SAE G-12 Fluids Subcommittee
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AS5901
Revision B
2010 Ballot

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AS5901 Standard

Water Spray and High Humidity Endurance Test Methods

for

SAE AMS 1424 and SAE AMS 1428 Aircraft De-icing/Anti-icing Fluids

2010 Ballot ; AS5901B

Next Ballot is including;

- ✓ **Some minor editorial changes**
- ✓ **Clarifications (procedure)**
- ✓ **Add details and references**

Example of Proposed Changes
5.1 Standard Measuring Devices

Current Wording

5.1 Standard Measuring Devices

All temperature sensors, humidity sensors, electronic balance, anemometer, and timing device shall be maintained in a known state of calibration in accordance with a recognized international standards organization such as ISO 9001-2000.

Example of Proposed Changes
5.1 Standard Measuring Devices

New Proposed Wording

5.1 Standard Measuring Devices

All temperature sensors, humidity sensors, electronic balances, anemometers and timing devices shall be maintained in a known state of calibration, by means of NIST (National Institute of Standards and Technology) traceable certificates in accordance with a Quality Management System recognized by an international standards organization such as ISO 9001-2008 (or equivalent).

Example of Proposed Changes
Current Table 1 and Table 2 (AS5901A)

TABLE 1 - WATER SPRAY ENDURANCE

Air Temperature	-5.0 °C ± 0.5 °C (23 °F ± 1 °F)
Test Plate Temperature	-5.0 °C ± 0.5 °C (23 °F ± 1 °F)
Test Plate Slope	10.0° ± 0.2° from horizontal
Average Icing Intensity	5.0 g/dm²/h ± 0.2 g/dm²/h
Test Duration	30 minutes minimum

TABLE 2 – HIGH HUMIDITY ENDURANCE

Air Temperature	0.0 °C ± 0.5 °C (32 °F ± 1 °F)
Test Plate Temperature	-5.0 °C ± 0.5 °C (23 °F ± 1 °F)
Test Plate Slope	10.0° ± 0.2° from horizontal
Relative Humidity	More than 80%
Horizontal Air Velocity	0.20 m/s ± 0.05 m/s
Average Icing Intensity	0.30 g/dm²/h ± 0.05 g/dm²/h
Test Duration	2 hours minimum

Example of Proposed Changes - Table 1

TABLE 1 - WATER SPRAY AND HIGH HUMIDITY ENDURANCE TESTS CONDITIONS

PARAMETER	TEST REQUIREMENT	
	WSET	HHET
Air Temperature	-5.0 °C ± 0.5 °C (23 °F ± 1 °F)	0.0 °C ± 0.5 °C (32 °F ± 1 °F)
Test Plate Temperature	-5.0 °C ± 0.5 °C (23 °F ± 1 °F)	
Relative Humidity	-	More than 80%
Horizontal Air Velocity	-	0.20 m/s ± 0.05 m/s
Test Plate Slope	10.0° ± 0.2° from horizontal	
Test Plate Surface Roughness (average)	$R_a \leq 0.5$ µm	
Average Droplet Diameter	20 µm ± 2 µm	Not greater than 4 µm
Average Icing Intensity	5.0 g/dm²/h ± 0.2 g/dm²/h	0.30 g/dm²/h ± 0.05 g/dm²/h (less than 10 hours) 0.3 g/dm²/h ± 0.1 g/dm²/h (more than 10 hours)
Minimum Test Duration	30 minutes	2 hours

Example of Proposed Changes
Current Figure 4 (AS5901A)

