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**RECEIVED**

AUG 16 1994

DEPARTMENT OF LABOR  
CARNIVAL & AMUSEMENT RIDE  
INSPECTION DIVISION



U.S. CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, D.C. 20207

OFFICE OF COMPLIANCE  
AND ENFORCEMENT

Division of  
Corrective Actions  
Tel: 301-504-0608  
Fax: 301-504-0359

# AMUSEMENT RIDE SAFETY ALERT!

## ATTENTION! STATE AMUSEMENT RIDE SAFETY OFFICIALS

### EYERLY AIRCRAFT "OCTOPUS, SPIDER & MONSTER RIDES" August 16, 1994

On August 10 - 11, 1994, the U.S. Consumer Product Safety Commission (CPSC) in conjunction with the Commonwealth of Kentucky's Department of Weights & Measures, investigated two cars/tubs removed from an "Octopus" amusement ride involved in an accident on August 3, 1994, at the Estill County Fair in Irving, Kentucky. The accident involved the failure of a car that contained two male passengers. The car's tubular framing fractured behind and under the seat causing the two passengers to be dragged and then dumped from the car. CPSC staff have preliminarily determined the cause of the accident to be due to excessive corrosion and fracturing of the tubular structure supporting the hub under the car's seat. The corrosion appears to have been as a result of water draining from the drain holes and collecting in the gap between two under-side tubes and their fiberglass covering. The corrosion was greatest near the drain holes. Fracture of these tubes is believed to have preceded the fracture of the car's other frame tubes.

The rides were manufactured from 1936 to the mid-1970's by the defunct Eyerley Aircraft Co., Salem, Oregon. No new rides are being made, although parts can be purchased from Oregon Rides, Salem, OR. The rides involved are all "Octopus" and "Spider" with fiberglass or metal covered tubs/cars and "Monster" rides with serial number 22 and above.

While the CPSC's investigation into the cause of the failure continues, in the interim, we recommend inspection of the cars critical areas, as follows:

1. The critical areas are identified as the four tubes under the car seat that are covered by fiberglass. The tubes are shown in the attached schematic based on the Eyerly Aircraft Company drawing O-913 entitled "Octo & Spider Car Back Section."

2. Inspection by radiography is recommended if ride owners do not want to remove the fiberglass covering the car's tubing. It is recommended to have the radiography done by a class III technician. NOTE: Ultrasonic inspection is not recommended as tube roughness may make an accurate interpretation extremely difficult.
3. A visual inspection of the tubing may be done, but the fiberglass covering the tubing would need to be removed first for an adequate inspection.
4. Fiberglass removal techniques must be obtained from Oregon Rides prior to removing any fiberglass.
5. If excessively corroded or cracked tubing is found during the inspection, those tubes or the car should be replaced.
6. It is our understanding that a retrofit/fiberglass repair kit is being developed by Oregon Rides, Inc. CPSC will be evaluating the adequacy of this repair kit.
7. Magnetic particle inspection may be used to inspect the numerous welds around the hub and tubing of car back's underside.

Corrosion and cracking may also be found in non-critical areas of the seat front and seat back of the car. This corrosion and cracking may also be concealed by the fiberglass covering the car. Again, if corrosion or cracking is found, consult with Oregon Rides about the repair.

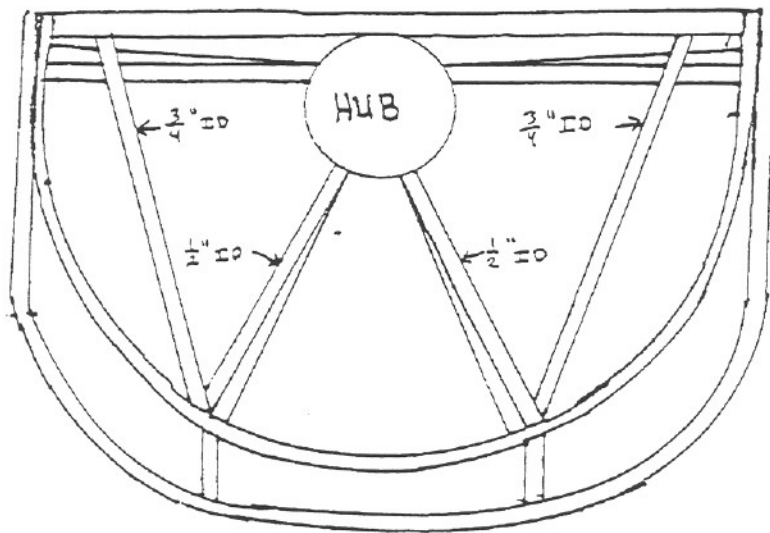
For further information or clarification on this Safety Bulletin you may contact one of the following:

US CPSC  
Division of Corrective Actions  
Jay DeMarco at (301) 504-0608 ext 1353  
Division of Mechanical Engineering  
Tom Caton at (301) 504-0494 ext 1305

Commonwealth of Kentucky, Dept. of Weights & Measures  
Carl Dills at (502) 564-4870

Oregon Rides, Inc., Salem, OR  
at (503) 588-0984.

