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*The Gliding Federation of
Australia Inc.*

Trading as Gliding Australia



Safety Management System

Safety Bulletin

No. 01/21

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RESUMPTION OF GLIDING ACTIVITIES AFTER PERIODS OF INACTIVITY

This bulletin provides guidance on considerations for members and clubs on resuming gliding activities after prolonged periods of inactivity or reduced activity.

A wide perspective is taken, across disciplines and perspectives; operational, airworthiness, training, competition, general club activities, and self-care. This guidance explores issues of skills degradation, fitness, fallibility and adaptability, plus what we can do about it, in a gliding context.

This guidance is derived from research¹ on skills decline and biases that affect risk exposure, fitness to fly, currency and recency, occurrences and gliding experience overseas and Australian regions affected by lockdowns or protracted inactivity in 2020-21.

Strategies are offered to help pilots manage their preparedness, assess their fitness to fly, understand their personal risks and susceptibilities to errors, and transition more safely to more demanding soaring activities post-inactivity. Some team and organisational strategies are suggested to defend against individual errors and help others to safely manage risks and opportunities. Potential pitfalls are raised to improve awareness.

We want every pilot to fly safely, enjoy the experience, with all people, aircraft and equipment undamaged. We want every member to help their peers achieve this.

ACHIEVING A SAFE TRANSITION TO NORMAL ACTIVITIES

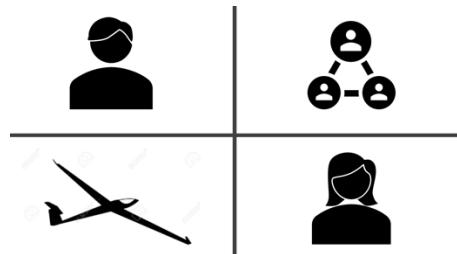
Achieving a safe transition to normal activities, post reduced activity, begins with clinical assessments of what new risks or degradations may have occurred, in multiple contexts:

Pilots: How long since last flight? Three flights in 90 days? How many hours and launches in last year? Where are you on the Currency Barometer (see Appendix 1)? How current were you before inactivity? What sort of flying profile? How demanding was that activity, and what difficulties were you facing? How does this affect your likely skills degradation?

¹ Good summary at BGA Website <https://bit.ly/3AQ1pie>, also see Embry-Riddle Aeronautical University JM Childs et al, FAA Report DOT/FAA/CT 83/84 (1983)

Pilots: Where are you on the IMSAFE checklist? (See Appendix 2). During reduced activity period, what major stresses did you experience? (Financial, health, mental health, family, relationships, job security, major life events?) How have your habits changed? How is your fitness, stamina and endurance now? How well are you sleeping? Have your medications changed? Are your eating and alcohol habits different? Have your concentration and memory been affected? Honest answers are needed!

CFIs and Training Panels: Where were pilots and students in their progression before inactivity? What possible regression might be expected? What weaknesses and strengths did they display? How involved have they been in the club during reduced activity periods? What preparations have they been making? Are they involved with airworthiness or other aviation-related activities?



For post-solo and post-GPC pilots, what practice and progression is advisable before they zoom off into the wild blue yonder? Are they using simulators? Who is cautious and careful? Who is overconfident, over-optimistic or headstrong? What revision and consolidation might be best? What are their learning preferences? Who do they communicate with and relate well to?

What is their risk appetite, compared to the club's risk appetite? Who should check whom? Who should communicate what, and when, to pilots before they turn up to fly again? What club policies will apply for check flights prior to solo in club gliders or private gliders? For instructors outside the 90-day limit, how should they regain currency? If solo, in what gliders?

What other operational preparations and checks are needed before resumption of operations? Who is most current to operate winches or vehicles, towplanes and other equipment? What briefings or walkarounds are planned? What debriefings are required?

Airworthiness: Obvious airworthiness issues apply to gliders with overdue Form 2 Annual Inspections, scheduled or incomplete maintenance. In what sequence will club gliders be returned to service? What parts are needed? What expertise and manpower are needed?

What degradation may have occurred to gliders? What may have arisen from weather, rodents, heat, smoke, dust, snakes, critters or intruders? What degradation may have occurred from neglect, corrosion, hangar rash, trailering, deflation, leaks, or chemicals?

