



OWNER'S MANUAL

**MD1127 LIFE PRESERVER
BY MUSTANG SURVIVAL**

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INTRODUCTION

Mustang inflatable life preservers are items of primary survival equipment, and as such, every precaution shall be taken to assure proper storage, maintenance, and handling. The life of the wearer may well depend on the condition of the life preserver and the security of its attachments and equipment. This publication provides the information required to inspect, test, and maintain the inflatable life preserver model MD1127. This model has been approved by the Federal Aviation Administration (FAA) as Type I Life Preservers according to the Technical Standard Order TSO-C13f.

WARNING:

CONSTANT WEAR USE ONLY TO BE DONNED PRIOR TO EACH FLIGHT

Note: The conditions and tests required for TSO approval of these articles are minimum performance standards. It is the responsibility of those desiring to install the articles either on, or within, a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards; the articles may be installed only if further evaluation by the applicant documents an acceptable installation, and is approved by the Administrator.

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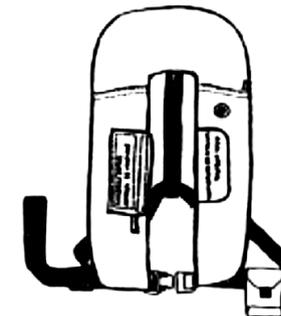
DESCRIPTION

A. General

Mustang Survival is pleased to present an FAA approved inflatable life preserver, the MD1127. This product is designed with sufficient buoyancy to turn an unconscious person face upwards within five seconds of immersion. Fully inflated, the life preservers provides a minimum effective buoyant force of 35 lbs. The MD1127 is universal in size and is designed to fit most adults comfortably. This can be worn over bulky outer clothing, and has adjustable nylon waist belts which secure an easy-to-wear position allowing for maximum freedom of movement. Each life preserver is equipped with a small rescue light, which is water activated and may be used as a beacon for emergency rescue situations.

The life preserver is inflated by using a carbon dioxide gas inflation system. It is a common characteristic that all inflatable life preservers will gradually permeate CO₂ gas through their cell material with time, and a softening of the cell will be observed over extended periods. In the MD1127 this is over come by providing an oral inflation system to top up the pressure in the cell. The oral inflation system may also provide added pressure to the cell in cold temperature conditions, since under these conditions the CO₂ gas will not expand as greatly as in warmer temperatures. Finally, in the event that the CO₂ inflation system fails to operate, the oral inflation system may be used as a backup system to fully inflate the life preserver.

Figure 1: MD1127



B. The MD1127 Life preserver

1. Design and Construction

The MD1127 incorporates a dual chamber inflatable cell, which is separated by an internal floating baffle. The floating baffle allows either chamber to fully inflate the life preserver. The life preserver is styled as a protective collar fitted around the neck and front chest. The protective collar is constructed from a highly durable 6 oz. Nomex Omniweave. The outer shell of the MD1127 is not integral with the inflation cell, but acts as a cell enclosure by opening the Velcro® seals; when deflated, the inflation cell is folded and placed back into the cell enclosure as shown in Figure 4.

The MD1127 includes a small carry pouch attached to the waist belt, and two small pockets located on each of the insides of the front cover. A safety whistle is supplied with the life preserver, attached to the bottom right section of the bladder. A sea light is attached to the left side of the bladder.

2. Inflation System

The MD1127 dual chamber inflatable cell design incorporates a primary inflation cell accessed from a CO₂ inflation system and an oral inflation system, along with a secondary cell accessed from its own oral inflation system. In case the primary inflation cell has been punctured, or fails to inflate, the life preserver may be inflated orally by the secondary inflation cell. The oral inflation systems consist of an oral tube and oral valve. The oral valve is normally closed, and is opened by depressing the mouthpiece when inflating or deflating.

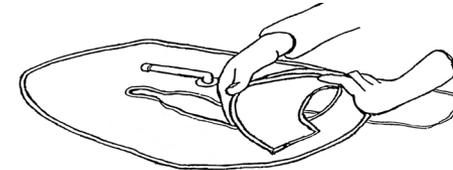
3. Inflation Cell

The polyurethane coated nylon dual chamber inflation cell is not integral with the outer shell of the life preserver, but is connected to the outer shell only by the inflation system. The dual chamber cell is in the form of an inflatable head support collar, which fits around the neck and chest. The primary chamber of the cell is located on the outer front side of the inflation cell, while the secondary cell is located on the inner side of the inflation cell. The dual chamber cell is fully inflated with one 35 gram cylinder of compressed CO₂ gas.

