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AEROSPACE INFORMATION REPORT

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SKID CONTROL SYSTEM VIBRATION SURVEY

During 1957, an Industry Survey was conducted by the SAE A-5 Committee to determine realistic vibration requirements for skid control system specifications. A questionnaire was sent to sixteen airframe manufacturers, three Government agencies, and five skid control system manufacturers. This questionnaire asked for any information that might be available on the vibration characteristics that had been either experienced or calculated on an aircraft in the areas where skid control system components would normally be located, specifically at the axle and at the control box locations.

Replies were received from eleven airframe manufacturers, one Government agency, and two skid control manufacturers. Six of these replies stated that they had no information available. Eight airframe manufacturers reported either estimated or measured values as follows:

Company Reporting	Axle Vibration		Box Location Vibration	
	Meas.	Est.	Meas.	Est.
Boeing		X		X
Convair, S D			X	
Convair, F W		X	X	
Fairchild	X			
Lockheed	X			
McDonnell	X			
North American	X			
Northrop		X	X	

The reported values are plotted on Figures 1 and 2 showing the comparison of these values with the AS 483B vibration requirements.

Study of the figures shows that vibration may occur at the control box location with values varying from .03 g to 10 g and from 5 cps to 1,000 cps. Axle vibration values vary from .3 g to 200 g and 5 cps to 1,000 cps.

At the A-5 meeting in October, 1957, the results of this survey were reviewed and it was agreed that skid control system specifications should contain minimum vibration requirements with the stipulation that, if more extreme conditions were anticipated in the aircraft, the higher values should be used in the qualification test. Since the values of the survey are so widely scattered, it would be difficult, if not impossible, to accurately represent more rigorous conditions to be followed in a general specification.

This information is presented merely to show the conditions that exist in some airplanes and it should be used cautiously in requiring higher vibration values for any qualification test. It should be kept in mind that these axle vibration conditions may be transients and only occur for extremely short periods of time during a landing.

Prepared by SAE Committee A-5,
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