SERVICE BULLETIN #125

11/01/89

SUBJECT: All AFT suspension cables:
A] Inspection procedures.
B] Approved maintenance procedures

APPLICABILITY: All Aerostar and Raven hot air balloon systems with AFT cables installed as retrofit or from factory.

WARNING: Any time an AFT cable is damaged so that the silicone covering or fibreglass is torn, the possibility of that cable entraining water or dirt increases. This increases the conductivity of that material if a powerline strike should occur.

A] ANNUAL/100 HR AND PREFLIGHT INSPECTION PROCEDURES:

Pre-flight inspection of AFT's

1] Inspect cable top to bottom for abrasions or rips in the outer coated fibreglass shell. If any abrasion or rip through the fibreglass shell exceeds 2" on a cable, that cable must be repaired or replaced. If the black internal covering on a cable has been abraided anywhere on a cable showing the yellow Kevlar core, the cable must be repaired or replaced.

Exercise caution on routing of control lines. Do not run the line where it may pass through the "Y" formed by two cables and abraid there.

2] Inspect cable for burns or overheating. The Kevlar core will not damage until the outer shell has exhibited signs of over-heating, such as dis-coloration, bubbling, peeling or charring. If the cable feels stiff in some areas, the cable should not exhibit any of the other over-heating signs. If it does, the cable must be returned to a repair station for furthur inspection/repair or replaced.

3] Inspect thimble areas at the end of each cable for looseness or bending of the thimbles. Be sure bottom thimbles attaching to clevis on two point suspensions are aligned and not catching.

Annual/100 hr Inspection of AFT's

1] All cables should be inspected for abrasions through the coating and fibreglass shell. All abrasions of the shell must be repaired. If the black inner shell has been cut or abraded into, replace or repair the cable. Refer to B], "Approved maintenance procedures of this bulletin for repair methods.

Inspect for tears and abrasions near the base of the cable where the cable attaches to basket suspension fitting. A vent line or other control line may be catching here which will tear the coated fibreglass shell and heat-shrink at the base. The heat shrink at this location can be repaired. If the black inner shell has been cut or abraded into, replace or repair it. Refer to B] of this bulletin.

2] Carefully inspect all cables for burns. The cable may appear stiff in some areas. If these stiff areas have dis-colored or show signs of bubbling of the cover material, the cable must be further inspected by opening up the fibreglass cover. The cover can be removed in the burned area by carefully making a shallow slice in the outer cover with a razor blade. Remove the fibreglass cover in the burned area and inspect for exposure of the yellow Kevlar core. If the core is exposed, inspect the core for browning or charring. If there is no evidence of discoloration of the core, the cable may be repaired. Refer to B] of this service bulletin. Otherwise, the cable must be replaced.

3] Gently tug at the coated fiberglass shell covering at each end of the cable where it enters under the heat shrink. If the shell pulls out from under the heat shrink, the cable may be repaired per B] of this service bulletin.

4] Inspect clear teflon jacketing around the lower cable end of 4-pt suspension systems where the cable loops around the suspension block. If the jacket has cracked open here, repair or replace the cable. Inspect all thimbles at the cable ends. If evidence of looseness or deformation is present, replace the cable.

B] MAINTENANCE OF AFT'S

The following items are considered preventative maintenance:

Minor exterior abrasions, fibreglass not torn

Abrasions which have not cut the fibreglass but have torn the outer silicone covering may be repaired by dabbing on silicone caulk or RTV and allowing to cure.

Fibreglass coating torn, Kevlar not exposed

If the Kevlar core is not exposed, obtain Spiral Wrap, P/N 51003-51 from Aerostar. Wrap Teflon spiral wrap to cover the damaged area as well as 4" either side of the damaged area. It is recommended, although not mandatory, to seal the area with silicone caulk or RTV before wrapping.

If the tear is at the bottom of the cable near the suspension fitting, the 4" overlap is probably not possible. In this case, the heat shrink should be removed so that the spiral can be started at the swage. Put new heat shrink over the cable end to help secure the wrap in place.

If the fibreglass is cleanly ripped and complete, it may be glued into place with P/N 51008-35 Vyna-Bond. Apply liberal amounts per directions on the tube. This fix is most effective where the coated fibreglass cover has torn or slipped from under the heat shrink at the cable ends. If a small area of black inner shell yet remains exposed, this area may be coated with a dab of silicone caulk or RTV to put a final seal on the area.

Heat shrink at bottom of cable torn

Obtain P/N 51003-51 heat shrink from Aerostar. This may be slipped over the bottom end of the cable and shrunk with a heat gun. Use care not to use a gun with higher than 350 F output.

Clear Teflon cover is severely abraided on 4-pt

Obtain P/N 52404 Thimbles for insertion into the loop formed at the cable end. Lock into place using one small tie-wrap at each end of the thimble.

The following items ARE NOT considered preventative maintenance and must be performed by an authorized repair facility.

Fibreglass cover is torn, Kevlar is exposed

Verify that the Kevlar is not damaged or kinked. If the Kevlar core has a "fuzzy" appearance, or strands are obviously broken, or if the cable appears to have been severely kinked in the exposed area, replace the cable.

If the torn area does not exhibit the above properties, the cable may be repaired by first sealing the abraided area with silicone caulk or RTV. After it has skinned over, the entire area may be wrapped with P/N 51003-51 spiral wrap, exercising at least 4" overlap beyond the torn fiberglass region. [This may not be possible if the tear has occurred at the base of the cable. Refer to "Fiberglass torn, Kevlar not exposed" for instructions].

Repairs to burned AFT's

Cracked, dis-colored or peeling fibreglass shell indicates the possiblity of furthur damage to the Kevlar. The shell must be trimmed away in the damaged area by carefully slicing the outer fibreglass shell for the length of the damaged area in addition to 4" either direction of the damaged area, if possible. Then peel the covering away in this area.

If the black inner covering has melted away, verify that no dis-coloration of the Kevlar has occurred. If no evident dis-coloration is present, the temperature has not been high enough to damage the Kevlar. The area must then be sealed as discussed in "Fibreglass torn, Kevlar exposed".

If the black inner covering has burned away, as evidenced by a distinct "crispy" feel, the possibility that the Kevlar core is damaged is high. The cable must be discarded and replaced.