

National Radio Astronomy Observatory

Charlottesville, Virginia

November 12, 1975

To: H. Hvatum, B. Peery

*Memo No. 35*

From: S. Von Hoerner, W. Y. Wong

Subject: Measurement Specifications for Panels

In the original write-up (letter from Aeronutronics-Ford, October 21, 1975), five items may need consideration.

1) The surface was to be measured in a 25 mm grid; this is 2,500 points. There were 8 such measurements suggested, giving a total of 20,000 point measurements. This should be reduced. We should make a difference between checking machining accuracy (many points), and measuring deformations (few points):

- a. Grid of 35 mm (1,260 points), measure only once.
- b. Select 50 points, well distributed; 1/2 on or close to ribs, 1/2 unsupported surface. Measure these for all deformations.

2) "Testing 3" (2 load conditions, remove, measure) may be replaced by:

- a. Support panel horizontally at 4 corners; have a man walk all over it for 2 minutes; place panel in fixture, and measure 50 points.
- b. Support panel upside-down at 4 corners; have a man walk on it 2 minutes; turn right-side-up, place in fixture, and measure 50 points to check hysteresis.

3) "Testing 4" (Wind). We might add: Compare applied load to panel weight; calculate gravitational dead load deformation.

4) "Testing 7" (Measure at extreme temperatures) looks extremely difficult! Maybe we can skip this one entirely.

5) Add: Measure the deformations with one support displacement of 0.05 mm, 0.5 mm and 5 mm. Displacement should be normal to the surface.