MEMORANDUM For Construction Administrator.

Subject: Approval of drawings of 16-foot wind-tunnel scale equipment.

1. The following drawings, recently submitted by Mr. Hadley, of Taller and Cooper, have been examined:

Toledo Scale Company drawing   WT - 330
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2. Drawing WT-331 is approved as submitted.

3. In drawing WT-330, the diameter of the vertical drag tube is given as three inches. In the maximum thrust condition, the column load on this tube (including the capacity of the drag scale tare beam) will be 8,750 pounds. For a 3" O.D. by 1/4" wall SAE 1025 steel tube the critical column load is approximately 12,900 pounds, with a resulting margin of safety of 1.7. In view of the conditions under which the equipment is to be used, it is felt that a higher margin of safety is necessary. The use of a 4" O.D. by 1/4" wall SAE 1025 steel tube will give a critical load of about 32,700 pounds, with a margin of safety of 5.9. This value is considered satisfactory. Drawing WT-330 is therefore approved subject to the change in size of the vertical drag tubes from 3" O.D. by 1/4" wall to 4" O.D. by 1/4" wall.

4. One copy of each of the subject drawings is returned herewith.

David Biermann,
Senior Aeronautical Engineer.