MORRISON HERSHFIELD

Load Tests on Wade Antenna DMX-68N Self-Supporting Tower

1. Test Setup

On June 4, 2009, Morrison Hershfield observed three full-scale destructive tests on a production model of Wade Antenna's DMX-68N 62 ft three-sided self-supporting tower. The tests were performed at Wade Antenna's facility in Brantford, Ontario. For each test, the tower was laid on the ground in a horizontal position, with the lower end of the tower secured at each of the legs to an elevated fixed frame, with wooden blocks providing intermediate supports along the length of the tower. Figure 1 shows the tower being prepared for testing.

Figure 1: Preparing the DMX-68N for testing

A lateral load was applied at the top of the tower, perpendicular to the central axis of the tower, using a 2 ton *Powerfist* hand chain hoist connected to a *Chatillon DWT-20000* digital crane scale (20,000 lb capacity at 10 lb increments). The load was applied at 10 lb increments, until failure of the tower was observed. Only the top sections of the tower were replaced following each test (all sections above the failure point, and one entire section below).

2. Test Results

All three tests yielded identical modes of failure: buckling failure of the compression leg member in Section 3 of the tower (sections numbered from the tower top starting with 1).

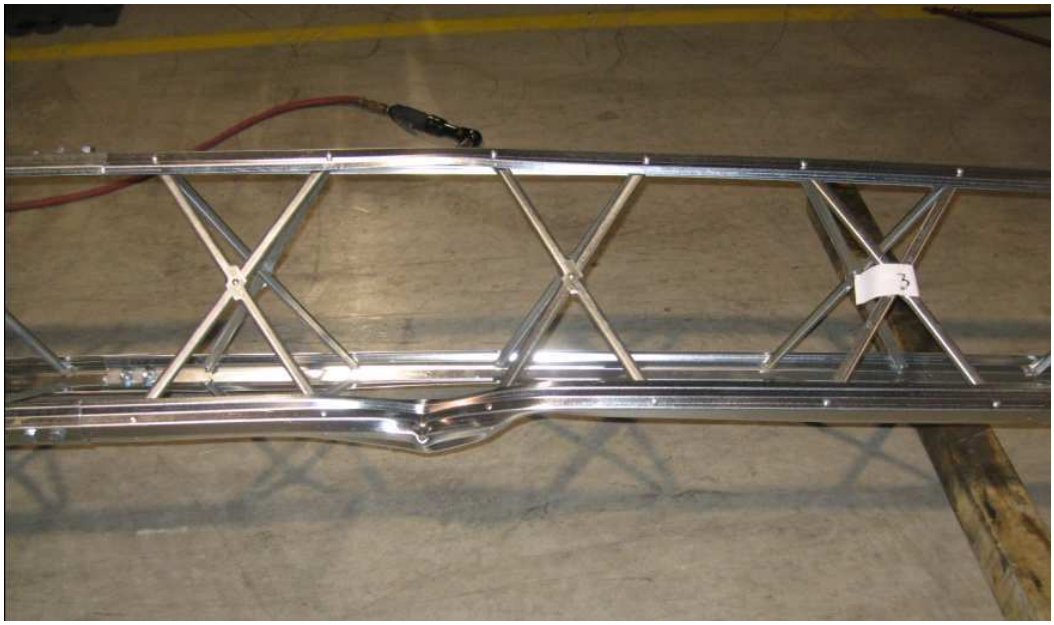

Figure 2: Failure of DMX-68N tower

Failure was observed at a load of at least 330 lb in all three tests, with variation of less than 20 lb for all tests.

3. Equivalent Wind Loading

The lateral load used in the tests can be translated to an equivalent wind area at the top of the tower at selected design wind speeds per TIA/EIA. Based on the limited test results observed, **it can be expected that a maximum allowable effective wind area of 4.4 ft_2 (or lateral load of 165 lb) can be applied at the top of the DMX-68N tower, at a fastestmile wind speed of 100 mph**. For a wind speed of 120 mph, the maximum allowable wind area is 3.0 ft_2 (or maximum top lateral load of 115 lb). Note that these loads must also account for the effects of wind on the tower itself. Therefore, the actual allowable load at the tower top will be less than these reported values.

These numbers are based on a factor of safety of 2.0 applied to the tested tower capacity. It is also assumed that the tower is constructed to the same standards and quality as the tested model.

If you have any questions concerning this report, please do not hesitate to contact the undersigned.

Yours truly,

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