SCHEMATIC BASED ON EYERLY AIRCRAFT COMPANY  
DRAWING O-913 "OCTO & SPIDER CAR BACK SECTION"



1. THE  $\frac{3}{4}"$  ID AND  $\frac{1}{2}"$  ID TUBES ARE COVERED BY FIBERGLASS ON THE UNDERSIDE OF THE CAR BACK SECTION
2. NUMEROUS FILLET WELDS JOIN THE TUBES

( NOT TO SCALE )



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## AMUSEMENT RIDE SAFETY ALERT!

### ATTENTION! STATE AMUSEMENT RIDE SAFETY OFFICIALS 2nd NOTICE

EYERLY AIRCRAFT  
"OCTOPUS, SPIDER & MONSTER RIDES"  
September 13, 1994

As noted in our August 16, 1994 Safety Alert, the U.S. Consumer Product Safety Commission (CPSC) in conjunction with the Commonwealth of Kentucky's Department of Weights & Measures, investigated an accident involving an "Octopus" amusement in Irvine, Kentucky. The accident involved the failure of the car's tubular framing behind and under the seat causing the two passengers to be dumped from the car. CPSC staff have preliminarily determined the cause of the accident to be due to excessive corrosion (wide pits, deep pits, and perforation) and fracturing of the tubular structure supporting the hub under the car's seat. The corrosion appears to have been as a result of moisture collecting in the gap between two under-side tubes and their fiberglass covering. Fracture of these tubes is believed to have preceded the fracture of the other frame tubes.

The rides were manufactured from 1936 to the mid-1970's by the defunct Eyerly Aircraft Co., Salem, Oregon. No new rides are being made, although parts can be purchased from Oregon Rides, Salem, OR. The rides involved are all "Octopus", "Spider" and "Monster" rides with fiberglass covered tubs/cars. Production of fiberglass cars began in 1964. These tubs/cars are believed to be used interchangeably by the industry. Those fiberglass tubs/cars that are 15 years and older are considered the most likely to have hidden corrosion.

The CPSC recommends inspection of the cars critical areas. The following text provides information about using either destructive or nondestructive techniques for the examination of the tubing that is covered by fiberglass matting on the underside of a car seat.

#### General Inspection Comments

The inspection for possible corroded or cracked tubing hidden by a fiberglass covering may be done by either destructive or nondestructive methods. Either method is to be used in conjunction with the use of visual inspection or magnetic particle inspection of the car's other underside tubing that is not covered by fiberglass. Attachment 11 shows the location of the tubing that is the subject of this bulletin. This bulletin is not intended to exclude the inspection of other components of the cars or ride as described by the manufacturer and past and present parts suppliers.

Cars that are known to be over 15 years old or those cars whose age cannot be verified to be less than 15 years old are subject to this inspection recommendation. Follow up inspections are to be done at 5-year intervals after the initial inspection.

The number of cars on an individual ride to be inspected should be based on whether or not that cars have a history of being together as one unit. If the ride's cars have an unknown history or if the cars are known to not have always been together as a unit, then all of that ride's cars should be inspected. The inspection should be repeated in succeeding 5-year intervals. If all of a ride's cars have a known history of always being together as a unit, then one-third of that ride's cars may be selected for examination. This first one-third of a ride's cars should not be examined again if the cars remain together as a unit until each third has been examined over each succeeding 5-year inspection interval. Consult with Oregon Rides about all instances of tubing corrosion, perforation, or cracking.

The fracture of the other frame tubes may be assisted by the distortion of the underside tubes during handling. This distortion may have increased the stress in the frame increasing the probability of crack initiation. These other tubes should be inspected for straightness. This inspection should be combined with a visual or magnetic particle inspection of this other exposed tubing. This should be done in addition to the ride owner's choice of doing a destructive examination or a nondestructive examination of the tubing that is covered by the fiberglass matting. Oregon Rides is preparing a bulletin providing detailed information about the examination of a car's exposed tubing.

