

N90-17088

## COMPARISON OF ARC TRACKING TESTS IN VARIOUS AEROSPACE ENVIRONMENTS

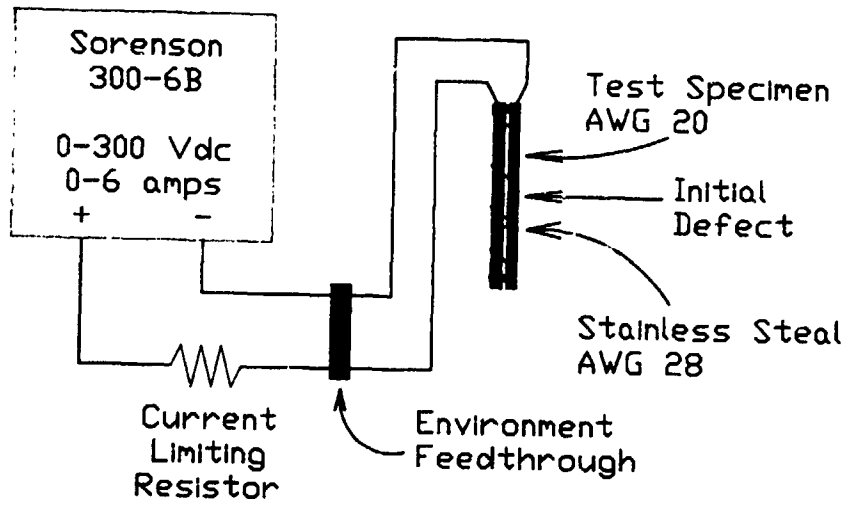
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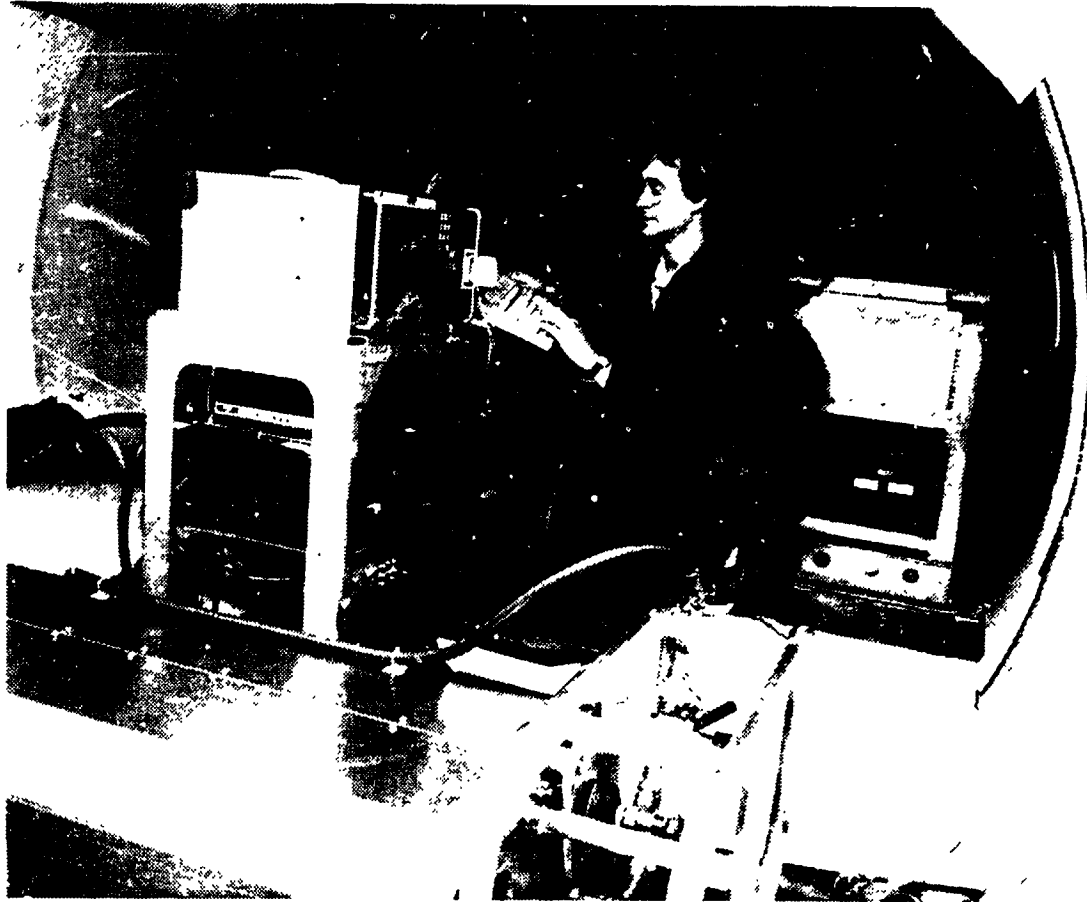
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5/11-2.0  
6:52  
1-11

