

**MICROWAVE ANTENNAS**  
**KS-19570 PASSIVE REFLECTORS**  
**INITIAL ALIGNMENT**  
**ELEVATION AND AZIMUTH ADJUSTMENT**

**1. GENERAL**

**1.01** This section describes the method of initially aligning the KS-19570 Passive Reflector Antennas and the procedures for making elevation and azimuth adjustments to improve or restore the signal level.

**1.02** Since typical line-up operations at the time of installation of reflector assemblies involve alignment of two reflectors with respect to each other, provisions must be made for making adjustments at either reflector monitoring signals and communication between each site.

**2. PROCEDURE**

**2.01** Alignment of the reflector should be attempted only when winds at the reflector location do not exceed moderate velocities and weather conditions are expected to remain stable. In general, the lower the wind velocity the less difficult it will be to make adjustments.

**2.02** When performing work operations aloft or on the ground in the vicinity of the supporting structure, observe all applicable precautions given in Section 402-424-500.

**INITIAL ALIGNMENT**

**2.03** Initial alignment of the reflector will be accomplished in conjunction with the reflector installation work operation. Alignment must be completed prior to installing the backstay pipe assemblies.

**2.04** Proper alignment of the reflector is achieved by making a series of azimuth and elevation adjustments to obtain maximum amplitude of the R. F. signal.

**2.05** To make *azimuth adjustments*, detach the azimuth stabilizer from the reflector, loosen the jam nuts on the azimuth screw assembly, and turn the screw to obtain the desired direction of movement in azimuth of the reflector.

**2.06** To make *elevation adjustments*, loosen the two locking collars located on the elevation adjustment screw assembly inside the main trunnion weldment. This is done by backing out the fastener in the face of the collar with an Allen head wrench and threading each collar away from both ends of the body of the elevation screw assembly, by hand, a sufficient distance to permit movement of the elevation screw assembly through the range required. Turn the elevation screw assembly by means of the wheel assembly to raise or lower the angle of elevation of the reflector.

**2.07** When proper alignment of the reflector has been attained, as indicated by maximum received R. F. signal amplitude, tighten the elevation screw assembly locking collars, tighten the jam nuts on the azimuth screw assembly, adjust the length of the azimuth stabilizer, and reattach it to the reflector. Check the monitored signal level while immobilizing the reflector, to be sure reflector alignment has not been disturbed. Install the backstay pipe assemblies as covered in Section 402-424-200 and recheck the monitored signal level.

**ADJUSTMENTS TO RESTORE OR IMPROVE SIGNAL**

**2.08** If, after a reflector has been in service, it is determined that degradation or loss of signal level is due to misalignment of the reflector, it will be necessary to determine the cause of misalignment, make any repairs required, and realign the reflector while monitoring the signal level.

**SECTION 402-424-501**

**2.09** Before making elevation or azimuth adjustments, detach the backstay assemblies from the tower. Temporarily support the ends of the backstays in a manner that will not restrict movement of the reflector.

**2.10** Make elevation and azimuth adjustments as covered in 2.05 and 2.06.

**2.11** After proper alignment has been obtained, tighten elevation screw locking collars and jam nuts on azimuth screw assembly, adjust the length of the azimuth stabilizer and reattach it to the reflector, and adjust and reattach the backstays. Check the monitored signal level while immobilizing the reflector to be sure reflector alignment has not been disturbed.