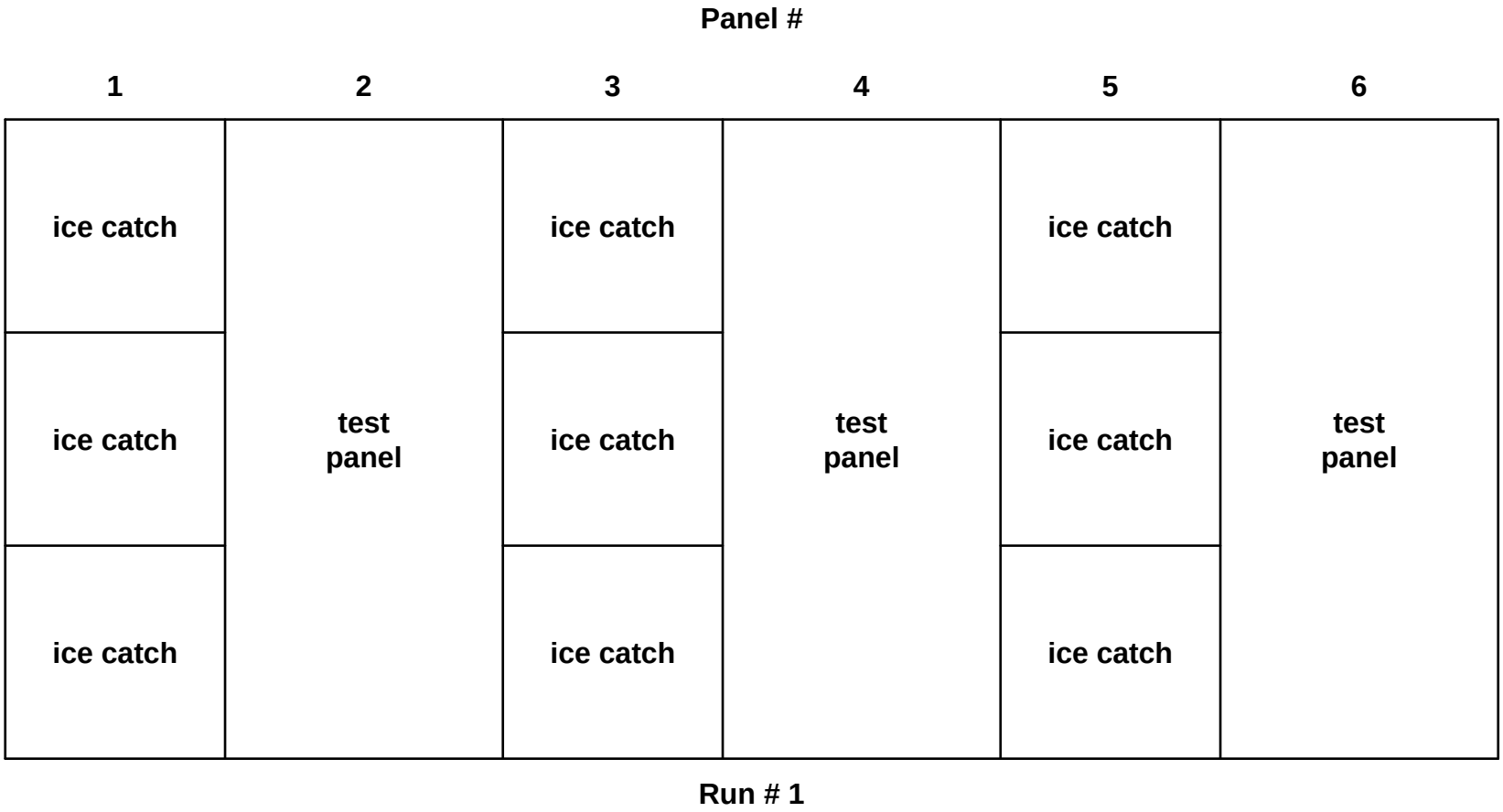

FIGURE 4
ANTI-ICING ENDURANCE TESTS PROPOSED ORDER OF FLUID APPLICATION TO A FROSTICATOR HAVING 6 TEST PANELS

Example of Proposed Changes - Figure 4

Test Run # 1

Position #					
1	2	3	4	5	6
Ice Catch # 1-1		Ice Catch # 3-1		Ice Catch # 5-1	
Ice Catch # 1-2	Test Plate # 2	Ice Catch # 3-2	Test Plate # 4	Ice Catch # 5-2	Test Plate # 6
Ice Catch # 1-3		Ice Catch # 3-3		Ice Catch # 5-3	

FIGURE 4
ANTI-ICING ENDURANCE TESTS PROPOSED ORDER OF FLUID APPLICATION TO A FROSTICATOR HAVING 6 TEST PANELS

AS5901 Next Revision

‘’Revision B’’ Should be submitted for Ballot Around Next 2010 Montréal Meeting

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