- I. LeRC Arc Tracking Test Parameters:
  - A. Probability of Initiation
  - B. Probability of Reinitiation
  - C. Extent of Arc Tracking Damage
- II. Aparatus
  - A. ACE Belljar (Vacuum and atmospheric pressure, 1g)
  - B. Spacecraft Fire Safety Facility (SF)<sup>2</sup> (atmospheric, micro-gravity)
- III. Sample Description
- IV. Procedure
- V. Arc Tracking Test Results:
  - A. Barcell Wire & Cable Corp. M081381/7-20 28427
    1. Atmospheric Pressure, 1g
    2. vacuum (10<sup>-5</sup> Torr), 1g
    3. Atmospheric Pressure  $\mu$ g
  - B. Filotex Filartex T8C1G20
    1. Atmospheric Pressure, 1g
    2. Vacuum (10<sup>-5</sup> Torr), 1g
    3. Atmospheric Pressure  $\mu$ g
  - C. Tensolite TLT-200-20S
    1. Atmospheric Pressure, 1g
    2. Vacuum (10<sup>-5</sup> Torr), 1g
    3. Atmospheric Pressure  $\mu$ g
- VI. Discussion

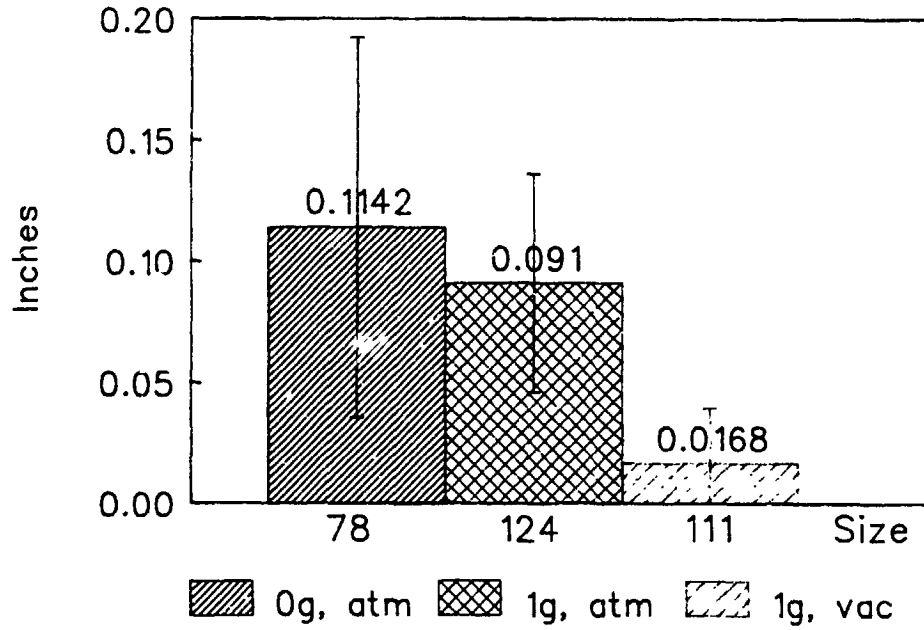




	Mil-W-81381			Filotex FilarTEX T8C1G20			Tensolite TLT-200-20S		
	$\mu$ g. latm	1g. latm	1g. vac	$\mu$ g. latm	1g. latm	1g. vac	$\mu$ g. latm	1g. latm	1g. vac
Number Of Tests	78	124	111	6	17	6	46	10	0
Mean	0.11424	0.09098	0.01678	0.35333	0.27583	0.13317	0.29674	0.12355	—
Std Dev $\sigma$	0.07834	0.04495	0.02302	0.25800	0.25312	0.10101	0.20804	0.10931	—
Std Err	0.00887	0.00404	0.00219	0.10533	0.06139	0.04124	0.03067	0.03457	—
95% Conf.	0.01739	0.00791	0.00428	0.20644	0.12032	0.08083	0.06012	0.06775	—
99% Conf	0.02289	0.01042	0.00564	0.27175	0.15839	0.10639	0.07914	0.08918	—