Some airworthiness issues may not be obvious. Basic Sailplane Engineering has good advice on this. How are tyre pressures, oxygen pressure, brake fluid levels? Has fuel leaked or evaporated? What parachutes are due for repacking? Is FLARM software up to date? Is navigation and airspace data current? Are battery charge levels sufficient? How are batteries within cockpit devices?



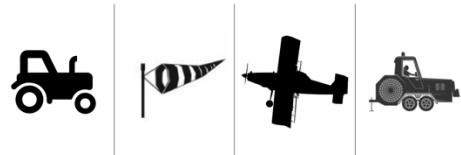
What advance pre-inspections are needed? By whom? Who is going to cross-check rigging and complex tasks? What post-inspection evaluation flights are needed, by whom?

For privately-owned gliders, who is competent to check their airworthiness? Who might need what sort of help, and from whom?

How airworthy are towplanes, towropes and weak links?

Aerodromes: Have Aerodrome User Groups, Councils and local operators been advised of operations and made necessary preparations? For clubs owning their own aerodromes, what mowing, clearing fire breaks, repairing storm damage, weed and pest control, windsock repairs, lights and runway markers need attention? What priority upkeep is needed for access roads, taxiways, fences, gates and locks? Note that land care is time consuming, with its own intrinsic risks.

Facilities and Equipment: The diversity of facilities and equipment in gliding clubs is enormous. How safe and hygienic are hangars, clubhouses, toilets and bathrooms, fuel sheds, workshops? Winches, ground towing vehicles, operations vans, trailers, tractors, land care equipment, are they fit for use? Dollies, wing walkers, towbars, rudder chocks, tie downs, ground equipment, are they fit for purpose? Are ground radios serviceable?



Committees and Organisation, Information and Resources: Do you have access to required health information, hygiene and safety practices, sanitation materials, personal protection, QR codes, medical declarations and exemptions data to manage compliance with state or territory health directions and club policies?

Do you have up-to-date airspace and aerodrome data, NOTAMs, operational software, contact information? Is your Emergency Response Plan up to date? Do you have required permissions and permits? Are memberships and medical declarations current? Have you made robust plans to ensure competent people apply risk mitigations?

If towplane or glider insurance has been reduced to ground risk cover, reinstate full flight risk cover prior to resuming operations. Ensure your broker acknowledges cover.

P7: Prior Planning and Preparation Prevents Poor Performance (Perhaps). This preparedness mindset also assists in risk identification and mitigation. Key question: *What additional risks need to be anticipated and mitigated* prior to resuming gliding activities?

CURRENCY, PROFICIENCY AND SKILLS DECAY

Most glider pilots are familiar with the Currency Barometer, at Appendix 1. It is a useful tool, yet it should be used warily, as it can be over-interpreted.

The “traffic light” colour ratings, based upon average activity levels of an average pilot over a flying year do not necessarily reflect a pilot’s actual risk exposure after a protracted layoff. Green is not necessarily good! Whilst a pilot may have had a large number of launches and flying hours over twelve months, *they may still have low recency, with skills decay and lower proficiency in demanding flying activities.*

Proficiency is, by definition, “*the ability to do something to a required standard with a high degree of skill*”. Proficiency as a pilot encompasses much knowledge and many skills.

High proficiency demands are intrinsic to other gliding activities, such as airworthiness tasks, operating winches, ground handling, training and supervising others.

Consider knowledge of aircraft systems, weather, regulations, airspace, navigation and flight management requirements. Now consider, for example, the additional knowledge and mental dexterity required for high performance soaring and competitions, or wave soaring at altitude, or making rapid calculations of speed-time-distance, drift, heading, altitude and glide angle.

Complex skills are required to operate an aircraft in a precise and coordinated manner, to use complex instrumentation, to manage workload and situational awareness, and to respond to the dynamics of weather and flight progress. *Proficiency enables us to deal with numerous variables, quickly and correctly, with high levels of situational awareness.*

Currency is important in maintaining proficiency and skills. Currency is a measure of being up to date, doing something within a certain time. Proficiency is different; it requires meeting standards plus accomplishment of high skill levels. With lack of currency, we lose the edge, tasks require more deliberate focus, with less automatic ease. We all know this phenomenon; this is skills decay.

Skills Decay. Not all skills decay at the same rate. Instinct, aptitude, age, intelligence and experience may affect this, but no person is immune. We all suffer from skills decay!

