



SHIP SAFETY BULLETIN

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Subject: Inspection and Maintenance of Inflatable Lifejackets and Personal Flotation Devices

Purpose

This bulletin is a reminder to vessel owners and operators, as well as crew, that it is important to inspect and service inflatable lifejackets and personal flotation devices (PFDs) regularly.

Scope

This bulletin is for owners, operators and crew of all vessels using inflatable lifejackets and PFDs. Transport Canada regulations require that all safety equipment on board recreational and commercial vessels be maintained in accordance with the manufacturer's instructions or recommendations.

The information in this bulletin applies to both inflatable lifejackets and PFDs, although only the term "lifejacket" is used below.

What you need to know

Recent inspections of both commercial and recreational vessels have shown that many of the inflatable lifejackets on board may not work because they have not been maintained properly.

This bulletin is a reminder that you should inspect and service your inflatable lifejacket regularly. **If you do not know when your lifejacket was last serviced, you should check it now.** If you are not comfortable doing this yourself, contact the manufacturer or local service representative. Make sure that you have the user manual for your exact make and model of lifejacket, and follow the instructions.

If this maintenance is neglected, there is a strong possibility that the equipment will not function as intended and may not inflate at all when you fall into the water or use the pull-tab.

Keywords:

1. Inflatable PFD
2. Lifejacket
3. Maintenance

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Using an inflatable lifejacket

Use an inflatable lifejacket only if you can

- commit to learning how to use the back-up emergency inflation systems;
- commit to checking the lifejacket every time you wear it; and
- make sure that the lifejacket is serviced according to the manufacturer's instructions.

If you cannot make these commitments, then a non-inflatable foam lifejacket might be more suited to you, your passengers or crew.

If the primary inflation system fails, you must know how to use the lifejacket's back-up system and be able to do this quickly while in the water. This is one of the reasons why inflatable lifejackets are not recommended for people who cannot swim well.

Not all inflatable lifejackets are automatic. Some require you to pull a tab to inflate them. You should know where the pull tab is located and be sure that you can always access it. Make sure that you know which type you are wearing.

If your lifejacket does not automatically inflate, or fails to inflate when you use the pull-tab, use the oral inflation tube to fill it with air. You might need to find this tube while you are swimming. You should know where it is and be able to find it without looking. It might have a cap on it that you will have to remove before blowing into the tube. You can also use the tube to top up the lifejacket if it does not fully inflate or loses buoyancy.

You must inspect your lifejackets regularly to make sure they work properly, and they must be serviced as the manufacturer recommends.

Maintaining an inflatable lifejacket

Unlike a foam lifejacket that will allow you to float as soon as you hit the water, an inflatable lifejacket relies on a few different components to work. It needs a full carbon dioxide (CO₂) cylinder, an undamaged bladder to hold the CO₂ and an inflation mechanism to release gas from the cylinder into the bladder to provide buoyancy. If any of these components fails, the lifejacket might not keep you afloat.

Transport Canada requires that inflatable lifejackets be sold with the manufacturer's instructions that explain how you should inspect and service them. **You must read and follow these instructions, and keep them for future reference.**

If you do not have the instructions, find the model number and manufacturer's name on a label in your lifejacket. You can contact the manufacturer for a copy, or you might be able find the instructions on line.

General rules for inspecting and servicing lifejackets

- Before you put on your lifejacket, check the following:

- Damage or signs of wear: Are there any tears, burns or puncture marks, or is there any mould?
 - Status indicator: Is it green?
 - Inflation pull-tab: Is it easy to reach?
 - CO₂ cylinder: Check that it is installed correctly and does not show signs of corrosion (like rust).
- Once a month or any time you think the bladder may be damaged, check the bladder and oral inflation tube for leaks.
 - Perform this test according to the manufacturer's instructions.
 - Inflate the lifejacket orally until it is firm and let it stand for 16 hours. Check to make sure that it retains its firmness.
 - Check the valve on the oral inflation tube by holding the valve under water. Bubbles should come out of it continuously. To make sure that the lifejacket does not accidentally inflate during this test, do not let water contact the inflation mechanism (if your lifejacket is automatic).
 - If there is any indication of leakage, have the lifejacket checked by the manufacturer's service provider.
 - Once a year, perform a full inspection that includes testing for leaks; checking and replacing any expired components; checking the inflation mechanism to see if it works correctly; and checking the oral inflation tube, harness, buckles and bladder cover.
 - You can also do this any time you think there is a problem with your lifejacket.

Lifejacket components can expire

Check with your lifejacket's manufacturer to confirm when the CO₂ cylinder and other parts of the inflation mechanism need to be replaced. These dates can vary, depending on how the lifejacket is used. Generally, parts should be replaced at least every three years.

Some inflation mechanisms are designed to be activated by water pressure, while others use a tablet called a bobbin that dissolves when you fall into the water and activates the mechanism, releasing the gas from the CO₂ cylinder into the bladder. Humidity, heat and other factors may affect the function of the bobbin. Check with the manufacturer for the recommended replacement date. Recommended replacement dates may vary, depending on the environment in which lifejackets are used, but generally they should be replaced within three years of service. The date of manufacture is stamped on the bobbin.

Re-arming after inflation

If you inflate your lifejacket using the CO₂ cylinder, it can be used again – but you will need to replace the cylinder, re-arm the inflation mechanism and repack the bladder. To do this, you will need a re-arming kit and instructions. Always keep on board a re-arming kit that is manufactured specifically for your make and model of lifejacket. Re-arming an inflatable lifejacket is not hard, but it needs to be done correctly. **If you are unsure about how to re-arm your lifejacket and think it is still usable, contact the manufacturer or local service provider.**

Testing the operation of your inflatable lifejacket

It is recommended that you become familiar with the operation of your lifejacket before you need to use it in an emergency. A good time to do this is when you first get your lifejacket and again whenever you perform a complete service of the lifejacket or need to replace an expired CO₂ cylinder or expired inflation bobbin.

To test the operation of your lifejacket:

1. Find a safe, shallow area in the water where you can stand up if you need to.
2. Put on your lifejacket properly before entering the water. Remember that if it works automatically, it will inflate when submerged.
3. If the lifejacket is not automatic, pull on the tab.
4. Once your lifejacket is inflated, relax in the water. Check how to remove some CO₂ from the bladder and how to top it up with the inflation tube. If you need to swim, it is usually easier to do this on your back.
5. Once you are out of the water, rinse the lifejacket and leave it inflated overnight to check for leaks. Then deflate it, and re-arm and re-pack it according to the manufacturer's instructions.

If you are worried about how your lifejacket performed during your test, or do not know how to re-arm or re-pack it, contact the manufacturer or local service representative.

This bulletin is a reminder of the importance of regularly inspecting and servicing your inflatable lifejacket. If you do not know when your lifejacket was last serviced, it should be checked now. If you are not entirely confident in doing this yourself, contact the manufacturer or local service representative. Ensure that you have the user manual for your make and model of lifejacket, and follow the instructions in it.