4. Fasteners

The MD1127 has easy-to-use, Velcro®, hook and loop fasteners on each side of the front cover. This allows the life preserver to be opened when inflated, and easily folded when deflated. When inflating, the Velcro® fasteners burst open allowing the inflation cell to expand out of the cell enclosure.

Figure 1: Deflating the buoyancy cell



a) Starting from the end farthest from the oral valve, tightly roll up the life preserver.



b) Depress the oral valve to release the trapped air.

5. Belt

A durable nylon waist belt is attached to the life preserver. This belt is fastened and fitted using a quick-release buckle and waist belt adjuster. To tighten the belt, pull the extra webbing from the waist belt adjuster, as shown in Figure 5. After adjusting the fit, the excess webbing is led through a belt loop to keep it out of the way.

6. Markings

The life preserver is marked with indelible stencil and all markings appear in both English and French. The life preserver is marked with donning instructions, which are located on the left back cover. The donning instructions are printed clearly enough to be read even in dimly lit surroundings.

7. Package

A bright yellow polyurethane coated nylon package is provided for storage purposes. The package is closed by a Velcro® patch placed on its cover flap. This allows the package to be opened quickly in the event of an emergency.

OPERATING INSTRUCTIONS

A. The Buoyancy Cell

As with any type of personal protective apparel, your Mustang inflatable will perform most effectively, and its life will be extended, if it is properly cared for. Periodically, and prior to each use, visually inspect the fabric and the buoyancy cell for signs of damage. Periodically test the buoyancy cell to make certain that it does not leak by following the testing procedures outlined in this manual. Once a month, inflate the cell by mouth until it is firm and leave overnight. If it is airtight, the cell should still be inflated the next day.

Also check that all seams and joints are securely sewn and that the fabric, straps and hardware are still serviceable. At the same time, test the oral inflation valve for leakage by immersing the valve in a glass of water. Bubbles in the water may indicate a faulty valve. If your Mustang inflatable is damaged, replace it immediately.

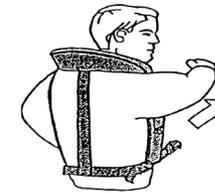
1. Deflating the Buoyancy Cell

To fully deflate the buoyancy cell, squeeze and roll up the cell gently, then depress the top of the oral valve until all the air or gas is removed, as shown in Figure 2. For the MD1127, the deflated buoyancy cell is then to be returned to its storage position within the cell enclosure (see Figure 4).

Figure 3: Donning and Operating Instructions



a) Insert first arm between back strap and front cover.



b) Insert second arm into other side of life preserver.



c) Fasten waist belt.



d) Pull inflation handle sharply downwards.



e) Tighten waist belt adjuster.

2. Inflating the Buoyancy Cell

Manual inflation

Inflation with CO₂ gas is accomplished quickly and simply by pulling down sharply on the beaded pull cord on the right hand side of the life preserver. This action releases gas into the buoyancy cell, which then fully inflates within 5 seconds.

Oral Inflation

In the event that the CO₂ gas cylinder fails to inflate the buoyancy cell, or if the cell needs to be topped up during use, your inflatable life preserver can be inflated by mouth through the inflation tube. To inflate by mouth, depress the mouthpiece and blow into the tube until the cell is fully inflated.

3. Fit Adjustments

Immediately after the buoyancy cell is fully inflated, adjust the waist belt by pulling or releasing the waist strap until the life preserver fits comfortably, without riding up (see Figure 5).

CAUTION: Under no circumstances should a partially inflated buoyancy cell be re-inflated by discharging the CO₂ gas cylinder because it may overfill and rupture the cell.

B. Donning Instructions

The following steps outline the procedures for donning the MD1127 life preserver, see Figure (3a - 3e) for illustrations of each step. Proceed as follows:

1. Insert the first arm into the life preserver between the back strap and the front cover, then pull over the shoulder.
2. Insert the second arm into the other side of the life preserver.
3. Fasten the waist belt.
4. Pull the inflator pull cord (located at the right front cover) sharply downwards to activate inflation.

NOTE: If required, the life preserver oral inflation valve is located on the left front cover of the life preserver.

5. Tighten the waist belt adjuster by pulling the excess webbing of the belt.

**Figure 4:
Packing the
MD1127
Inflatable Cell**



a) The MD1127 with its cell deflated and ready for packing



b) Fold each side of the inflation cell so that the V elcro® tape along the enclosure flaps is exposed.



c) Fold the enclosure flaps over the inflation cell so that the V elcro® tape is completely sealed.

