The Gliding Federation of Australia Inc

Occurrence Summaries

01/01/2016 to 31/12/2016

Region(s): All

Club:

Christopher Thorpe
Executive Manager, Operations
The Gliding Federation of Australia Inc.

31-Dec-2016

The Gliding Federation of Australia Inc
SOAR Accident and Incident Occurrences
General Statistics

Date From: 01/01/2016
Date to: 31/12/2016

Damage						
	VSA	**GQ**	**NSWG**	**SAGA**	**WAGA**	**Total**
Nil	25	39	27	12	12	115
Minor	11	8	14	3	5	41
Substantial	3	5	10	2	8	28
Write-off			2	1		3
Total	**39**	**52**	**53**	**18**	**25**	**187**

Injury						
	VSA	**GQ**	**NSWG**	**SAGA**	**WAGA**	**Total**
Nil	38	51	50	16	22	177
Minor	1	1	2	1	2	7
Serious			1	1	1	3
Total	**39**	**52**	**53**	**18**	**25**	**187**

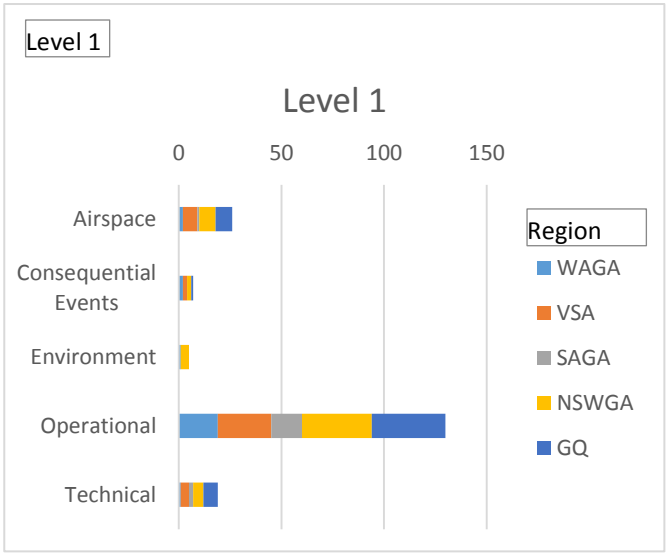
Phases						
	VSA	**GQ**	**NSWG**	**SAGA**	**WAGA**	**Total**
Launch	11	20	10	5	6	52
Landing	15	17	16	8	9	65
In-Flight	4	11	8	2	6	31
Ground Ops	7	3	10	2	2	24
Thermalling	1	1		1		3
Outlanding	1		9		2	12

Type of Flight						
	VSA	**GQ**	**NSWG**	**SAGA**	**WAGA**	**Total**
Local	15	24	17	6	11	73
Competition	4	2	11	3		20
Ground Ops	7	3	10	2	2	24
Cross-Country	4	6	6	2	6	24
Training/Coaching	8	17	9	3	5	42
AEF	1			2	1	4
Total	**39**	**52**	**53**	**18**	**25**	**187**

The Gliding Federation of Australia Inc
SOAR Accident and Incident Occurrences
Classification Level 1

Date From: 01/01/2016
Date to: 31/12/2016

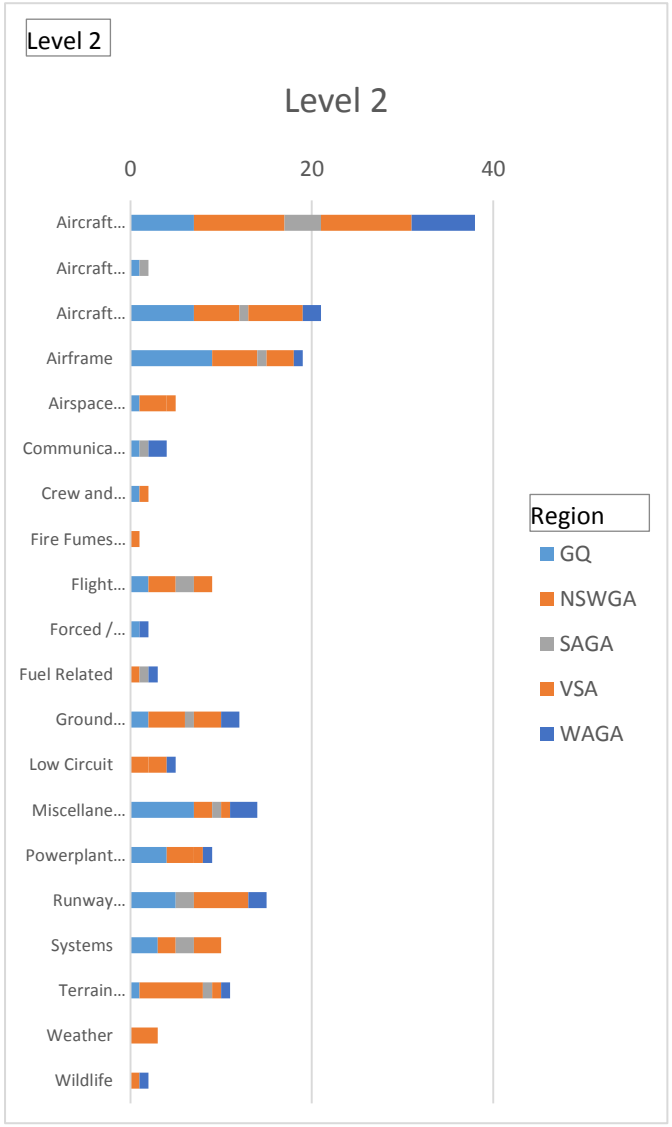
Level 1	WAGA	VSA	SAGA	NSWGA	GQ	Total
Airspace	2	7	1	8	8	26
Consequential Events	2	2		2	1	7
Environment	1			4		5
Operational	19	26	15	34	36	130
Technical	1	4	2	5	7	19
Total	**25**	**39**	**18**	**53**	**52**	**187**



