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DAMPER SELECTION FOR 596M 20/7 ACCR-TW

OBJECTIVE	<ul style="list-style-type: none"> To characterize 1704 and 1705 damper performance on 596M 20/7 ACCR-TWD conductor. To select most appropriate damper for minimizing vibration on 596M ACCR-TWD.
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COMPONENTS TESTED	ALCOA 1704-7 damper ALCOA 1705-7 damper
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PROCEDURE	<p>Damping efficiency was determined according to IEEE STD 664-1994 using the standing wave ratio method and the following conditions:</p> <ul style="list-style-type: none"> conductor tension of 25% RBS damper spaced 38" from fixed suspension shoe damper spaced at 70% of the calculated loop length for 15 mph wind peak-to-peak amplitude equal to $3/F$, where "F" is the span vibration frequency in hertz efficiency measurements at all undamped conductor harmonics between 7.6 and 56.9 hertz (equivalent of 2 to 15 mph wind speed)
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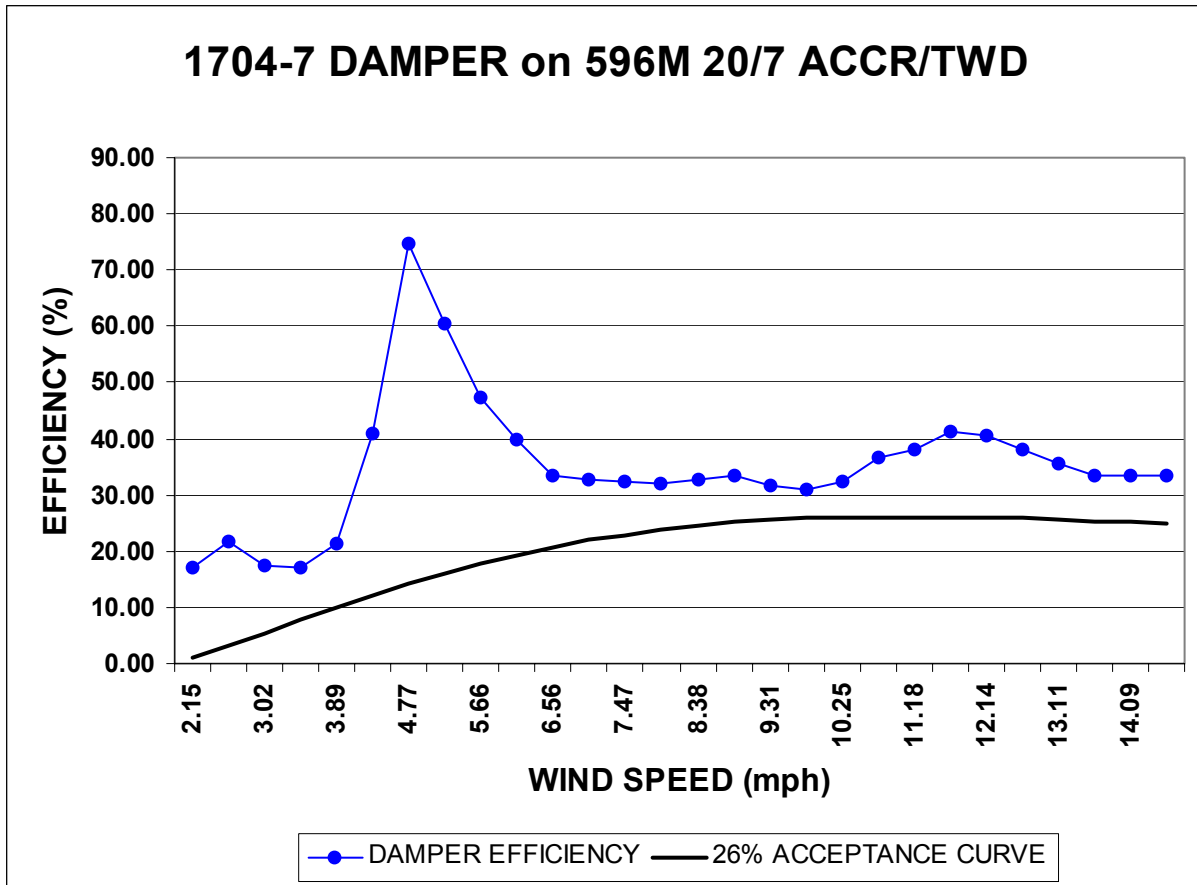
REQUIREMENT	Minimum overall damper efficiency of 15.5% based on the 15.5% acceptance curve.
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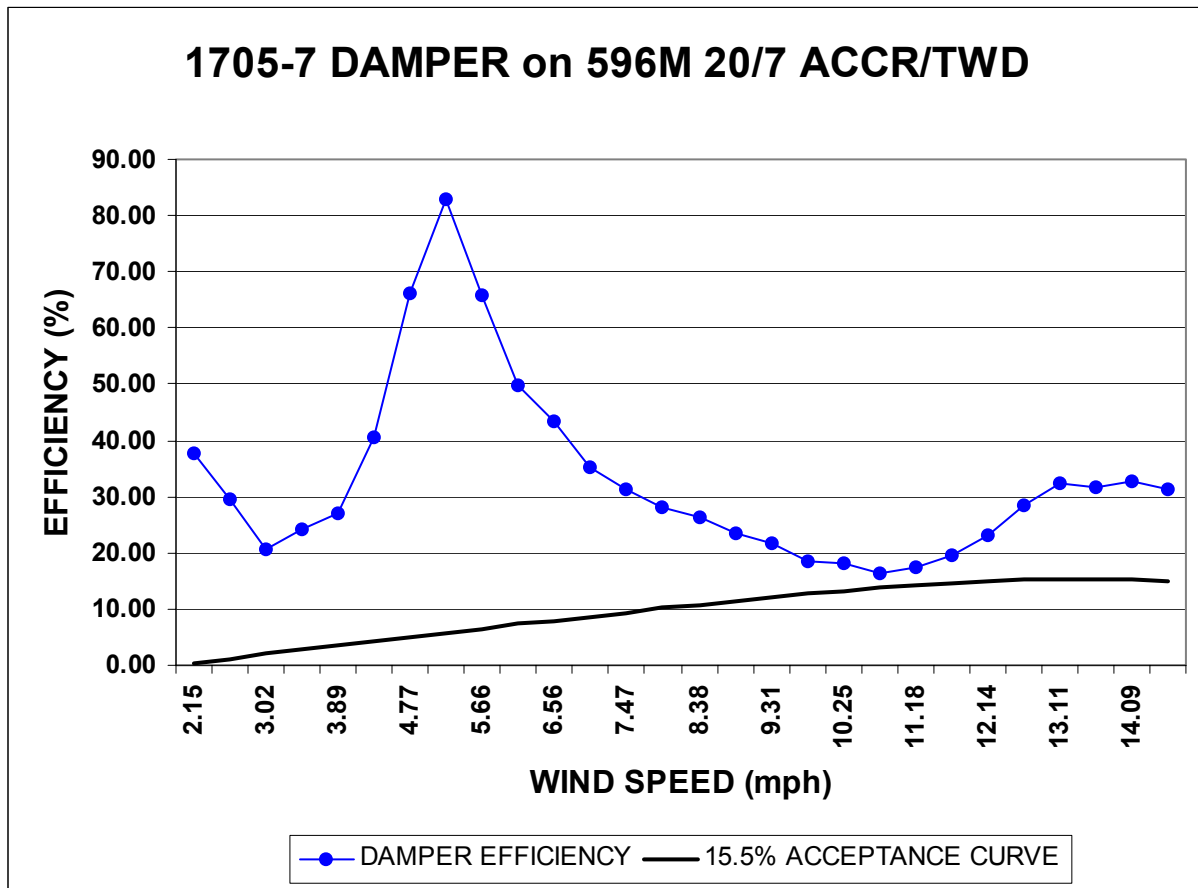
TEST RESULTS 1704-7	WIND SPEED (mph)	DAMPER EFFICIENCY (%)	WIND SPEED (mph)	DAMPER EFFICIENCY (%)	WIND SPEED (mph)	DAMPER EFFICIENCY (%)
OVERALL EFFICIENCY BASED ON 26% CURVE – 31.1%	2.15	17.17	6.56	33.33	11.18	38.03
	2.59	21.57	7.01	32.74	11.64	41.18
	3.02	17.56	7.47	32.39	12.14	40.46
	3.46	17.03	7.94	32.00	12.62	38.10
	3.89	21.18	8.38	32.63	13.11	35.54
	4.33	40.98	8.85	33.33	13.60	33.33
	4.77	74.55	9.31	31.76	14.09	33.33
	5.22	60.53	9.78	30.86	14.59	33.33
	5.66	47.14	10.25	32.47		
	6.10	40.00	10.71	36.49		

