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Inflation Attachment Test Report

Part Number: 497-VOT





PROPRIETARY & CONFINDENTIAL

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INTRODUCTION

This report documents the results of the oral and manual inflation load tests and activation required for the Triton vest (#497-VO) per FAA TSO-C13G. The tests described herein were performed in accordance with the applicable requirements listed in SAE International Aerospace Standard (AS) 1354, Individual Inflatable Life Preserver, dated February 2016, as modified by Appendix 1 of the TSO.

TEST LOCATION

Testing and inspection will be performed at Lifesaving Systems Corporation's (LSC) manufacturing facility located in Apollo Beach, Florida by LSC personnel.

REFERNCES

Technical Standard Order TSO-C13G	*Life Preservers*, dated February 3rd, 2017
SAE International Aerospace Standard (AS) 1354	*Individual Inflatable Life Preserver*, dated February 2016

ACRONYMS AND ABBREVIATIONS

lb-pounds
kg- kilograms
m – Meters
cm- Centimeters
N/A – Not Applicable
P/N – Part Number
S/N – Serial Number

SECTION 1-TENSION LOAD REQUIREMENT

1.1 Oral Inflation Attachment:

The attachment of the oral inflation means to the flotation chamber shall be shown not to fail when a 100 pound (45.36 kg) tension load is applied to the inflation means outwardly from and perpendicular to the surface of the flotation chamber for at least 3 seconds.

An adapter having an inside diameter at least 0.75 inches (19.05 mm) larger than the outside diameter of the oral inflation means attachment shall be used to support the flotation chamber fabric during load application.

1.2 Manual Inflation Attachment:

The attachment of the manual inflation means to the flotation chamber shall be shown not to fail when a 250 pound (113.4kg) tension load is applied outwardly from and perpendicular to the surface of the chamber for at least 3 seconds.

An adapter having an inside diameter at least 0.75 inches (19.05 mm) larger than the outside diameter of the oral inflation means attachment shall be used to support the flotation chamber fabric during load application.

1.3 Manual Inflation Activation Attachment:

The activation means shall be shown not to fail or separate when it is subjected to a 60 pound (27.2 kg) pull for at least 3 seconds. For activation means that are designed to separate from the gas release mechanism, the pull tab/knob/ball assembly shall withstand a 30 pound (13.6kg) pull for at least 3 seconds without failure.

SECTION 2-PULL FORCE ACTIVATION REQUIREMENT

2.1 Manual Inflation Activation:

Activation of gas release shall be achievable by either hand, using a single downward pull of a red-colored pull-tab/knob/ball, having rounded edges, attached to the gas release mechanism. The top edge of each tab/knob/ball shall extend 1.5 to 3 inches (38.1 to 76.2mm) below the bottom edge of the donned life preserver. The downward force necessary to operate the gas release mechanism shall not exceed 15 pounds (6.8kg).

SECTION 3-ATTACHMENT REQUIREMENT

3.1 Webbing and Hardware Strength:

Webbing, and associated hardware, used to attach the life preserver to the wearer, shall be shown to withstand a 230 pound (104.33 kg) pull for at least 3 seconds without failure.

SECTION 4-EQUIPMENT UNDER TEST

Equipment Under Test (EUT)	Part Number	Serial Number
Triton Vest	497-VO	n/a

SECTION 5-EQUIPMENT TEST CALIBRATION

Equipment	Description	LSC Tool Number	Calibration Date	Calibration Due Date
Load Tester	Transducer Techniques SWO-10K Load Cell	88	5/24/2018	5/24/2019
GEI Ruler	48” Steel Ruler	27	5/24/2018	5/24/2019
Handheld Pull Tester	AWS 440lb TL-440 Pull Tester	91	5/30/2018	5/30/2020

SECTION 6-RESULTS

6.1 Oral Inflation Tube:

Success Criteria: Oral inflation tube must pass the noted test criteria.

Table 1:

Test Criteria	Measurement	Pass/Fail	Notes:
Tension Load: Inflation tube shall not fail when a 100 pound (45.36kg) load is applied. Hold for at least 3 seconds.	109.6lbs	PASS	

6.2 Manual Inflation Means:

Success Criteria: Manual inflation means must pass the noted test criteria.

Table 2:

Test Criteria	Measurement	Pass/Fail	Notes:
Tension Load: Inflation means must not fail when a 250 pound (113.4kg) load is applied. Hold for 3 seconds.	284.4lbs	PASS	
Pull tab: -length shall be 1.5” to 3” -Red-colored ball -Having rounded edges -Bottom edge of vest	2.25”	PASS	See Pictures
Tension Load: Shall not fail or separate when a 60 pound (27.2kg) load is applied to the activation means pull tab. Hold for 3 seconds.	63lbs	PASS	
Pull Force: The downward force necessary to operate the gas release mechanism shall not exceed 15 pounds (6.8kg).	5.8lbs	PASS	

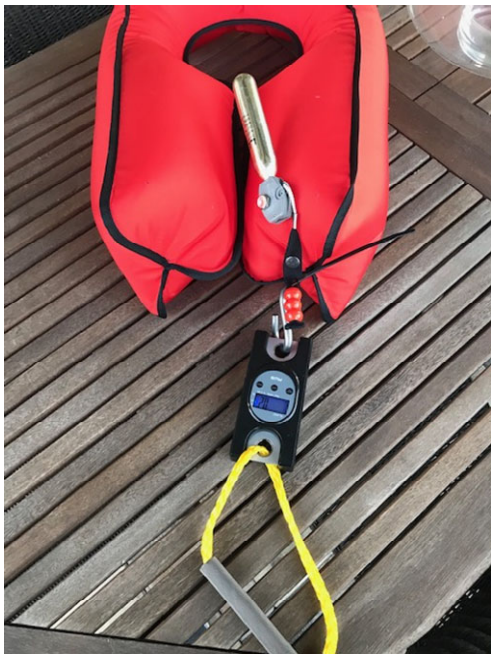
6.3 Webbing and Hardware:

Success Criteria: Webbing and hardware must pass the noted test criteria.