### Destructive Examination

Destructive examination of the tubing is intended to be only destructive to the fiberglass matting that bonds the tubing to the underside of the fiberglass seat. It is destructive because the examination entails the incremental removal of 1-inch wide strips of fiberglass matting with a blade. The tubing and the fiberglass seat material is not to be cut. The destructive examination should be accomplished by:

- (1) - Locating a point 12-inches from the car's spindle retainer on the fiberglass matting covering and bonding the two underside tubes that are welded to the spindle retainer to the fiberglass seat. On the fiberglass covering of the two other tubes bonded to the seat bottom, mark a point on these two tubes that is next to the 12-inch point marked on the first two tubes.
- (2) - Locating the edges of the fiberglass matting nearest to the car's drain holes for the four tubes bonded to the car's underside.
- (3) - Starting from the edge of the fiberglass matting, use a blade, without cutting the tubing or fiberglass seat, to remove a 1-inch wide section of fiberglass matting from the four tubes bonded to the fiberglass seat.
- (4) - If no corrosion is observed after removing the first 1-inch wide section of fiberglass matting stop and repair the fiberglass matting according to instructions from Oregon Rides.
- (5) - If light surface corrosion that does not reduce the wall thickness is observed, continue removing 1-inch wide sections of fiberglass matting until no corrosion (clean metal surface) is observed or the 12-inch point described above is reached. If only light surface corrosion that does not reduce the wall thickness is observed, clean the tube surface with a wire brush and repair the fiberglass covering according to instructions from Oregon Rides.
- (6) - If severe corrosion, deep or wide pitting, wall penetration, or wall cracking is observed, then the tubing should be replaced and bonded to the fiberglass seat with new fiberglass matting according to instructions from Oregon Rides.
- (7) - The other tubing that is not covered by fiberglass matting may be inspected by visual inspection or magnetic particle inspection techniques according to instructions from Oregon Rides.

### Non-Destructive Examination

- (1) - The non-destructive examination involves radiography of the underside tubing through the fiberglass seat and fiberglass matting covering the underside tubing. The examination can be done by a Level II or III Inspector qualified in radiography.
- (2) - If the radiography does not reveal any corrosion, deep or wide pitting, perforation, or cracking in the tubing, then the tubing shall be considered to be not affected.
- (3) - If corrosion is observed, the corrosion should be exposed by removing 1-inch wide increments of the fiberglass matting from the tube. Remove 1-inch wide sections of fiberglass matting until no corrosion is observed. (a) If only light surface corrosion that does not reduce the wall thickness is observed, use a wire brush to clean the corrosion from the tube surface and repair the fiberglass covering according to instructions from Oregon Rides. (b) If severe corrosion, in the form deep or wide pitting, wall porosity, or through wall thickness cracking is observed, then the tubing should be replaced and bonded to the fiberglass seat with new fiberglass matting according to instructions from Oregon Rides.
- (4) - The other underside tubing, not covered by the fiberglass matting, may be inspected by visual inspection or magnetic particle inspection techniques.

For further information or clarification on this Safety Bulletin you may contact one of the following:

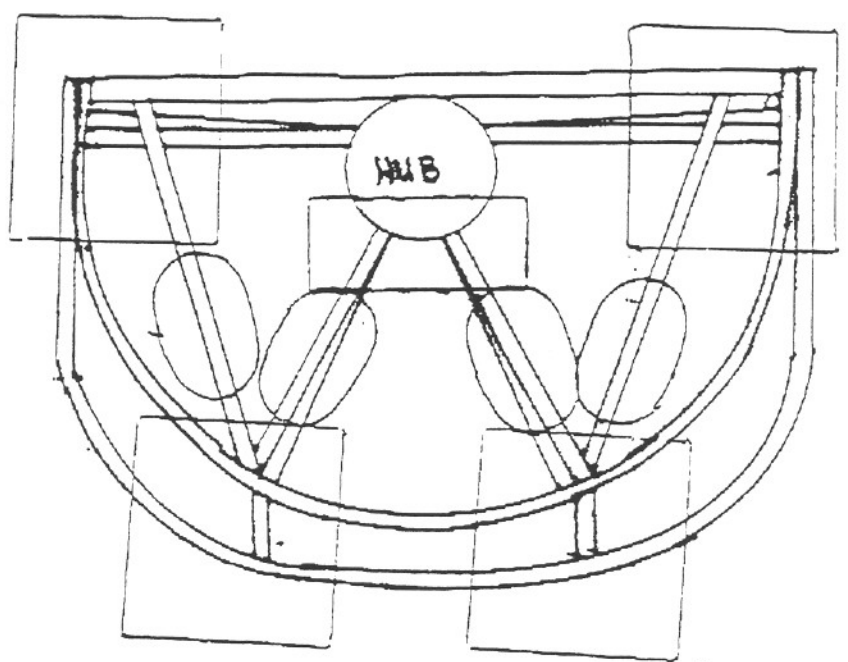
US Consumer Product Safety Commission  
Division of Corrective Actions  
Washington, DC  
Jay DeMarco at (301) 504-0608 ext 1353  
and  
Division of Mechanical Engineering  
Thomas Caton at (301) 504-0494 ext 1305  
or  
Oregon Rides, Inc.  
Portland, OR  
Guy Sherborne, Sr. at (503) 588-0984.