So, a critical question is this; which skills decay fastest, and to what extent? Figure 1 below is a simple depiction of what international aviation research² has shown. *More complex, cognitively demanding skills degrade more quickly, to a greater extent, than procedural skills and conditioned responses. Skills requiring multifactor analysis and greater anticipation may degrade more, with inactivity or lack of practice.*

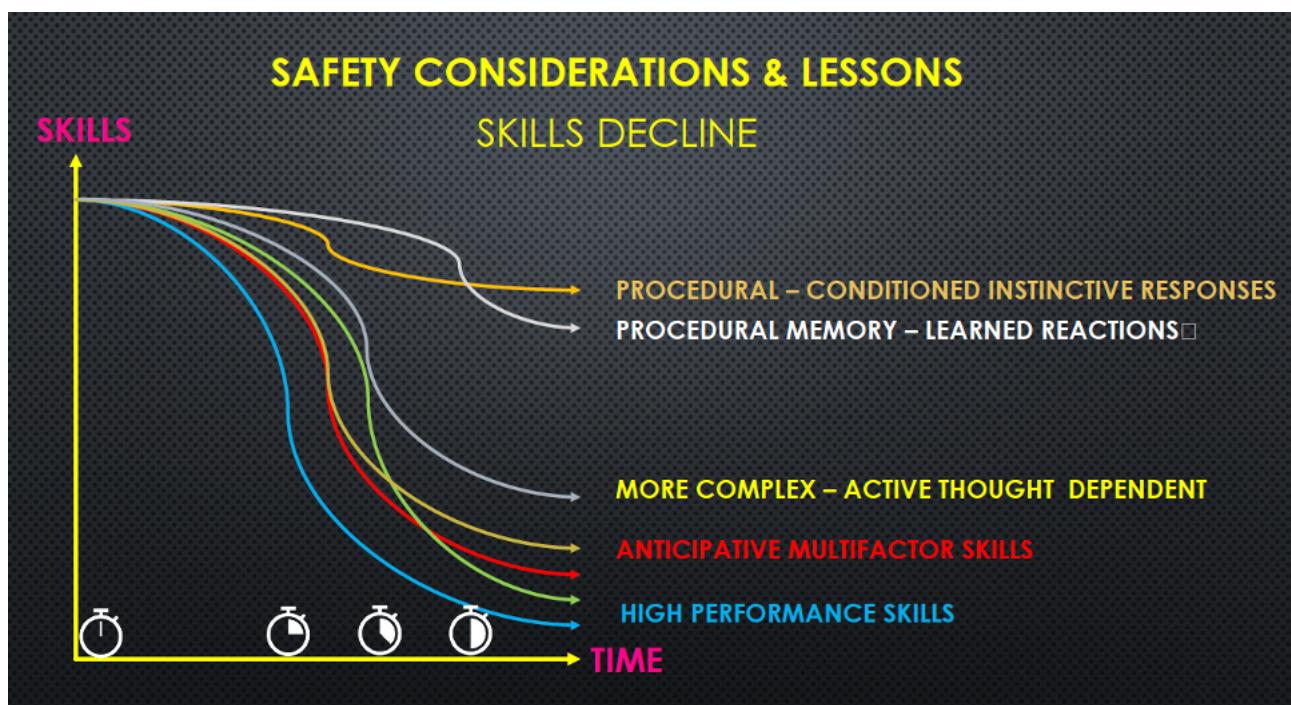


Figure 1: Depiction of Variations in Skills Decline with Time Since Last Flight

² W Arthur Jr et al, Human Performance 11, 57 (1998), and JM Childs et al, FAA Report DOT/FAA/CT 83/84 (1983)

Skill decay is exacerbated by poor memory, stress, fatigue, sleep and lifestyle disruption, low fitness, inattention, optimism bias, overconfidence and complacency.

Reduced skills decay impact can be achieved through reflection, mental rehearsals, procedural drills, practice with similar tasks, simulators, by staying active and alert. Compensations include teamwork, double checks, threat and error management, heightened vigilance, and deliberate workload management.

RISKS AND EXPERIENCES – WHAT GOES WRONG?

Skills Decay, Focus, Variables. Studies have found that a pilot's ability to predict and evaluate their own skill retention levels for specific flight tasks was negligible. This was especially true for infrequently performed manoeuvres such as emergency procedures, and *tasks requiring high levels of calculation, concentration and mental workload*. Pilots were *less able to handle multiple variables*.

