

Docket No. SA-520

Exhibit No. 17-B

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Report of Corrosion Testing of Greases

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Copper and Aluminum Bronze Corrosion Testing

1. Objective. To determine the corrosive effects of the submitted greases (Mobil 28 and Aeroshell 33) on copper (CDA-110) and aluminum bronze (C-995) test coupons.
2. Background. See draft NTSB Grease Evaluation Report.
3. Method. Two methods of evaluation were selected: ASTM Method D4048 and Federal Test Method Standard 791C Method 5309.5. Each method was run the same way for both copper and aluminum bronze coupons. The coupons were individually placed in the neat greases supplied by the NTSB and in mixtures of the two greases (see Table 1.) The prepared samples were then placed in a 100°C oven for 24 hours, per cited method requirements.
4. Results. The copper and aluminum bronze coupons were examined at the end of the test and rated in accordance with ASTM D130 Copper Strip Corrosion Standard. Any rating greater than 1b is considered a failure. Table I summarizes the results.

Table I

Test Number	Material	Grease Type	Test Method	Results
1	Copper	100% Mobil 28	FTMS 791, 5309.5	Pass
2	Copper	100% Mobil 28	ASTM 4048	Pass
3	Aluminum Bronze	100% Mobil 28	FTMS 791, 5309.5	Pass
4	Aluminum Bronze	100% Mobil 28	ASTM 4048	Pass
5	Copper	100% Aeroshell 33	FTMS 791, 5309.5	Fail at interface
6	Copper	100% Aeroshell 33	ASTM 4048	Pass
7	Aluminum Bronze	100% Aeroshell 33	FTMS 791, 5309.5	Fail at interface
8	Aluminum Bronze	100% Aeroshell 33	ASTM 4048	Pass
9	Aluminum Bronze	90% Mobil 28 / 10% Aeroshell 33	FTMS 791, 5309.5	Fail, slight stain
10	Aluminum Bronze	90% Mobil 28 / 10% Aeroshell 33	ASTM 4048	Fail
11	Aluminum Bronze	50% Mobil 28 / 50 % Aeroshell 33	FTMS 791, 5309.5	Fail
12	Aluminum Bronze	50% Mobil 28 / 50 % Aeroshell 3350/50 Mix	ASTM 4048	Fail
13	Aluminum Bronze	90% Aeroshell 33 / 10% Mobil 28	FTMS 791, 5309.5	Pass
14	Aluminum Bronze	90% Aeroshell 33 / 10% Mobil 28	ASTM 4048	Pass