Attachment 11 - Examination Areas for Destructive/Non-Destructive and  
Visual/ Magnetic Particle Techniques

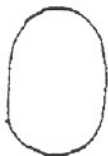
- Areas to be examined by visual or magnetic particle inspection techniques
  
- Areas to be examined by destructive or non-destructive radiographic techniques



Attachment 11 - Examination Areas for Destructive/Non-Destructive and  
Visual/ Magnetic Particle Techniques



- Areas to be examined by visual or magnetic particle  
inspection techniques



- Areas to be examined by destructive or non-destructive  
radiographic techniques

MANUFACTURERS OF AMUSEMENT RIDES



P.O. BOX 12155  
SALEM, OREGON 97309

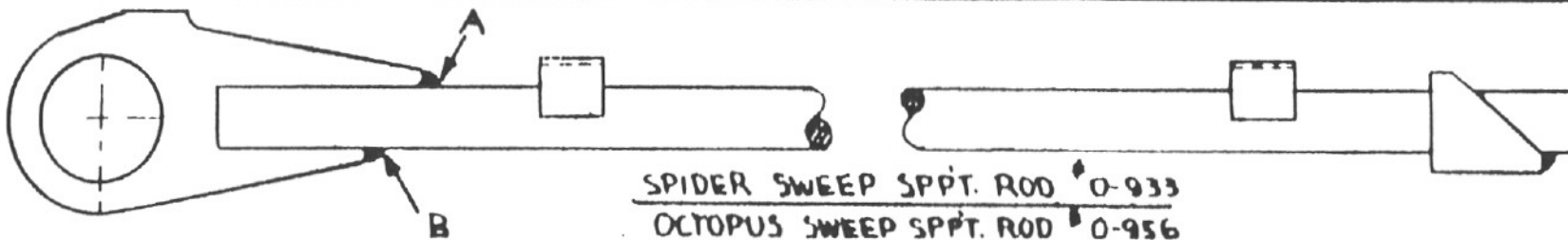
IN MANUFACTURING OCTOPUS/SPIDER TYPE DEVICES SINCE 1936 WE HAVE REPEATEDLY EMPHASIZED THE NECESSITY FOR PROPER MAINTENANCE AND OPERATIONAL PRACTICES. LIKE ALL OTHER FINE MACHINERY THE HIGH WEAR AND STRAIN POINTS OF THE OCTOPUS/SPIDER DESERVE CAREFUL ATTENTION. INCLUDED ARE THREE BULLETINS DESCRIBING PROBLEM AREAS THAT HAVE OCCURRED. IF PROBLEM AREAS DESCRIBED ARE NOT ACTED UPON FAILURES CAN OCCUR RESULTING IN INJURIES TO PASSENGERS.

EYERLY AIRCRAFT COMPANY HAS SOLD ITS ASSETS TO JV INDUSTRIES, INC. ALL PARTS, SERVICE AND REPAIR WILL BE HANDLED BY THE NEW CORPORATION AT P. O. BOX 13399, SALEM, OREGON 97309-1399, PHONE 503 399 0817.

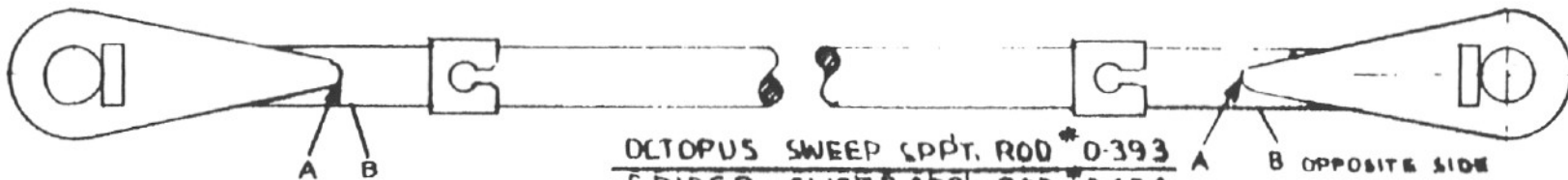
ALL BULLETINS ARE TO ALWAYS ACCOMPANY THE DEVICE IN THE EVENT OF ITS TRANSFER OR SALE. IT IS THE RESPONSIBILITY OF SELLER TO INFORM BUYER OR FUTURE OWNER OF THESE DIRECTIVE BULLETINS SO BUYER OR FUTURE OWNER MAY TAKE APPROPRIATE ACTION AS OUTLINED HEREIN.