The inability to predict and assess personal flight proficiency combined with the potential for loss of critical flight skills and reduced ability to manage variables. This poses a major challenge to our safety, reinforces the importance of refresher training.

So, with limitations in self-awareness and self-diagnosis in skills decline and proficiency, the wisdom of having a trusted peer check your pre-flight preparations, and an instructor giving currency checks in first flight(s) is reinforced.

Instructors. Yet instructors are also prone to skills decline with degraded higher order anticipatory, supervisory, flight management, intervention and tuition skills! This means they should refresh and consolidate their own flying skills, before taking on demanding flight review and instructing duties. Serious occurrences may be caused by:

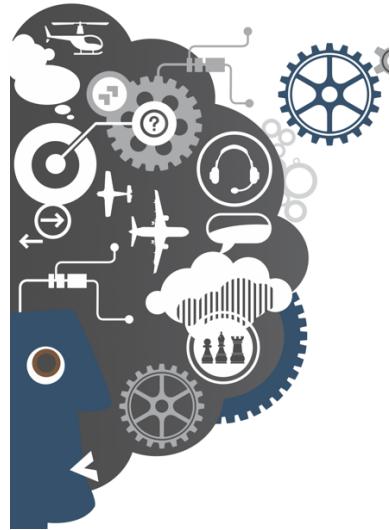
- Errors in ground handling,
- Poor pre-flight inspections, failure to detect damage and rigging errors,
- Poor flight planning,
- Checks absent or incomplete,
- Late interventions or failures to intervene,
- Lack of handover-takeover, or no-one in control,
- Loss of control on or near the ground,
- Poor vigilance.

Inexperienced versus Experienced Pilots. Overseas experience has indicated escalating insurance claim rates, despite fewer flights and hours flown. More accidents and incidents have been recorded, for fewer flying hours, with *more experienced pilots at higher risk of accidents and claims*. Why?

Low-time pilots and students are more likely to be closely supervised and often aware of their own limitations and lack of experience, therefore inclined to err on the side of caution.

More experienced pilots are more likely to have minimal supervision, be susceptible to *optimism bias*, over-confident in their own lack of skills degradation, optimistic in their rapid progression to fully skilled, possibly complacent, and – this is important – *more likely to tackle more variables and higher workloads too quickly*.

Experienced pilots may have passed their flight review and currency check, probably in benign conditions in an easy to fly two-seater, but they might be unwise to immediately take on much more demanding conditions and aircraft, in difficult conditions with many non-benign variables. “Hasten slowly” is advisable, with more gradual progression back up to high demand, high skills flying.



Adverse Impacts – Airborne. All pilots, at all skills levels, must beware of adverse impacts of low currency, reduced proficiency and skills decay, including:

- Missing checks or errors in checks,
- Degraded lookout and situational awareness,
- Degraded time and workload priority management,
- Misidentification and mishandling of controls,
- Dropping a wing or over-controlling on ground roll and launch,
- In-flight judgement errors, failure to discern worsening risks,
- Handling errors, over-controlling, under-correcting,
- Failure to maintain safe obstacle clearances,
- Launching or landing in unfavourable winds or surfaces,
- Failure to consider or take safer options in worsening situations.

Adverse Impacts – Airworthiness. These problems are not just evident in airborne operations. Many airworthiness issues have been identified, including:

- Rigging and control check errors,
- Disconnected, binding, maladjusted or impeded controls,
- Undetected defects, or flight with known defects,
- Poor daily inspections,
- Poor pre-flight outside aircraft checks,
- Instrument setting errors,
- Unlocked or loose-latched canopies.

Adverse Impacts – Ground Handling. Higher rates of ground handling incidents have been noted following periods of inactivity, with increased reports of glider damage, damage to cars or structures and injury to people. Broken towing and handling equipment

has caused much greater damage. Hangar rash has been caused by poor coordination and distractions. Unfamiliarity with towing vehicles and equipment has led to mishandling.

The most common causes have been errors by people driving vehicles towing gliders into obstacles, not seeing obstacles, misjudging distances and clearances, turning sharply, reversing, or driving away at speed still connected.

Adverse Impacts – Other Risk Drivers. Attention is the ability to sustain focus on sensory inputs and tasks, to maintain necessary situational awareness to avoid errors and risks. *The enemy of attention is distraction*, diversion by unnecessary inputs and tasks, by “noise” that degrades sensory focus, thinking and concentration.

