LIFESAVING SYSTEMS CORPORATION

LSC Test Report Number: F-730-740-MBT
Revision: A

Comfort, Fit, and Adaptability Test

Osprey Vest with Inflatable Collar

P/N: 740-MBT



PROPRIETARY & CONFINDENTIAL

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OWNED BY LIFESAVING SYSTEMS AND MAY NOT BE DUPLICATED, COMMUNICATED TO OTHER PARTIES OR USED FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF LIFESAVING SYSTEMS CORP.

Prepared by: Thomas Beach — Date: 10-NOV-2020
Thomas Beach, Engineering

Reviewed by: Robert Jerger — Date: 11-NOV-2020
Robert Jerger, Quality

Document History				
Revision	Issue Date	Description of Revision/Modification	Revised by	Approved by
A	02-NOV-2020	Initial release	-	RDJ

Table of Contents

PURPOSE: 4
ACRONYMS AND ABBREVIATIONS: 4
REFERENCES: 4
TEST FACILITY: 4
SUMMARY OF TESTS PERFORMED & RESULTS: 5
SECTION 1: TEST REQUIREMENTS 6
1.1 IN-WATER ADJUSTMENT TEST 6
1.2 IN-WATER MOBILITY TEST 6
1.3 BREATHING EFFICIENCY TEST 6
SECTION 2: TEST RESULTS 7
2.1 IN-WATER ADJUSTMET TEST RESULTS 7
2.2 IN-WATER MOBILITY TEST RESULTS 7
2.3 BREATHING EFFICIENCY TEST RESULTS 7
SECTION 3- PHOTOGRAPHS: 8

PURPOSE:

This report documents the results of a wearers ability to properly adjust the Osprey vest and inflatable collar while in the water and to make way through the water without suffering from airway occlusion of any kind.

ACRONYMS AND ABBREVIATIONS:

LSC – Lifesaving Systems Corp.
P/N – Part Number
S/N – Serial Number
%SpO2 – Peripheral capillary oxygen saturation percentage, an estimate of the amount of oxygen in the blood. More specifically, it is the percentage of oxygenated hemoglobin (hemoglobin containing oxygen) compared to the total amount of hemoglobin in the blood (oxygenated and non-oxygenated hemoglobin)

For this test, a commercial off the shelf Pulse Oximeter was used to measure %SpO2

REFERENCES:

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

TEST FACILITY:

As all publicly available aquatic facilities were closed due to pandemic response, testing was performed at the private residence of an LSC employee.

TEST SUBJECT:

As the likelihood of airway occlusion increases with neck size, the test subject chosen was a 215 LB male with a 17 ¾" neck.







SUMMARY OF TESTS PERFORMED & RESULTS:

Section	Test Description	Results
2.1	In-Water Adjustment Test	The test subject easily located and adjusted the waist straps to achieve a proper fitting of the Osprey vest and collar assembly.
2.2	In-Water Mobility Test	The test subject easily moved through the water with no reported problems or trouble in breathing while swimming
2.3	Breathing Efficiency Test	The test subject reported no difficulty in breathing during the swim test of the Osprey vest and collar assembly. Blood circulation was not restricted.

SECTION 1: TEST REQUIREMENTS

1.1 IN-WATER ADJUSTMENT TEST

The test subject shall enter the water with loosened adjustment straps on the fully inflated Osprey collar. In water of sufficient depth to suspend the subject by the inflated vest/harness assembly, the test subject shall easily locate and adjust the waist straps until a proper fit is achieved. (as part of test 1.3, test subject's %SpO2 will be recorded immediately prior to water entry.

1.2 IN-WATER MOBILITY TEST

The test subject shall swim for five minutes utilizing varying strokes back and forth in the pool and shall subjectively assess his ability to move through the water. As part of test 1.3, he shall also assess his ability to breath while wearing the Osprey inflatable collar throughout the test.

1.3 BREATHING EFFICIENCY TEST

Immediately after leaving the water, the test subject's %SpO2 shall be measured to discover how much, if any, his blood oxygen saturation declined while wearing the Osprey collar during the test. Test subject should report no problems with breathing during the test (subjectively) and no degradation of %SpO2 shall be observed (objectively) using a pulse oximeter.

SECTION 2: TEST RESULTS

2.1 IN-WATER ADJUSTMET TEST RESULTS

The test subject easily located and adjusted the waist straps to achieve a proper fitting of the Osprey harness and collar assembly. PASS

2.2 IN-WATER MOBILITY TEST RESULTS

The test subject moved through the water for five minutes using breaststroke, side stroke, and crawl stroke to sufficient effect – moving through the water with no reported problems or trouble in breathing while swimming. PASS

2.3 BREATHING EFFICIENCY TEST RESULTS

%SpO2 was taken for the test subject using a pulse oximeter placed on the test subjects right index finger before and after the five-minute swim test. No decrease in %SpO2 was noted. The test subject reports no difficulty in breathing during the swim test of the Osprey harness and collar assembly. PASS

SECTION 3- PHOTOGRAPHS:





Adjusting side straps in water



Moving forward in water

*Note: The wearer has full range of vision while in the water. The requirement of at least a 120-degree viewing arc is satisfied.



SpO2 Reading Before Swim

(10:31am)



SpO2 Reading After Swim

(10:38am)