EYERLY AIRCRAFT COMPANY

ENC: BULLETINS 0-48-86  
0-49-86  
0-50-86  
8-88-1 Added by JVI 8-88



SPIDER SWEEP SPPT. ROD \*0-933  
 OCTOPUS SWEEP SPPT. ROD \*0-956



OCTOPUS SWEEP SPPT. ROD \*0-393  
 SPIDER SWEEP SPPT. ROD \*0-624  
 A B OPPOSITE SIDE

OPERATION OF THE SPIDER OR OCTOPUS AMUSEMENT RIDE WITH DEFECTIVE SWEEP SUPPORT RODS, (CRACKED, BENT OR OTHERWISE DEFORMED) WILL RESULT IN FAILURE OF THE ROD AND WILL PERMIT THE SWEEP TO FALL WITHOUT WARNING DURING OPERATION. ALL GREASE, GRIME AND DIRT SHOULD BE REMOVED FROM AREAS "A" AND "B" SHOWN, AND N.D.T. TESTED, USING MAGNETIC PARTICAL PROCESS. ALL CRACKED OR OTHERWISE DEFECTIVE RODS MUST BE REPLACED BEFORE OPERATION. FIELD REPAIRS ARE NOT RECOMMENDED. IT IS RECOMMENDED THAT A VISUAL CHECK BE MADE EACH SET-UP OR EVERY SEVEN DAYS, SPECIFICALLY IN AREA SHOWN.

ALL RODS SHOULD BE CHECKED EVERY 200 HOURS OF OPERATION USING THE ABOVE MAGNETIC PARTICAL METHOD. ANY DEFECTIVE ROD FOUND SHOULD BE REPLACED WITH A NEW FACTORY ROD ONLY.

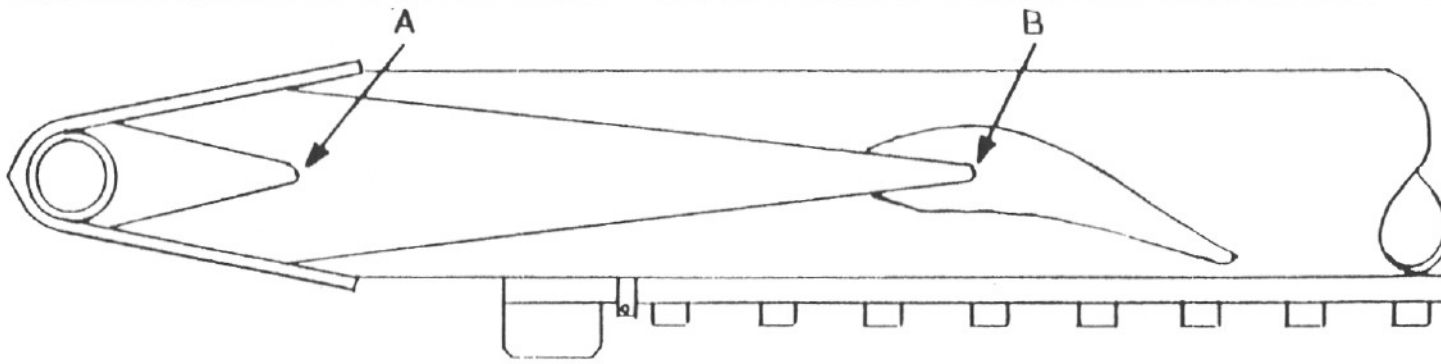
THIS BULLETIN SHOULD BE KEPT WITH ALL PERTINENT RIDE DOCUMENTS.

Octo./ Spider Sweep Support Rod Bulletin.



Drj. No. 0-48-86

DRAWN BY:	SCALE:	NO. RECD.:	MATERIAL:
DATE:	NEXT ASSY.:	SOS. NO.:	SOO BY NO.:



WE HAVE BEEN ADVISED OF SOME HAIRLINE CRACKS THAT HAVE DEVELOPED IN THE WELDMENTS AT POINTS 'A' AND 'B' (BOTH SIDES) OF THE SPIDER SWEEP, PART 0-619. IT IS IMPERATIVE THESE POINTS BE THOROUGHLY INSPECTED IMMEDIATELY UPON RECEIPT OF THIS BULLETIN. IT IS RECOMMENDED THE INSPECTION BE MADE BY QUALIFIED AND APPROVED TESTING PERSONNEL, EMPLOYING MAGNETIC PARTICLE, X-RAY, OR RADIOGRAPH PROCEDURES. IF THE INSPECTION REVEALS ANY IRREGULARITIES, OPERATION OF THE DEVICE SHOULD BE DISCONTINUED IMMEDIATELY. REPAIR IS TO BE DONE BY A QUALIFIED FACILITY KNOWLEDGEABLE IN APPROVED METHODS OF A.W.S. - A.S.M.E. STANDARDS.

IT IS RECOMMENDED THAT A VISUAL INSPECTION BE MADE AT EACH SET-UP OR EVERY SEVEN DAYS OF OPERATION, SPECIFICALLY IN AREAS NOTED.