Attention is also degraded by complacency, “She’ll be right” acceptance of the environment, fatigue, and assumptions about other people being attentive for you. “Someone else’s problem” is another hazardous attitude.

Lack of vigilance and inattention may drive distraction and unseen hazards, leading to other incidents such as overrun towropes, winch rope tangles, winch control problems, runway incursions, radio setting errors, visitors walking into dangerous areas, cars running over equipment, trips and falls. Humans are fallible! Murphy’s Law is insidious.



WHAT IF IT GOES WRONG?

GFA has an Emergency Response Plan (ERP). Each club is required to have an ERP, which may draw upon an Aerodrome User Group ERP. We hope you never have to use it. In the worst case, try to keep calm and respond to highest priority tasks in the ERP. Call 000 and get help. The flowchart at Appendix 3 may assist. The GFA Executive Manager Operations is the lead point of contact with CASA, ATSB and Emergency Authorities, and can organise assistance. Contact emo@glidingaustralia.org or call 0414 476 151.

OPPORTUNITIES AND EXPERIENCES – WHAT WORKS WELL

Let’s shift focus from what goes wrong, to doing things right! Risk and problem awareness won’t prevent errors and omissions. A key strategy is applying lessons about *what works well*, *what can be done differently* to reduce the likelihood of errors and risks being realised, or to limit their impacts and consequences.

Safety Differently – Doing Things Well. In GFA Safety Bulletin No 01/20 *Safety Differently*, Professor Sidney Dekker described strategies for “making it go right”, rather than focussing on what goes wrong. This approach is based on *learning what works, what to do differently, how to build positive capacities!* These positive ingredients included:

- Diversity of opinion and the possibility to voice dissent, respecting other voices,
- Keeping a discussion about risk alive and not taking past success as a guarantee for safety, remaining poised to adapt, with explicit reinforcement in briefings,
- Deference to expertise, the person who actually knows, not the person in charge,

Ability to say STOP and voice concerns about warning signs, keep psychological safety,
Broken down barriers between hierarchies and departments, getting people to talk,
Not waiting for audits or inspections to improve, creating safety improvements,
Pride of workmanship, removing unnecessary constraints, decluttering.

This approach emphasises openness and teamwork, adaptation and improvement, with risk awareness and vigilance. It helps “address the subtleties and choreographies of the present tasks and people doing them” and will “help things go right”.

Extending from IMSAFE to Are We Safe. Overseas experience highlights the effectiveness of working in pairs or small teams, to counter possible individual errors or omissions. Working in pairs, a “look after your mate system” with deliberate vigilance and cross-checking, catches many potential problems. We do this with Independent Control Checks post-rigging; this precautionary approach can be extended to most activities.

Cross-checking and teaming enable extension of IMSAFE checks to group activities, to mutual well-being. “Are We Safe” is the extension of this mindset. Many northern hemisphere clubs coming out of winter hibernation use team safety walkarounds, briefings, ground inspections and rehearsals, prior to resuming any flight operations.

Rather than individuals tackling airworthiness, ground operations, airfield, facilities, and equipment preparations, these are done as a club. Collegiate dialogue allows for better preparation and smoother efficiency. This has social and team culture building benefits.

Hasten Slowly. In all environments and tasks, experience reinforces the priority of taking a graduated approach to resuming gliding activities. This is as true in the hangar and workshop as on the flight line, in all aerodrome areas. Hasten, slowly, is the very strong advice, with continued vigilance and deliberate care well beyond the first check flight, beyond the first flying day.

For experienced pilots and independent operators, hastening slowly means not taking on too much, too many variables and demands, too quickly, and guarding against optimism bias. Having passed a benign check flight in good conditions, it might be best to regain skills and proficiency in the local area, getting some practice circuits and soaring in before zooming off on a cross-country flight in less-than-ideal conditions.

One flight is not enough to get to full skill levels, high proficiency, after a long layoff.

Sterile Environments. Good airmanship requires a sterile cockpit in key phases of flight and a lack of distractions. Experience suggests that after a protracted period of inactivity, happy pilots who are keen to fly and socialise, who are joyfully reconnecting with others, are often distracted and may break protocols for sterile areas. It is a natural reaction to stress release! There is a time and place for such dialogue and celebrations. Mindfulness and vigilance in sterile areas is important.

