



# FIELD SERVICE NEWS

FUJI HEAVY INDUSTRIES LTD.

HEAD OFFICE

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## FA-200 RUDDER CABLE

A few instances were reported that during recent 1000 hr. check broken wires were discovered in the FA-200 rudder cables (P/N 200-524011-009 AND 200-524011-011) at the No. 1 pulley locations.

The periodic rudder cable checks of every 100 hr, 500 hr, and 1000 hr are specified, and it is recommended that special attention be paid on the area at and around the No. 1 pulley at the time of each inspection.

The following information concerning "cable damage" is based on the test and experience of the past, and is released for your maintenance reference.

1. Aircraft control cables are oversize, and their load capacity may be as much as 50 percent in excess of the design loads to be sustained. The cables used for FA-200 are 5/32 nominal diameter, 7 x 19, carbon steel cable (MIL-C-1511). Because of the number of wires in aircraft cables, failure is never abrupt, due to wear, but is progressive over periods of extended use. Some broken wires show up soon after placing the cable in service, probably because some wires are under greater tension or harder drawn than the rest. After these overstressed or harder drawn wires have been broken, few additional broken wires will be encountered in normal service for considerable time.
2. The results of tests show that the loss in cable strength due to broken wires depends upon their concentration at any point rather than the total number broken in the cable. Tests have also shown that cables may have broken wires and still be capable of carrying the design load of the cable.
3. At each regular inspection period, cable shall be inspected for broken wires by passing a cloth along the length of the cable. Broken wires will be indicated where the cloth is snagged. It is the point of discovering broken wires to use a cloth saturated with kerosene, and pass along the length of the cable, removing corrosion preventive compound on the cable.

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4. Any 7 x 19 cable that has three broken wires or less per inch, per strand provided that not more than six broken wires exist in a one inch running length shall be considered serviceable. The maximum number of broken wires shall not occur in any two consecutive inches of cable; that is, if six wires are broken in one inch of cable, none would be allowed in the next consecutive inch. Any cable not within the above specified limits shall be considered unserviceable and must be replaced.
  
5. A maximum of three broken wires per inch shall be allowable in the length of cables passing over pulleys, drums, or through fairleads. The critical fatigue area is the working length of the cable; therefore, when broken wires appear in this area the cable tension should be released and the cable closely inspected for defects.

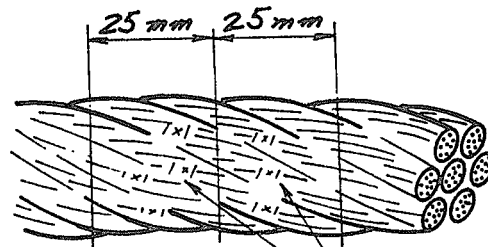


Fig 1

THESE WIRES ARE BROKEN

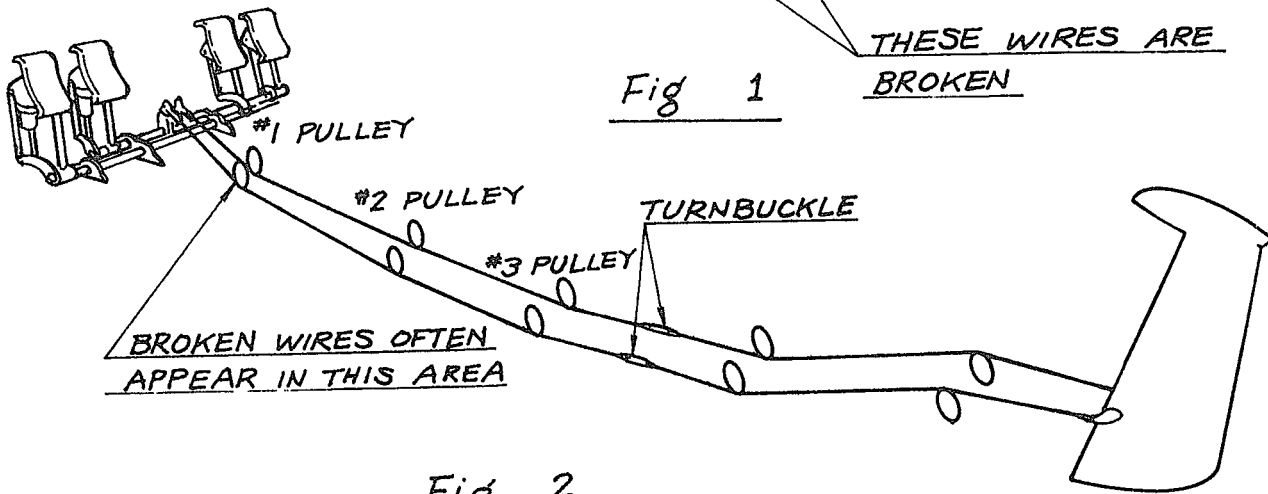


Fig. 2