THIS BULLETIN SHOULD BE KEPT WITH ALL PERTINENT RIDE DOCUMENTS.

### Spider Sweep #0-619 Bulletin



Drg. No. O 49 86

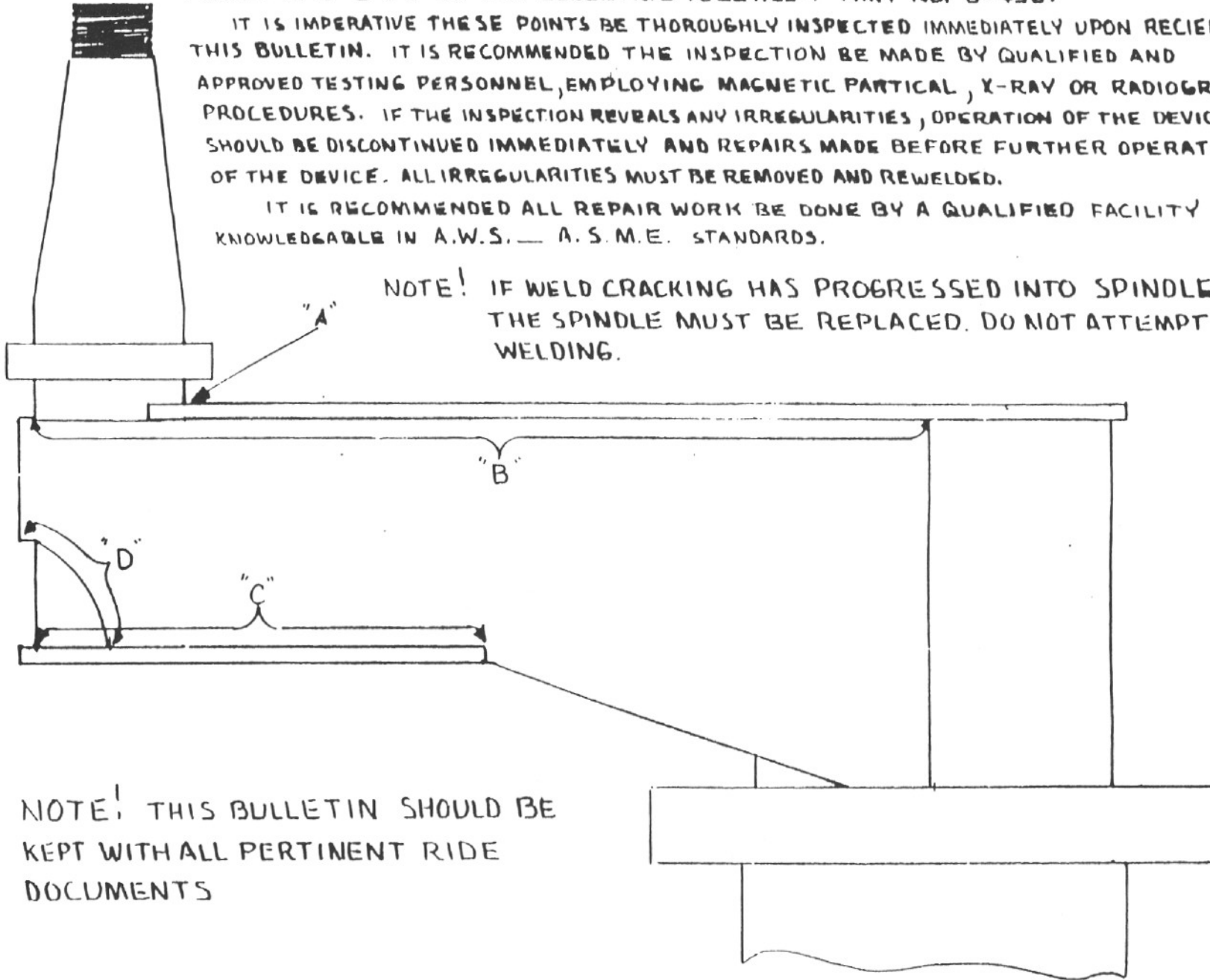
DRAWN BY:	SCALE:	NO. REQ'D:	MATERIAL:
DATE:	NEXT ASSY:	SDS NO.:	SDD BY NO.:

WE HAVE BEEN ADVISED OF SOME HAIRLINE CRACKS THAT HAVE DEVELOPED IN THE WELDMENTS AT POINTS "A B C & D" OF THE ECCENTRIC TUBE ASS'Y PART NO. O-436.