This should extend to:

Daily inspections and the hangar when maintenance is being done. These people should not be interrupted unless they come to you to ask for assistance.

To ground marshalling areas and the launch point. The main operations van may be an attractive place to loiter and socialise, but this cannot be allowed to impede monitoring VHF radio, ground movements and flying operations.

Vehicles used for towing on the ground. Windows should be open, and music turned off!

Around the glider while the pilot is performing pre-flight cockpit checks or mentally preparing to fly.

Fatigue Management. Checking instructors, tug pilots, winch drivers, duty pilots and crews will be busy getting club members checked and safely airborne. Rest periods and deliberate rostering will be necessary to meet demand and minimise risks from fatigue-induced errors. A little rest and TLC will go a long way.

Competitions and Performance Flying Events. Competition, camp and regatta organisers, safety officers and stewards, may therefore require participants to have higher levels of currency than the minimum legislated three flights in 90 days. This is particularly the case after long layoffs. They may apply minimum cross-country currency requirements.

Host club instructors and competition organisers can apply limitations on independent operators as a condition of participation in organised soaring activities. Practice days should be conducted in suitable weather, with benign practice courses and tasks that limit initial risk exposure and encourage safe consolidation of skills. Briefings must include detailed advice on outlanding options and hazards, areas to avoid, and areas of potential air traffic conflicts.

Risk and Opportunity Management. Opportunity brings reward and is the other side of risk. Balance is needed.

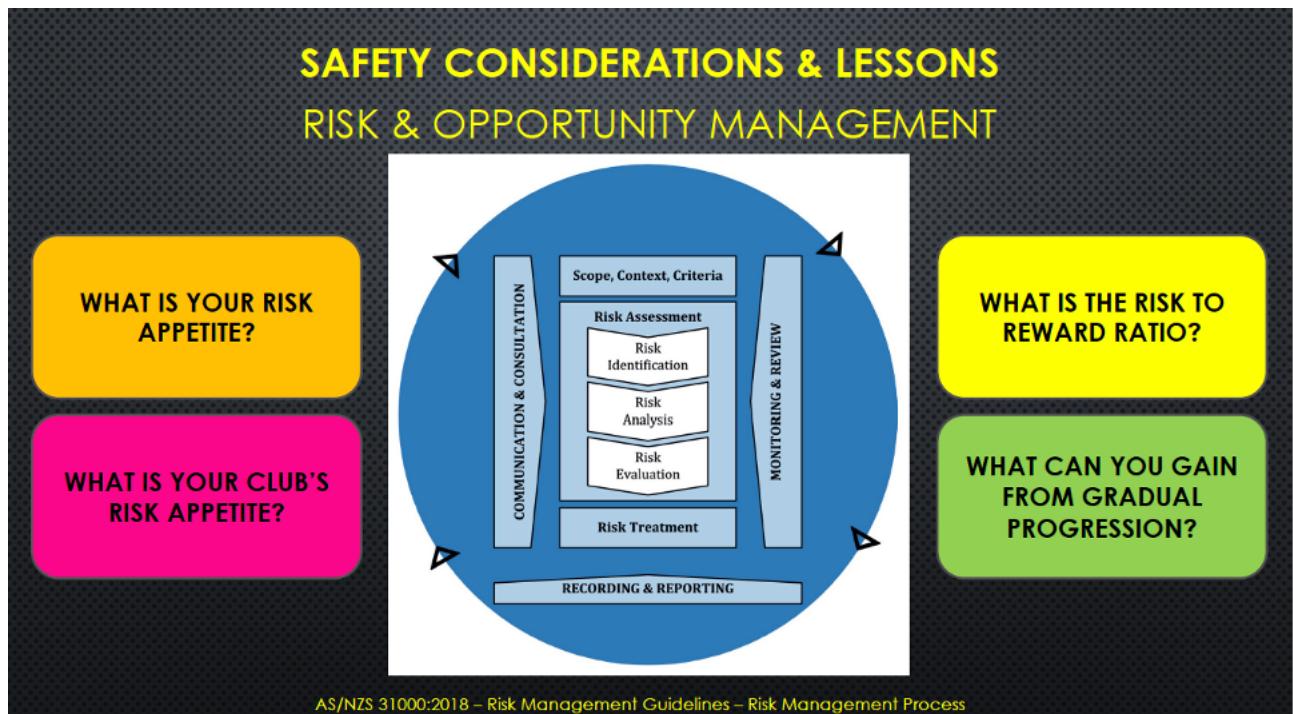


Figure 2: Risk and Opportunity Management

You and your gliding colleagues may feel enthusiastic about resuming operations, regaining freedom and pleasures aloft. Rather than automatically grasping every opportunity, and perhaps pushing yourself and others too far too soon, it is important after a long break to consider how a gradual progression to normal operations and adventurous flying should proceed.

