



Safety Management System

# Operations Advice Notice

No. 03/24

1<sup>st</sup> July 2024

## Glider Pilot Parachute Safety Management

**Purpose.** This Operations Advice Notice (OAN) supersedes OAN No 01/21 dated 17 November 2021 and provides updated advice and guidance for ALL members on parachute safety management.

This advice is *not applicable* to parachutes associated with glider Ballistic Recovery Systems (BRS), which *are* subject to Airworthiness requirements and maintenance regimes specified by BRS manufacturers and sailplane type certificate holders.

**Context, Benefits and Regulations.** The parachute performs a vital safety function for the glider pilot. In the event of emergency egress from a glider inflight, it is extremely important that the parachute deploys quickly and correctly to carry the pilot safely to the ground.

The pilot's parachute is far more than a seat cushion; it is important emergency equipment, a lifesaving device. The benefits of parachutes can be affirmed by Gliding Australia members and overseas pilots who have used them out of necessity, thus joining the Caterpillar Club. We also have members who have used parachutes for sporting recreational purposes. Regrettably, we have recently seen reports of overseas pilots baling out but parachutes failing to open fully or correctly, with fatal consequences.

Glider pilot emergency parachutes are not installed on aircraft as a component. They are important, pilot optional safety equipment. Consequently, pilot emergency parachutes are not subject to the continuing airworthiness and maintenance requirements of Gliding Australia.

The Australian Parachute Federation (APF) is the peak body and ASAO<sup>1</sup> for parachuting and skydiving operations and equipment. [APF Manuals](#) specify the regulatory, operational, maintenance and repacking regimes for parachutes, including, canopies, maintenance, rigging and harness/containers. APF qualified persons have been consulted in developing this OAN. Most riggers and packers who maintain Gliding Australia parachutes are licenced by the APF and as such operate under APF rules and regulations.

- *Glider pilot emergency parachutes are important safety equipment and must be kept in proper condition in accordance with approved instructions published by the manufacturer.*
- *Any maintenance or repacking must be performed by approved riggers and packers authorised by the APF or ADF<sup>2</sup>.*
- *The owner of a parachute has a duty of care to ensure the well-being of others and should therefore comply with the manufacturer's requirements and equipment bulletins as a minimum.*
- *Wearing and use of parachutes is not mandated by Gliding Australia but may be prescribed by your gliding club or in a gliding competition or event.*
- *Pilot In Command risk appetite may warrant use of parachutes as safeguards.*

<sup>1</sup> Approved Self-Administering Aviation Organisation (ASAO)

<sup>2</sup> Australian Defence Force

Gliding Australia does not mandate wearing and use of parachutes, except for:

- test or evaluation flights, or
- as required by competition rules for competitions and regattas, or
- for circumstances approved by CASA, eg air displays.

**Gliding Australia strongly recommends** wearing and use of parachutes in any higher risk flying, or where required for safe control access, cockpit comfort, centre of gravity, etc, or where pilot in command's risk appetite warrants safeguards.

**Responsibilities and Duty of Care.** The owner of the emergency parachute is responsible for *keeping the emergency parachute in a proper condition in accordance with the approved instructions published by the manufacturer.* This applies to sole owners of gliders and parachutes, to registered operators and owners including syndicates and clubs. The owner has duty of care.

When parachute owners elect repack cycles of longer than the manufacturer's instructions, they are assuming a greater personal risk.

The duty of care extends to the safe stowage and handling of the parachute when not being worn, to daily safety inspection prior to use, the proper fitment and adjustment of the parachute when worn, and to ensuring maintenance and rigging of emergency parachutes is performed in accordance with the approved instructions published by the manufacturer, by APF or ADF approved persons.

A certificated and appropriately rated parachute rigger or packer holding authorities issued by either the APF or the ADF may repack and repair emergency parachutes as per their rating and type experience.

Emergency parachutes owned and used by visiting overseas pilots must be maintained in accordance with their country's legislation and meet Australian repacking and duty of care requirements set by host clubs, Competition Directors, and Event Directors.

**Parachute Manufacturer Repack Cycle and Service Life Limits, as prepared from various manufacturers of emergency parachute assemblies commonly used by glider pilots in Australia.** Parachute service requirements vary widely. Manufacturer requirements have primacy in APF approved systems of maintenance and repack. The following table summarises manufacturer repack cycles and equipment service life limits for parachute assemblies commonly used in Australia.