IT IS IMPERATIVE THESE POINTS BE THOROUGHLY INSPECTED IMMEDIATELY UPON RECEIPT OF THIS BULLETIN. IT IS RECOMMENDED THE INSPECTION BE MADE BY QUALIFIED AND APPROVED TESTING PERSONNEL, EMPLOYING MAGNETIC PARTICAL, X-RAY OR RADIOGRAPH PROCEDURES. IF THE INSPECTION REVEALS ANY IRREGULARITIES, OPERATION OF THE DEVICE SHOULD BE DISCONTINUED IMMEDIATELY AND REPAIRS MADE BEFORE FURTHER OPERATION OF THE DEVICE. ALL IRREGULARITIES MUST BE REMOVED AND REWELDED.

IT IS RECOMMENDED ALL REPAIR WORK BE DONE BY A QUALIFIED FACILITY KNOWLEDGEABLE IN A.W.S. — A.S.M.E. STANDARDS.

NOTE! IF WELD CRACKING HAS PROGRESSED INTO SPINDLE, THE SPINDLE MUST BE REPLACED. DO NOT ATTEMPT WELDING.



NOTE! THIS BULLETIN SHOULD BE KEPT WITH ALL PERTINENT RIDE DOCUMENTS



Dwg. No. O 50 86

ECCENTRIC CRANK #O 436 BULLETIN

MATERIAL:

NO. REQ'D:

SCALE:

DRAWN BY:

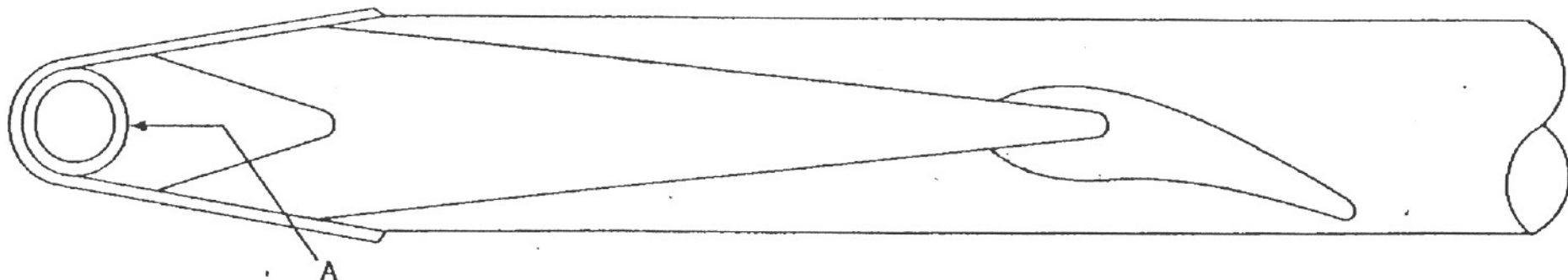
SDS NO.:

NEXT ASSY.:

DATE:

SDO BY NO.:

NOTICE: TO ALL OWNERS OF "SPIDER"  
 AMUSEMENT RIDE DEVICES MANUFACTURED BY  
 EYERLY AIRCRAFT COMPANY.