This therefore requires mature conversations with your colleagues about “risk appetite”, how much risk to accept in activities. We all have biases towards accepting some risks, avoiding others. Every individual’s risk appetite is different. It is important to consider your club’s risk appetite, what is important to your gliding friends. We should avoid pressuring others to do things they are not comfortable with; rather, we should respect their caution.

Before accepting higher risks, clear judgements should be made about the risk to reward ratio. If little is to be gained from marginal or risky activity, then it should be reconsidered, postponed, or avoided. There will be other, better days!

Threat and Error Management (TEM). Experience in all aviation pursuits highlights the high value of Threat and Error Management (TEM). TEM is used to avoid, or manage consequences of, an Undesired Aircraft State. Those undesired states may arise from threats, externalities that come at you or from the environment, or by errors, usually within the cockpit, sometimes by other air operators. TEM is impeded by Hazardous Attitudes, biases and behaviours that lead to unnecessary risk exposures or eroded safety margins.

TEM, in an anticipatory sense, is useful in preparation, planning, informed choices pre-flight, to reduce the probability of undesired events. In a reactive sense, pilots can reduce the consequences of errors, make better choices to deal with adversities and emerging threats. These may include airworthiness problems, air traffic, bad weather, runway incursions, failure to climb in gusty thermals, dumb decisions, flat batteries, anything that Murphy’s Law touches. TEM is applicable to resumption of operations after long layoffs.

If you realise that you are prone to make more errors after inactivity, you should be better able to recognise potential errors, or avoid situations where threats and errors could lead to undesired aircraft states, to adopt defensive strategies. Checking instructors should do this for themselves and anticipate potential errors for their students!

SUMMARY – KEY POINTS

- ★ For both individual pilots and clubs resuming operations after long periods of inactivity, many questions and assessments must be made, careful preparations prior to resuming operations. Informed choices must be made about mitigating multiple risks of degradation.
- ★ Prior Planning and Preparation Prevents Poor Performance (Perhaps). Risk awareness and mitigation informs better planning and preparation.
- ★ Currency is not the same as Proficiency. Proficiency includes the application of knowledge and skills to high standards.
- ★ Every person suffers from skills decline with inactivity. Complex skills, with high mental demand, decline more quickly, to greater extent. These skills, that enable us to manage many variables, require consolidation, in graduated environments.