Manufacturer	Models	Repack Cycle	Service Life	On Condition
Parachutes Australia	Thinpack Slimpack	6/8 months <sup>3</sup>	20 years for Container	Yes for 26' LOPO and Aerolite canopies. SB9502 Rev3 applies
Mars	ATL 88/90-1/1A/1B ATL 88/92-S1 ATL 88/98-S1	12 months	20 years	
Para-Pernalia	Softie, all models	12 months	20 years	
National USA	All models	6 months	20 years	
Bruggemann Germany	RFA II	12 months	15 years	
Strong Enterprises / Paradigm Parachute	Poptop Back, Chair and Seat	12 months	Unlimited	Yes
Thomas Sport Equipment	Poptop Back, Chair and Seat	No cycle noted	No cycle noted	Yes

<sup>3</sup> Repack 8 months manufacturer, 6 months by APF regulations  
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Note – APF riggers may require more frequent cycles from condition assessment. Equipment bulletins in the APF website may alter these requirements. Equipment damage or abuse may require component replacement. Individual **parachute maintenance and repack record cards are completed by the rigger/packer. These cards are stored in the appropriate pocket on the parachute container,**

Designs and materials have changed for the better, but all parachutes may suffer degradation. APF packers have noted that glider pilot parachutes have been damaged by gravel, dirt and mishandling, and water contamination from outdoors exposure, water ballast, drinking water and urine, and even from battery acid and electrolytes.

**Perishable Components.** Any parachute owner who elects to have parachutes repacked at longer intervals than those specified by manufactures, faces higher risks from degradation of perishable components. The most common issue is degradation of rubber bands used to stow the canopy lines securely in the container. These bands may degrade to a “gooey mess”, most caused by age (unusually long period of time between repacks) and heat, causing adhesion of lines and slowing correct deployment of the canopy, or causing asymmetric deployment of the canopy, which may in turn lead to a malfunction. Brass grommets in older chutes may exacerbate this degradation. When every fraction of a second matters, this may be a critical factor in survival.



*Parachute rubber bands holding the canopy lines*

Canopies, containers and harnesses may be degraded by contact with water, acids, alkaloids, oils and electrolytes. If such contact occurs, your safest option is to have the parachute reinspected, cleaned and repaired by a packer or rigger.

**Ripcord Pins and Pilot-chutes.** APF riggers repacking glider pilot emergency parachutes have noted two kinds of serviceability issues that might affect the proper operation of parachutes.

A description of two of the parachute system components will help here:

- a. The container within which the parachute canopy and lines are packed is held securely closed by metal pins attached to the ripcord. When the ripcord is pulled by the user, the pins are withdrawn, and the container is immediately opened; and
- b. The pilot-chute immediately and vigorously springs out, inflates and then pulls the parachute canopy into the air. The pilot chute design and construction ensure an urgent, enthusiastic and safe launch into the airstream by the strong coil spring it contains. During repacks, the rigger/packer compresses the pilot chute into the container and locks all closed with the ripcord and its pins.

The Ripcord passes through a protective “Bendix” tube. The rip-cord pins are attached to the ripcord. The pins are inserted into nylon loops which have passed through grommets on each flap of the container. This securely houses the entire parachute assembly within the container. The pins are protected by the top flap fabric of the container.

Damage to pins has resulted from pilots squeezing into and out of a tight cockpit, with the parachute sliding against the headrest and backrest. The forces involved may be higher for heavy and larger

pilots, with greater interference with cockpit structures. It is possible for the ripcord pins to be disturbed by this movement and/or become bent and/or be pushed up and out of the closing loop, causing a partial premature deployment whilst in the glider.

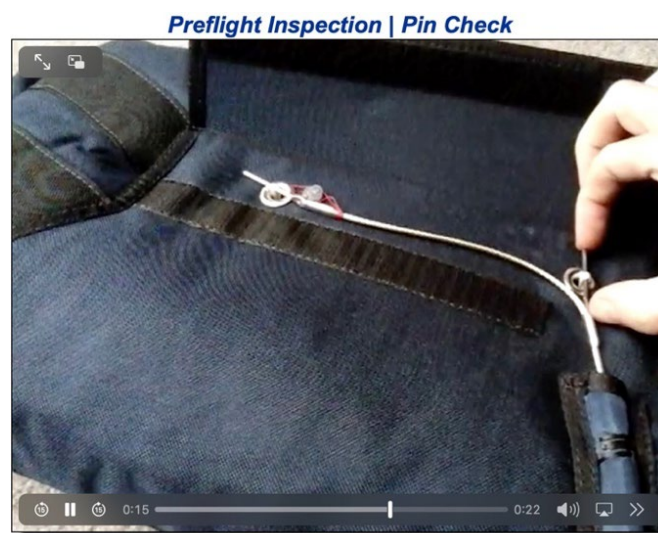
In addition, side-to-side movement while pushing backward against the glider seat can cause the pilot-chute's cylindrical spring to become distorted within the container. This can then cause an offset from the correct central alignment, resulting in the spring being pushed internally to one side, thus causing uneven geometry and discomfort. Significantly, upon ripcord pull, the resultant pilot-chute launch may be in an asymmetrical path in a deployment situation. Bent pins may also impede a smooth and correct rip-cord operation.