C. Folding Procedures

1. Lay the life preserver flat, and completely deflate the chamber by using a vacuum source. If a vacuum source is not available, deflate by depressing the oral valve while rolling up and squeezing the life preserver. When rolling the chamber start from the ends and roll towards the valve, while depressing the oral valve. When completely rolled, first release the valve, then unroll the life preserver. The life preserver should be thoroughly evacuated.
2. Pack the inflation cell back into the cell enclosure; shown in Figure 4.
3. Ensure that the CO₂ cylinder is fully charged, tested, and ready for activation, with its safety clip in place.
4. Loosen the waist belt by feeding all excess webbing back into the waist belt adjuster, as shown in Figure 5a.
5. Place the life preserver face down as in Figure 6a.
6. Fold the bottom ends of the life preserver up and away from packer; Figure 6b.

7. Fold the top of the life preserver towards the packer, over the folded ends; Figure 6c.
8. Slide life preserver in this position into package bag as shown in Figure 6d.
9. Close Velcro® patch.

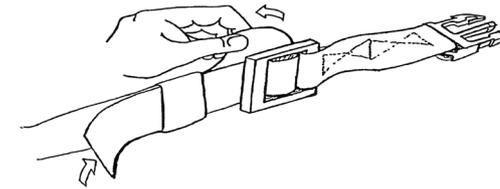
D. Laundering Procedures

Do not dry clean. Do not use chlorine bleach. Do not iron. Do not dry in front of a radiator or other source of direct heat. Do not store in a wet condition.

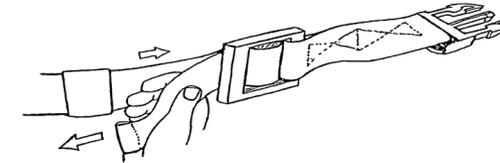
To launder your inflatable:

1. Remove the CO₂ gas cylinder.
2. Hand wash or sponge down the fabric in warm soapy water, then rinse with clean water. If machine washing use the gentle cycle with a mild detergent or soap.
3. Hang to dry in a well-ventilated area, which is free from direct sunlight. A plastic coat hanger would be preferable to clothes line clips, so that the life preserver material is not wrinkled or damaged when wet. Do not tumble dry.
4. To avoid premature aging of the nylon buoyancy cell and stitching, the life preserver should not be hung in direct sunlight for extended periods of time. To avoid mildew hang dry the life preserver after every use, and be sure not to roll up the product or stow it away while damp.
5. Be sure to replace the CO₂ gas cylinder, if necessary, and check that the lever on the inflator is in the up or "ready" position with the safety clip in place. Remember to be following the instructions and observing the cautions given previously.
6. When dry, store the life preserver unfolded, or on a coat hanger in a dry, cool, airy environment.

Figure 5: Fit Adjustment of the Waist Belt



a) To loosen waist belt, pull excess belt in the direction shown above.



b) To tighten the waist belt, pull excess belt as shown above.

Figure 6: Packing Procedures

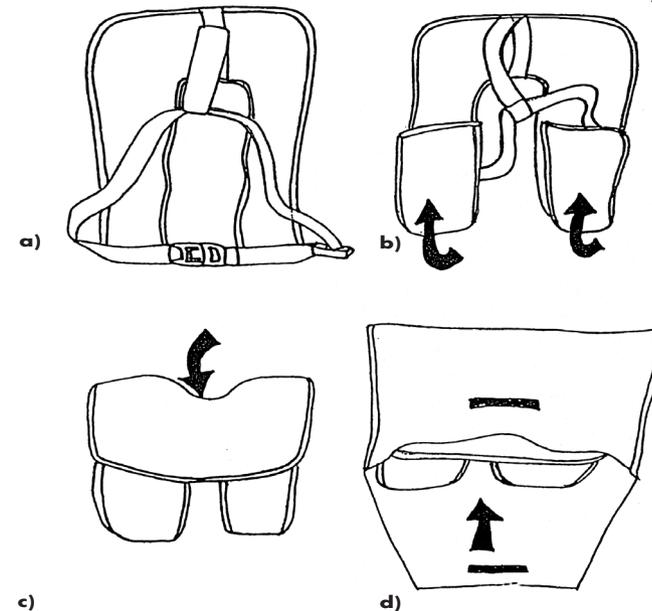
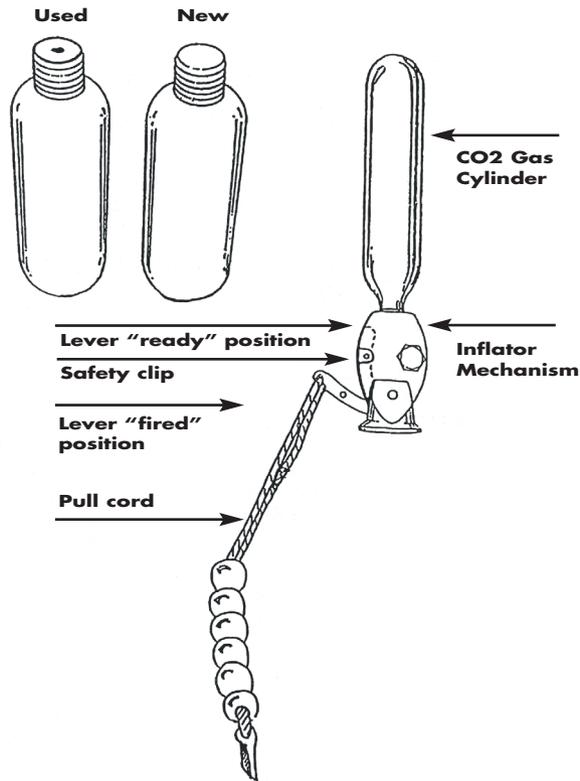