The Gliding Federation of Australia Inc
SOAR Accident and Incident Occurrences
Classification Level 2

Date From: 01/01/2016
Date to: 31/12/2016

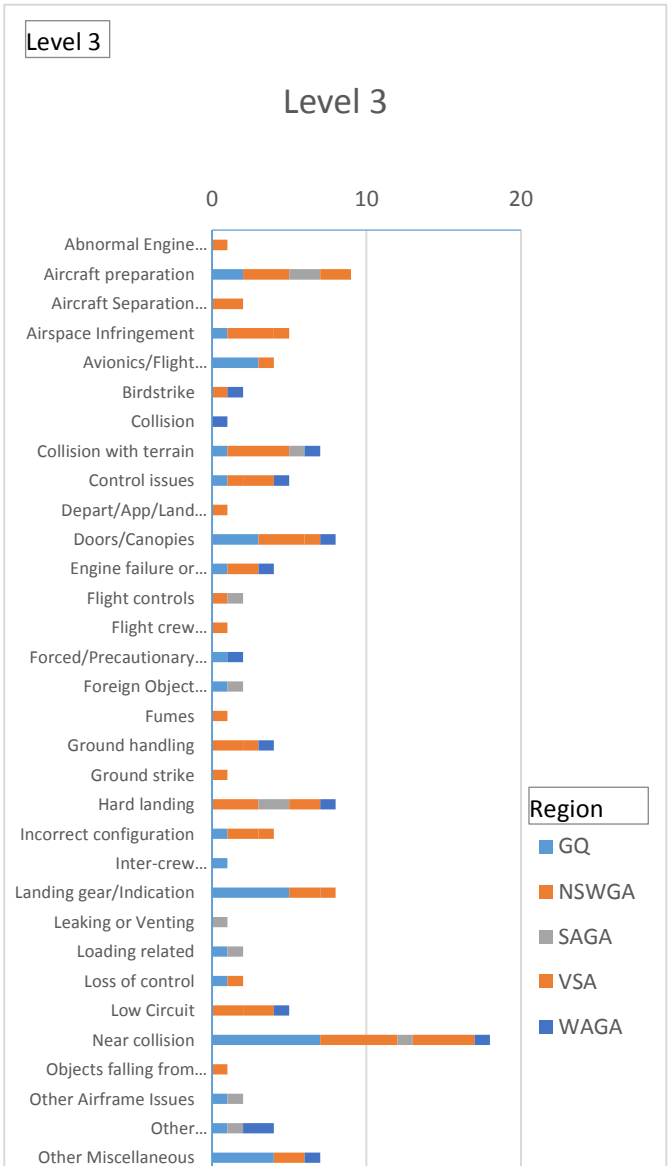
Level 2	GQ	NSWGA	SAGA	VSA	WAGA	Total
Aircraft Control	7	10	4	10	7	38
Aircraft Loading	1		1			2
Aircraft Separation	7	5	1	6	2	21
Airframe	9	5	1	3	1	19
Airspace Infringement	1	3		1		5
Communications	1		1		2	4
Crew and Cabin Safety	1	1				2
Fire Fumes and Smoke		1				1
Flight Preparation/Navigation	2	3	2	2		9
Forced / Precautionary landing	1				1	2
Fuel Related		1	1		1	3
Ground Operations	2	4	1	3	2	12
Low Circuit		2		2	1	5
Miscellaneous	7	2	1	1	3	14
Powerplant/Propulsion	4	3		1	1	9
Runway Events	5		2	6	2	15
Systems	3	2	2	3		10
Terrain Collisions	1	7	1	1	1	11
Weather		3				3
Wildlife		1			1	2
Total	**52**	**53**	**18**	**39**	**25**	**187**



