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## SAFETY RELIEF VALVE

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### Evaluation of Water - Accelerated Bearing Fatigue in Oil - Lubricated Bearings

E.E. ARMSTRONG (Member, ASLE) and LEONARDI	And	W R MURPHY (Member, ASLE)	And	P.S. WOODING ., Mobil Oil Co. Ltd
Mobil Research and Development Corp., Princeton, New Jersey 08540		Mobil Research and Development Corp., Princeton, New Jersey 08540		

TABLE 1 - THE EFFECT OF WATER ON ROLLING CONTACT FATIGUE LIFE IN LUBRICATING OILS

Base Oil Description	Water Content of Wet Oil	Fatigue Life Reduction Percent	Test Equipment & Hertzian Stress	Authors
Base Mineral Oil Dried Over Sodium	0.002%	48	Rolling 4 - Ball 8.60 Gpa (1.25x10 <sup>4</sup> psi)	Grunberg & Scott 1960
	0.014%	54		
	3.0%	78		
	6.0%	83		
Squalene 0.001% Water	0.01%	32 - 43	Rolling 4 - Ball 6.34- 8.95 Gpa (0.92-1.30x10 <sup>4</sup> psi)	Schatzberg & Falsen 1969
Dried Mineral Oil	Not stated- moist air environment	80	Rolling 4 ball	Ciruna & Szieleft 1972
Two Formulated Tetraester Oils - 0.005% Water	0.005	29.73	#204 Bearing 2.48 GPa	Fein 1969



### Safety Relief Valve Overhaul, Testing & Certification

New Valve Sales for Leser, Taylor, hydroseal, Crosby, Farris,  
Consolidated, Mack, ARI, Mercer, Seetru, John, Bailey and Goetze