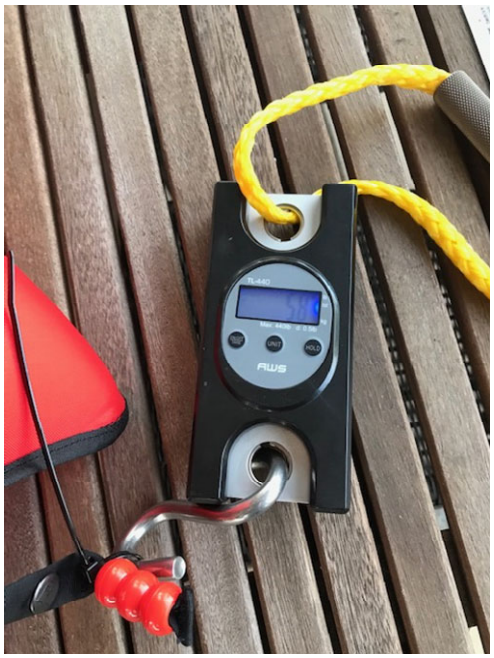
Table 3:

Test Criteria	Measurement	Pass/Fail	Notes:
Tension Load: Webbing and hardware shall withstand a 230 pound (45.36kg) load. Hold for at least 3 seconds	263lbs	PASS	

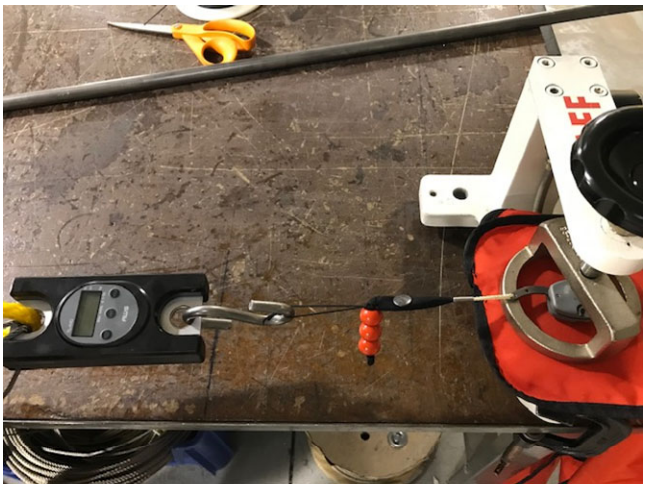
SECTION 7-PHOTOGRAPHS



Pull force on inflator setup



5.8lbs of force to actuate gas



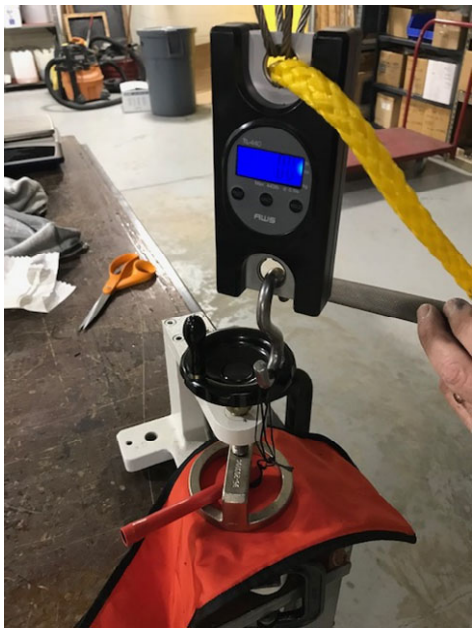
Setup for pull test on manual inflator pull tab



63lbs of force on pull tab



Oral tube clamped in fixture



Setup for oral tube pull test



109.6lb pull force on oral tube



No damage, no pull out



Manual Inflator clamped in fixture



Setup for manual inflator pull test



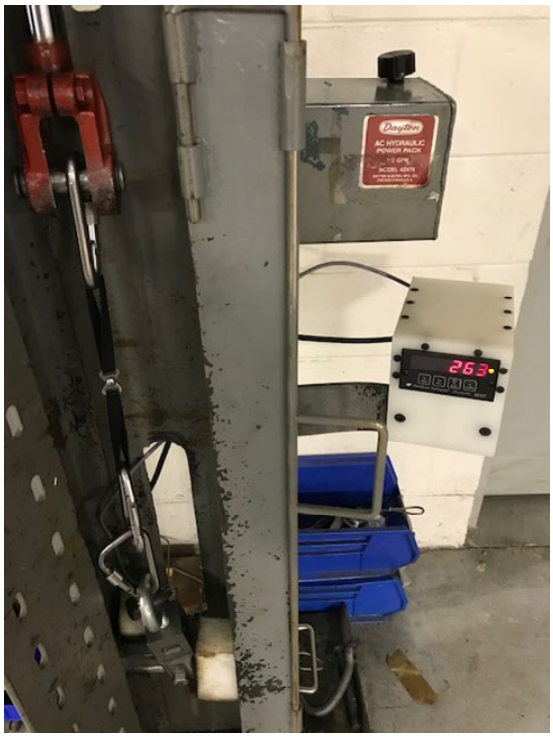
284.4lb pull force on manual inflator



No damage, no pull out



Setup for attachment hardware and webbing pull test



263lb pull force on webbing and attachment hardware



2.25” pull tab length