Figure 7: The Inflator



MAINTENANCE, INSPECTION AND TESTING PROCEDURES

Your life preserver should be inspected and tested annually to maintain all components of the life preserver, and its associated equipment in a serviceable condition, and to ensure that the inflatable cell will withstand the specified pressure. For life preserver that are in use, a more frequent interval is required. Full inspections are to be performed only by authorized service technicians, but you may perform the following tests, prior to using the life preserver and on a regular basis thereafter, to ensure minimum safety precautions are met.

A. Component Testing

1. Inflatable Cell Test

The inflatable cell can be inflated by the oral inflation valve or the CO₂ inflation valve. The inflatable cell is to be tested by the following method:

- a. Inflate the cell slowly; the cell shall fully inflate so that it opens the cover and becomes rigid. Leave the cell fully inflated for a period of 6 hours. At the end of the 6 hours the cell shall still feel hard to the touch and maintain its general rigidity.
- b. Submerge the inflated cell in water and check all seams and all cell material for bubbles. If bubbles are detected the cell must be replaced.

NOTE: Do not attempt to repair any portions of the inflation cell, all inflation cells failing the Inflatable Cell Test must be returned to the Mustang Dealer where the life preserver was purchased.

- c. If no leaks are detected from the inflation cell, check for leaking valves as detailed in the CO₂ and Oral Inflation Valve Tests listed below.
- d. Upon completion of these tests, if any of the minimum requirements have not been conformed to, the life preserver shall be returned to your Mustang Dealer.

2. Oral Inflation Valve Test

The oral inflation valve shall be tested for leaks with the appropriate inflatable cell inflated to a pressure of 2 psi. The procedure is as follows:

- a. Place a small amount of soap and water solution to the valve stem opening, using care to prevent the entry of water into the valve. Leakage will be indicated by the bubbling of the soap solution.
- b. Lower the pressure in the inflatable cell and blow by mouth through the oral inflator valve by pushing the valve inwards to open the air passage. The effort required to inflate the chamber shall not be excessive, and it must close tightly when blowing has ceased.
- c. The valve shall be considered damaged if it fails either test and the life preserver must be returned to your Mustang Dealer for servicing.

3. CO₂ Inflation Valve Test

To test the CO₂ inflation valve, operate the manual lever several times. Ensure the lever moves fully and that the piercing pin travels far enough to puncture sealing disk. Visually check to see that the piercing pin is in place, and protrudes sufficiently. Ensure the piercing pin is erect, and does not bend to one side.

B. Inspection Procedures

1. Unpack the life preserver and lay it flat on a clean, dry, smooth surface.
2. Visually examine the life preserver for signs of damage or missing components. Visually inspect for the following:
 - a. punctures, abrasions, or holes to the protective collar or the inflatable cell;
 - b. broken or missing fasteners and hardware;
 - c. loose, damaged, or missing thread;
 - d. corrosion to metal fittings;
 - e. condition of the CO₂ pull cord
3. Test the mechanical and/or the oral inflator mechanism, where applicable, by performing the CO₂ Inflation Mechanism Test and/or the Oral Inflation Valve Test.
4. Perform the Inflatable Cell Test.
5. Check the inflator before use. As a safety precaution it is recommended that you check that the inflator is complete, armed, and ready for use. To do this, follow these simple instructions:
 - a. Open the front flap on the right front cover on the MD1127, to expose the inflator.
 - b. Unscrew and remove the CO₂ gas cylinder from the inflator and inspect the small end of the CO₂ gas cylinder. If the end is pierced, the CO₂ gas cylinder is empty and must be replaced (see Figure 7).
 - c. Make sure the lever on the inflator is in the up or "ready" mode with the red safety indicator clip in position. If the lever is in the down or "fired" position, it must be reset into the "ready" position and the red safety clip installed before inserting the CO₂ gas cylinder.