TEST RESULTS 1705-7	WIND SPEED (mph)	DAMPER EFFICIENCY (%)	WIND SPEED (mph)	DAMPER EFFICIENCY (%)	WIND SPEED (mph)	DAMPER EFFICIENCY (%)
OVERALL EFFICIENCY BASED ON 15.5% CURVE – 18.2%	2.15	37.87	6.56	43.33	11.18	17.48
	2.59	29.41	7.01	35.11	11.64	19.71
	3.02	20.61	7.47	31.13	12.14	23.08
	3.46	24.02	7.94	28.00	12.62	28.57
	3.89	27.09	8.38	26.32	13.11	32.23
	4.33	40.66	8.85	23.60	13.60	31.62
	4.77	66.06	9.31	21.64	14.09	32.74
	5.22	82.89	9.78	18.52	14.59	31.48
	5.66	65.71	10.25	18.18		
	6.10	49.81	10.71	16.22		

CALCULATION OF OVERALL EFFICIENCY	The overall efficiency is determined by dividing the measured efficiency at each frequency by the acceptance curve value for that frequency and multiplying by the acceptance curve basis (26% or 15.5%).
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CONCLUSIONS	<p>The 1704-7 damper provides the best damping performance over the range of frequencies equivalent to wind speeds between 2 and 15 mph based on its overall efficiency of 31.1%.</p> <p>The charts below provides a graphical presentation of the 1704-7 damping performance relative to the 26% curve and the 1705-7 damping performance relative to the 15.5% curve.</p>
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Disclaimer:

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