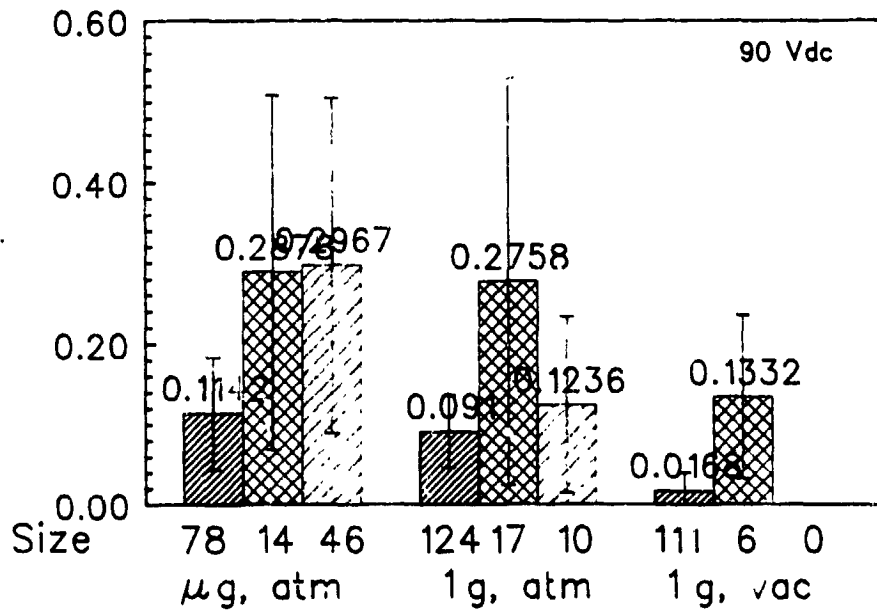
Table IV. Value units are inches. Duration of each test was 16 seconds.

Mil-W-81381 90 Vdc  
 Statistical Travel dist. (16 sec)



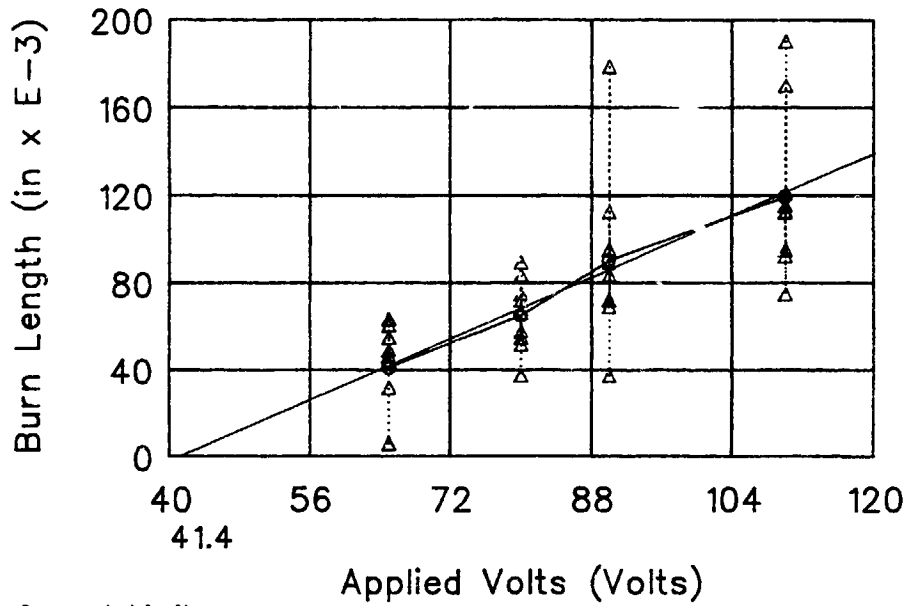
Arc Tracking Restrike  
 Statistical Travel dist. (16 sec)