- *Parachute degradation may adversely affect parachute canopy deployment.*
- *Elastic parachute line retainer bands may degrade over time and cause a malfunction during deployment by uneven and/or uncontrolled unstowing of lines.*
- *Moisture, acids, oils, electrolytes, gravel, mishandling may affect parachute reliability.*
- *Physical damage and/or distortion to ripcord pins and pilot-chute springs can result from mechanical forces when entering and leaving cockpits.*

In APF sport parachuting practice, both main and reserve containers, ripcords and ripcord pins are routinely and systematically checked several times before every jump.

The first is an inspection of the system by the jumper before “gearing-up” for their skydive. The next is a formal “buddy check” of every jumper prior to boarding the aircraft. This is an individual responsibility prescribed by the APF Operational Regulations. Many skydivers then ask for a “pin-check” by a fellow jumper just prior to exiting the aircraft.

Ripcord and pin problems can and should be identified by routine pre-flight inspections of the parachute assembly by a rigger, club official, or experienced/approved person.



*Pin Check illustration from <http://www.softieparachutes.com/maintenance/>*

Gliding Australia recommends that careful and routine parachute inspections be conducted as part of the *pre-flight inspection*. In club environments where parachutes may be used many times per day, by multiple users, consideration should be given to an additional periodic inspection regime by a rigger or club official, or “parachute daddy/mamma” at regular intervals within the repack cycle e.g. quarterly or bi-monthly.

- *Daily inspections before flight, and periodic condition assessment inspections, are strongly recommended.*
- *In gliding clubs, recommend assign a person to be the Parachute Officer for the club's parachutes.*

**Training.** Gliding Australia does not yet mandate training in emergency parachute operation, including wearing, use, glider emergency exit procedure and the like by APF or ADF instructors. It does, however, recommend emergency guidance by knowledgeable and suitably experienced persons. Experienced persons can provide valuable safety insights and advice, e.g. pilots nights and safety briefings. *Changes to the training system are being developed and will be issued as a new unit.*

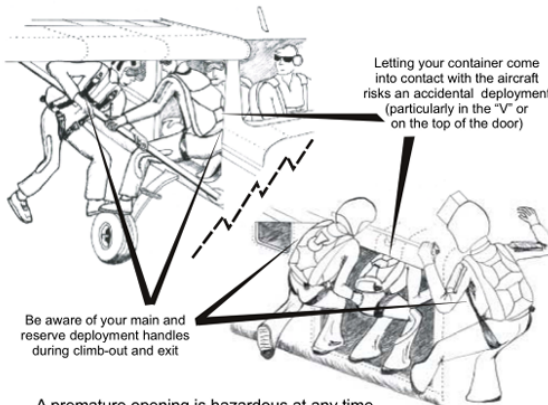
GPC Unit 3 Pre-flight Preparation, Unit 35 Flight Preparation Glider Trailer and Pilot, Unit 25 Threat and Error Management, Unit 37 Passenger Carrying, contain emergency parachute-related training aspects.

Valuable links to bale-out advice and parachute use videos are collated in the Safety Videos folder in Gliding Australia Documents - Safety Management.

Gliding Australia magazine [Issue 35](#) (April - May 2017) contains an article Parachute Repack Cycle by Jo Chitty with useful advice. (Note that the APF repack cycle for Parachutes Australia parachutes is now 6 months, not 8 months as cited in this article.) Excellent training publications and resources are provided on the [APF website](#), for example:

## ATTENTION!

A PREMATURE OPENING CAN PROVE FATAL



Letting your container come into contact with the aircraft risks an accidental deployment (particularly in the "V" or on the top of the door)


Be aware of your main and reserve deployment handles during climb-out and exit

A premature opening is hazardous at any time. It can be extremely hazardous if it occurs with an open door or during exit. The result can be major aircraft damage and serious, if not fatal, injury to the jumper.

**SOME OF THE CAUSES OF PREMATURE DEPLOYMENT ARE:**

Excessive movement in the aircraft	Loose closing loops
Poorly planned or careless climb outs	Worn velcro
Badly maintained equipment	Worn pack closing loops

**THE SAFETY OF EVERYONE ON BOARD  
DEPENDS ON YOUR CARE & AWARENESS**



*Above diagram shows It is easy to see that the deployment handle, flaps, and the "V" can be damaged inside a glider.*

- *Both Gliding Australia and Australian Parachute Federation have published useful parachute safety training materials.*
- *Even elite glider pilots have had to use parachutes in emergencies.*
- *It is better to be informed and aware, and treat parachutes with care, than to have them abused, ignored, damaged and possibly non-functional when needed.*



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