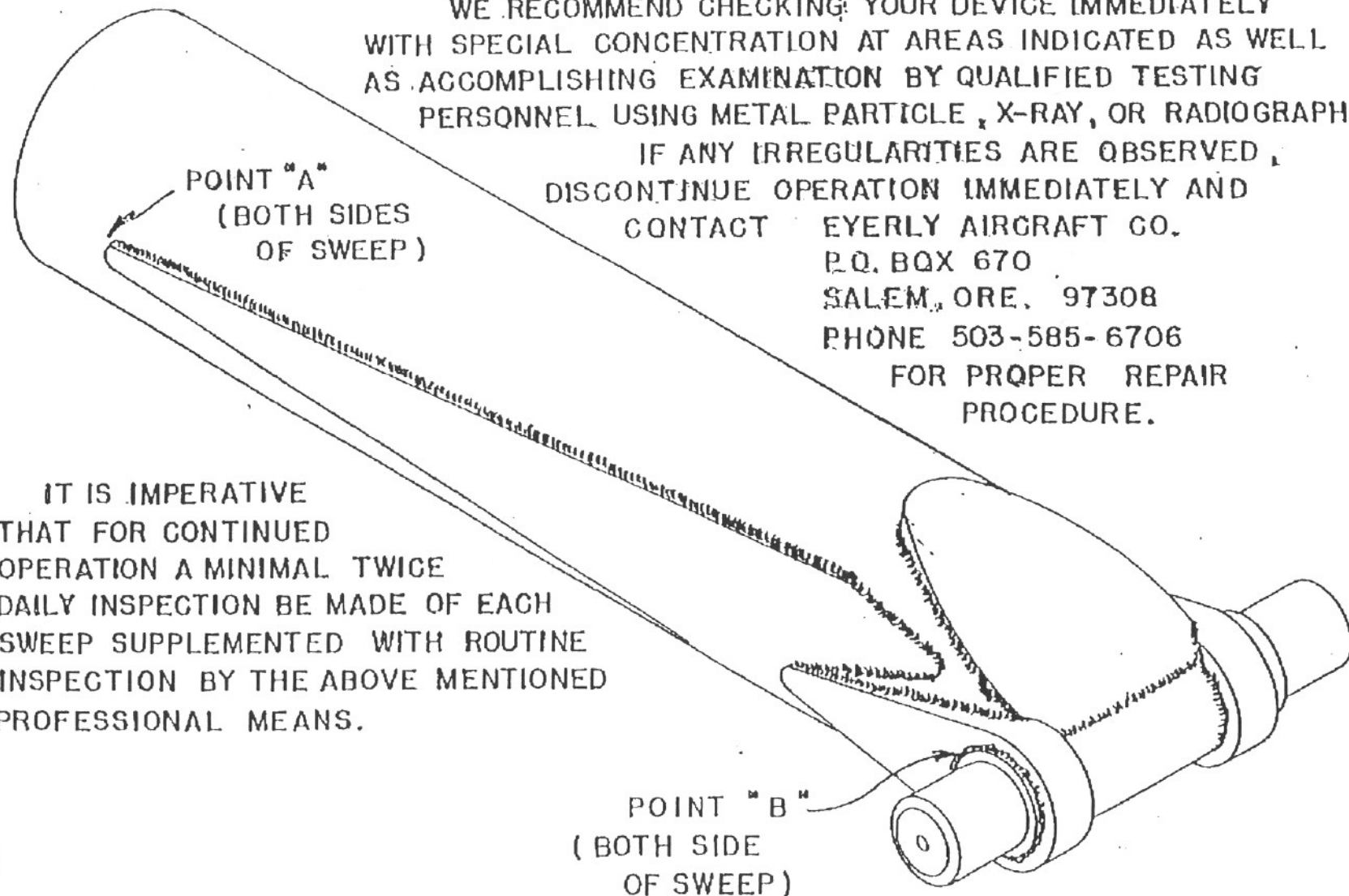
WE HAVE LEARNED OF A SWEEP FAILURE ON A SPIDER DEVICE  
 MANUFACTURED BY EYERLY AIRCRAFT COMPANY.  
 THE FAILURE OCCURED AT THE HINGE PIN WELDMENT. Note: Fig. "A"  
 AS A PUBLIC SERVICE TO THE INDUSTRY, JVI IS ISSUING BULLETIN NO.8-88-1,  
 RELATIVE TO THE EYERLY AIRCRAFT CO. 0-619 SWEEP WITH THE 16" HINGE PIN.  
 IT IS ADVISED THAT YOU IMMEDIATELY INSPECT THE SWEEPS  
 FOR FAILURE IN THIS AREA, (BOTH SIDES). IF CRACKING IS FOUND, NOTE LOCATION  
 AND LENGTH, AND ADVISE JV INDUSTRIES (503) 399-0817 IMMEDIATELY

SPIDER SWEEP 0619				JV INDUSTRIES Inc.  BULLETIN NO. <b>8-88-1</b>
Dr. By	JPM			
Date	8-88	S.D.D. By		
		S.D.S.		

WE HAVE BEEN ADVISED OF A CURVED SWEEP FAILURE WITH INDICATION OF ORIGINAL BREAKING AT POINT "A" AS SHOWN BELOW. ALSO, SOME HAIRLINE CRACKS HAVE BEEN REPORTED IN THE AREA OF ATTACHMENT OF THE SWEEP SPINDLE TO THE REINFORCING TEARDROP GUSSETS DESIGNATED AS POINT "B" BELOW.

WE RECOMMEND CHECKING YOUR DEVICE IMMEDIATELY WITH SPECIAL CONCENTRATION AT AREAS INDICATED AS WELL AS ACCOMPLISHING EXAMINATION BY QUALIFIED TESTING PERSONNEL USING METAL PARTICLE, X-RAY, OR RADIOGRAPH.

IF ANY IRREGULARITIES ARE OBSERVED, DISCONTINUE OPERATION IMMEDIATELY AND CONTACT EYERLY AIRCRAFT CO.  
P.O. BOX 670  
SALEM, ORE. 97308  
PHONE 503-585-6706  
FOR PROPER REPAIR PROCEDURE.



IT IS IMPERATIVE THAT FOR CONTINUED OPERATION A MINIMAL TWICE DAILY INSPECTION BE MADE OF EACH SWEEP SUPPLEMENTED WITH ROUTINE INSPECTION BY THE ABOVE MENTIONED PROFESSIONAL MEANS.

DATE: 6-30-74

DRAWN BY: NEA

SCALE: NONE

NO. RECD: ~

MATERIAL: ~

SOS. NO.:  
SDD. BY NO.:

SPIDER



BULLETIN O-39-74