81381 Filotex Tensolite



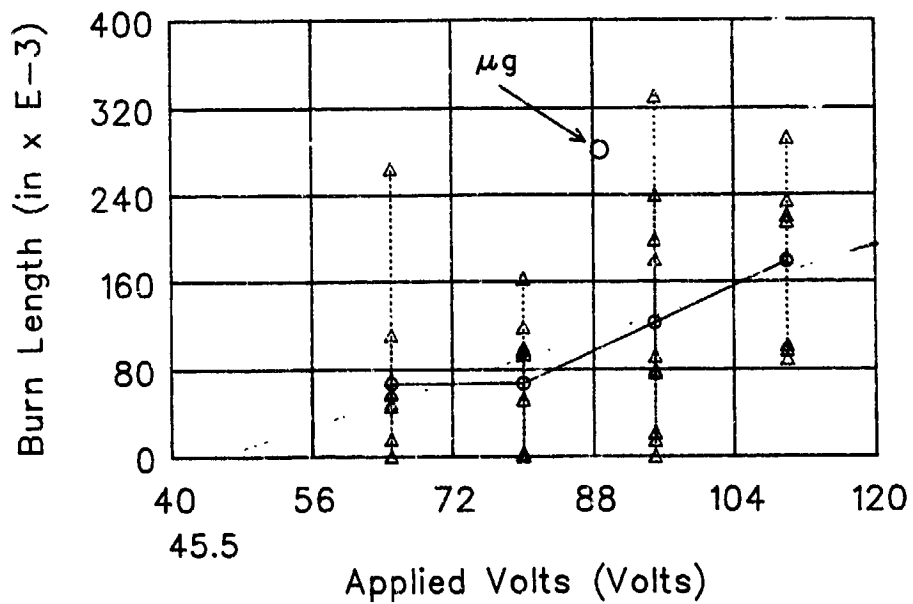
Mil-W-81381, 1g, 1 atm pressure  
 Burn Length (16 second duration)

.....△..... 41.49 .....△..... 65.41 .....△..... 90.48 .....△..... 119.59 —○— AVE



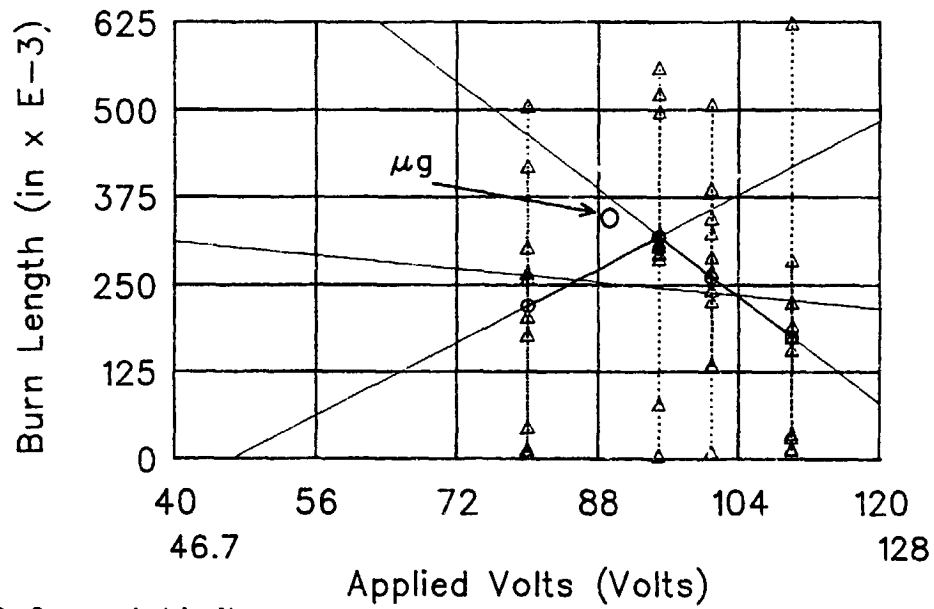
Tensolite, 1g, 1 atm pressure  
 Burn Length (16 second duration)

.....△..... 67.79 .....△..... 57.91 .....△..... 123.5 .....△..... 179.0 —○— AVE



Filotex, 1g, 1 atm pressure  
 Burn Length (16 second duration)

△ 220.16    △ 319.11    △ 261.54    △ 175.39  
 ○ AVE    +    +



25  $\Omega$  Current Limitor

