in your ***Operation and Maintenance of BIG ELI Scrambler® Manual*** in the section on "SEATS" pages 69 through 91 of the 2/73 edition. You should also review your ***"Instructions for Erecting, Operating and Servicing the BIG ELI Scrambler®"*** manual for all the references to the seats. Immediate thorough inspection (then follow the Scrambler Seat Inspection log included, thereafter) of all BIG ELI Scrambler® seats to include the following:

- All fasteners, including rivets, must be properly installed: original size, in original holes, no looseness allowed, and must be straight. Also See Bulletin #060131-13 released January 31,2006.
- Handlebars must latch properly, without having to lift up the bar to attach.
- The Lapbar must be installed and in proper working condition.
- The WARNING decal must be installed and in good condition and clearly legible.
- The secondary latch must be installed and in proper working order.
- Rubber bumpers must all be properly installed.
- Ribs must be free of cracks, especially inspect around the hinge points.
- Ribs must be free of damage (deformation not allowed) at the flange area, where they are riveted to the inside and outside skins.
- Skins must be free of cracks, holes (other than for fasteners), and deformations.
- No corrosion, especially around the riveted areas.
- The steps must be free from cracks, properly fastened and have the complete step surface, including the 90 degree bend at the bottom, covered in non-skid material.
- Cushions on the SCRAMBLER® seat and the side to the right of the patron must be the proper size and in good condition. The seat back is not required to have a cushion but must at least have a vinyl covering, not bare aluminum.
- The stepping surface of the footbottom must have a secondary reinforcement properly installed and in good working condition, i.e. a 13" X 36" wooden board or piece of treadplate (no sharp corners or splinters on either).

2) The damaged part must be properly repaired or replaced.

- Minimally damaged areas on the inside and outside skins can be repaired using standard repair patches and rivets (with instructions) available from Eli Bridge Co.
- Damaged or worn parts such as rubber bumpers, nyliner bushings, decals, etc. must be ordered and replaced.
- Cracked or broken ribs must be replaced.
- We believe that field repairs to SCRAMBLER® seat ribs should not be attempted. The factory should be consulted before repairs of this nature are attempted. Have a digital picture ready to email to elibridge@aol.com before the consultation.
- If it is determined that the seat(s) is in need of "skin" repair, contact Eli Bridge Company to arrange for seat analysis. If a conclusion is reached that the seat(s) can be field repaired then the repair kit and procedure can be furnished. If the seat is beyond field repair, then the seat(s) will need to be returned to the factory for repair.

# SCRAMBLER SEAT INSPECTION LOG Date:_____

This log is a basis for inspection and not intended to be all-inclusive. It is imperative that you read your ***Operation and Maintenance of BIG ELI Scrambler® Manual*** in the section on "SEATS" pages 69 through 91 of the 2/73 edition and your ***"Instructions for Erecting, Operating and Servicing the BIG ELI Scrambler®"*** manual for additional pertinent information. If you notice any unusual wear, add to this list to watch. Also see your corp. inspection requirements and add them in, as well.

| Inspect according to the following Inspection items and frequency, at a minimum. Initial each and note corrective action, if any action is necessary. | Daily | Daily | Daily | Daily | Daily | Daily | Daily | Weekly | Monthly | Initial | Notes, comments and/or corrective action. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All fasteners, including rivets, must be properly installed: original size, in original holes, no looseness allowed, and must be straight. | | | | | | | | | | | |
| All fasteners must be free of corrosion, deformation or visible wear. | | | | | | | | | | | |
| Handlebars must latch properly, without having to lift up the bar to attach. | | | | | | | | | | | |
| The Lapbar must be installed and in proper working condition. | | | | | | | | | | | |
| The WARNING decal must be installed and in clearly legible condition. | | | | | | | | | | | |
| The secondary latch must be installed and in proper working order. | | | | | | | | | | | |
| Rubber bumpers must all be properly installed and free from being overly worn (rubber worn below rivet heads) – on the ribs by the hinges and on the footbottom for protection when folding up. | | | | | | | | | | | |
| Ribs must be free of cracks, especially inspect around the hinge points. | | | | | | | | | | | |
| Ribs must be free of damage (deformation not allowed) especially at the flange area, where they are riveted to the inside and outside skins. | | | | | | | | | | | |
| Skins must be free of cracks, holes, and deformations. | | | | | | | | | | | |
| Skins and ribs must be free of corrosion, especially around the riveted areas. | | | | | | | | | | | |
| The steps must be free from cracks, properly fastened and have the complete step surface, including the 90 degree bend at the bottom, covered in non-skid material. | | | | | | | | | | | |
| Cushions on the Scrambler® seat and the side to the right of the patron must be the proper size and in good condition. The seat back is not required to have a cushion but must at least have a vinyl covering, not bare aluminum. | | | | | | | | | | | |
| The stepping surface of the footbottom must have a secondary reinforcement, with a non-skid surface, properly installed and in good working condition, ie. a 13" X 36" wooden board or piece of treadplate (no sharp corners or splinters on either). | | | | | | | | | | | |
| The widest part of the gap between the hole for the seat pin and the pin itself must be less than or = 3/64" (Hole inside diameter – Pin outside diameter < or = 3/64") | | | | | | | | | | | |
| There must be no flaking on the seat tabs and no visible cracks. | | | | | | | | | | | |
| The seat tabs must be solidly attached to the seat. | | | | | | | | | | | |
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Bulletin No.: 060131-17
Release Date: January 31, 2006
Effective Date: January 31, 2006
Supercedes: None
Completion Date: n/a


# SAFETY ALERT

**Ride Manufacturer:** Eli Bridge Company **Affected Production Dates:** All **Affected Serial Nos:** All
**Ride Names**: Big Eli Scrambler® Aluminum Seats

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**Abstract of Issue**: Pinch potential in lap bar assembly.

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**Reason For Release**: It has been brought to our attention that it is possible to pinch fingers between the lap bar pivot block and the lap bar hinge blocks if care is not used.

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**Actions to be taken**: Eli Bridge Co. has redesigned a wider lap bar hinge block that covers the sweep of the lap bar pivot block movement to minimize the possibility of pinching the fingers when raising or lowering the lap bar. The suggested replacement part # is 273-421B which consists of 4 lap bar hinge blocks that can be screwed to the existing door in place of the original block # 273-421A. All existing components are reused with the wider hinge blocks. Two 5/16 -18 x 3/4" long pan head screws (stainless steel) hold the hinge blocks to the handle bar.