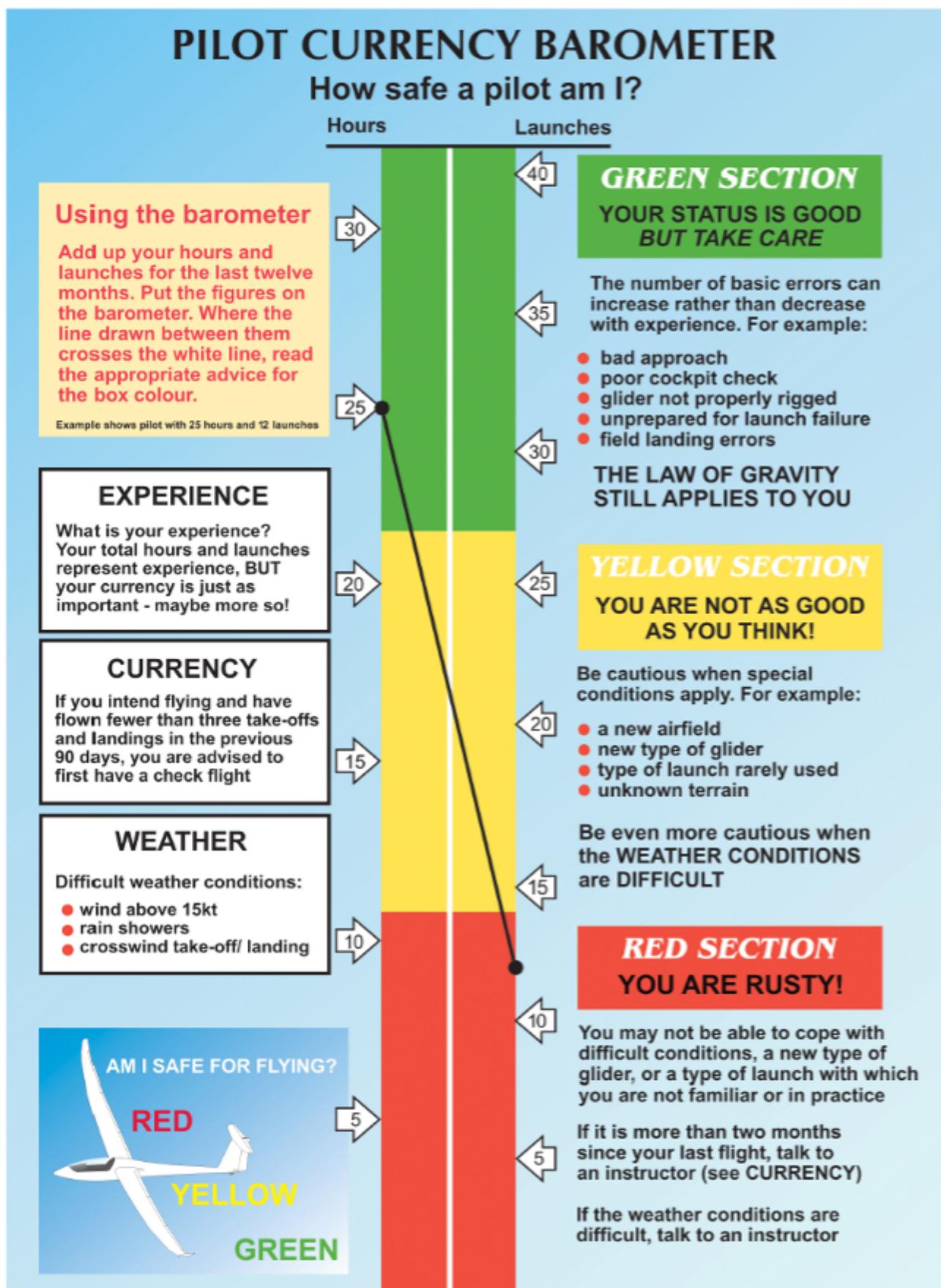
- ★ Most people are not good at predicting their own skills decline.
- ★ Many experienced people will also have optimism bias about their skills recovery. Experienced pilots may be at higher risk of taking on too many variables, too soon.
- ★ Understanding *what* can go wrong, and *how*, enables us to better understand *why*.
- ★ That insight enables us to do things differently, understand how adverse impacts can be reduced.
- ★ Fatigue, complacency, inattention and distraction are the enemy of vigilance.
- ★ Other strategies can help pilots and clubs to do safety differently, do things well. Openness and teamwork are critical. Extend IMSAFE to Are We Safe.
- ★ After long periods of inactivity, hasten slowly, cross-check, and consolidate. Use Threat and Error Management constructively.
- ★ Opportunity is the other side of risk. The risk to reward ratio, personal and club risk appetites should be considered before accepting higher risks.

Happy landings!



**A.R. (Drew) McKinnie
GFA Safety Manager**

18th October 2021



APPENDIX 2 to SAFETY BULLETIN 01/21 – IMSAFE CHECKLIST

Are you safe to fly?

I	llness	Are you physically well?	<input checked="" type="checkbox"/>
M	edication	Are you free from the effects of drugs?	<input checked="" type="checkbox"/>
S	tress	Are you free from significant stress?	<input checked="" type="checkbox"/>
A	lcohol	Are you free from the effects of alcohol?	<input checked="" type="checkbox"/>
F	atigue	Are you adequately rested?	<input checked="" type="checkbox"/>
E	ating	Have you eaten properly so you can work effectively?	<input checked="" type="checkbox"/>

Don't fly if you're not safe

CASA Visual Flight Rules Guide (VFRG)

<https://vfrg.casa.gov.au/resources/quick-reference/are-you-safe-to-fly/>

APPENDIX 3 to SAFETY BULLETIN 01/21 – ERP FLOWCHART

EMERGENCY RESPONSE PLAN FLOWCHART

(Emergency Response for Visual Thinkers)