CAUTION: Moving the lever into the up or "ready" position after the CO₂ gas cylinder is in place will cause the CO₂ cylinder to discharge into the buoyancy cell.

d. Insert the CO₂ gas cylinder, small end down, and screw into the threaded hole on the inflator.

e. Fold the collar and fasten the Velcro® tabs. (See figure 4: Folding Procedures)

Make sure that the pull cord with its pull knob is hanging freely below the inflator and that the red caution flag is not visible.

6. Check the Sea Light system expiry date, if the system has expired remove it from the suit, and follow the instructions in line (g) below, otherwise proceed as follows. Check:
 - a. the light dome for cracks,
 - b. the battery pack casing for cracks and damage,
 - c. the power cord and plug for damage and corrosion,
 - d. the cell for deterioration, i.e. swelling
 - e. the operation of the circuit and bulb, by applying 1.5 volts across the leads. The bulb should light under these conditions; if it does not light renew the bulb or the entire unit.
 - f. the fitting of the rescue light. If the existing rescue light is to be replaced follow these procedures for fitting the new light:
 - i) Remove the existing light, and remove the Velcro® patch from the back surface of the bulb.
 - ii) Test the new circuit and bulb by procedure (f) above.
 - iii) Adhere the Velcro® patch to the new bulb using contact cement.
 - iv) Ensure plugs are secure in battery.
 - v) Wrap the extra lead around the battery, and push the battery into the left side pocket of the life preserver
7. Inspect the Whistle:
 - a. for cracks or signs of wear or damage to the casing
 - b. Check the operation of the whistle by blowing the whistle several times, the sound should be clear and not muffled.
 - c. If either the whistle shows signs of damage, or the sound is unsatisfactory the whistle is to be replaced, and a new whistle tested.
8. To obtain the maximum benefit from your life preserver it is recommended that you become familiar with its flotation characteristics. (See Figure 8) Test it by standing in water chin deep and inflating the buoyancy cell. Lift your feet off the bottom and note how you float in various positions and water conditions. Preferably practice this a number of times wearing different types of bulky and lightweight clothing until you have absolute confidence in your life preserver's performance.

C. Repairs

All repairs shall be conducted only by fully qualified, authorized technicians. Do not attempt to repair or replace any item or part of your life preserver. Return all damaged life preserver for repair to the Mustang Dealer where the item was purchased.

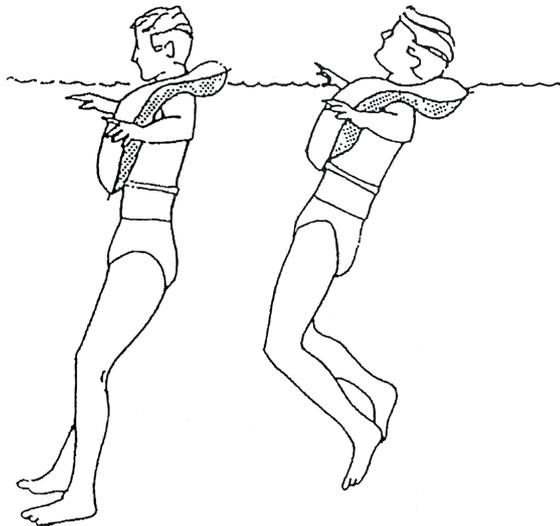
D. Warranty Registration

Your Mustang inflatable has been manufactured from the finest of materials under strict quality control. It is warranted against defects in materials and workmanship to the original owner for a period of one year when purchased from an authorized Mustang dealer.

Mustang makes no warranty of fitness for a particular purpose and no other representations or warranties of any kind, expressed or implied, with respect to this product.

To allow us to process your requests, please return your Mustang inflatable to an authorized Mustang Dealer with your name, address and a description of the nature and circumstances of the problem encountered.

Figure 8: Testing Flotation Characteristics





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