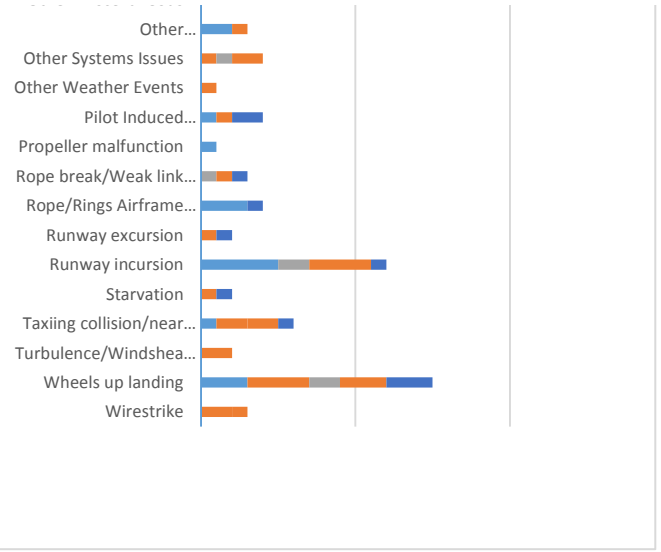
The Gliding Federation of Australia Inc
SOAR Accident and Incident Occurrences
Classification Level 3

Date From: 01/01/2016
Date to: 31/12/2016

Level 3	GQ	NSWGA	SAGA	VSA	WAGA	Total
Abnormal Engine Indications				1		1
Aircraft preparation	2	3	2	2		9
Aircraft Separation Issues				2		2
Airspace Infringement	1	3		1		5
Avionics/Flight instruments	3			1		4
Birdstrike		1			1	2
Collision					1	1
Collision with terrain	1	4	1		1	7
Control issues	1	1		2	1	5
Depart/App/Land wrong runway				1		1
Doors/Canopies	3	3		1	1	8
Engine failure or malfunction	1	2			1	4
Flight controls		1	1			2
Flight crew incapacitation		1				1
Forced/Precautionary Landing	1				1	2
Foreign Object Damage/Debris	1		1			2
Fumes		1				1
Ground handling		2		1	1	4
Ground strike		1				1
Hard landing		3	2	2	1	8
Incorrect configuration	1	2		1		4
Inter-crew communications	1					1
Landing gear/Indication	5	2		1		8
Leaking or Venting			1			1



Loading related	1		1			2
Loss of control	1			1		2
Low Circuit		2		2	1	5
Near collision	7	5	1	4	1	18
Objects falling from aircraft				1		1
Other Airframe Issues	1		1			2
Other Communications Issues	1		1		2	4
Other Miscellaneous	4	2			1	7
Other Powerplant/Propulsion Issues	2	1				3
Other Systems Issues		1	1	2		4
Other Weather Events		1				1
Pilot Induced Oscillations	1			1	2	4
Propeller malfunction	1					1
Rope break/Weak link failure			1	1	1	3
Rope/Rings Airframe Strike	3				1	4
Runway excursion				1	1	2
Runway incursion	5		2	4	1	12
Starvation		1			1	2



Date	2-Jan-2016	Region	GQ	SOAR Report Nbr	S-0652
Level 1	Operational	Level 2	Airframe	Level 3	Doors/Canopies
A/C Model 1	Standard Cirrus	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	64

The ground-crew member assisting with the aerotow launch noticed the canopy had been closed with the canopy strap hanging out. The pilot was asked to open the canopy and the strap was tucked inside the cockpit. The pilot closed the canopy but did not properly lock it. During the aerotow and at a height of about 300ft AGL the canopy started to lift. On noticing this the pilot attempted to close and lock the canopy but in so doing allowed the glider to fly out of station and the weak link broke at the tow plane. The pilot regained control, released the rope and landed safely on the reciprocal runway. This incident highlights the importance of going through the pre take-off checks again if distracted during the pre-launch routine.

Date	2-Jan-2016	Region	GQ	SOAR Report Nbr	S-0649
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	Arcus M	A/C Model 2	Model Aircraft		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	56

A model aircraft was flown across an operational runway and came within close proximity to a landing sailplane. The crew of the glider and witnesses on the ground observed a model aircraft being flown by a fellow club member pass across an operational runway whilst the glider was landing. The operation of model aircraft is regulated by Civil Aviation Safety Regulation (CASR) Part 101; subparagraph 101.075 of which deals with operations near aerodromes. This subparagraph precludes the operation of a model aircraft over the approach or departure path of a runway of an aerodrome, or a movement area or runway of an aerodrome without the permission of CASA (subparagraphs 101.75(2) and (3), and 101.080 refer). It is also an offence for a person to operate an unmanned aircraft *"in such a manner as to create an obstruction to an aircraft taking off from, or approaching for landing at, a landing area or a runway of an aerodrome"* (subparagraph 101.075(4) refers). The member was issued with a Counselling Letter by GFA but did not accept GFA's authority to deal with the matter and suggested it be handed over to CASA to prosecute. GFA complied with the member's request. CASA investigated the matter and issued the member with a substantial monetary fine.

Date	9-Jan-2016	Region	GQ	SOAR Report Nbr	S-0653
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	ASW 27-18 E	A/C Model 2	ASW 27-18 E		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	57

The pilots were competing in the Australian Multiclass National Gliding Competition. During the third leg of a four-leg task, two pilots who had been flying together for most of the flight joined a thermal. During the course of thermalling and while at similar heights one glider turned inside the other, requiring the other glider to take avoiding action. Gliders established in a thermal should not have to manoeuvre to avoid another glider. Pilots must match the other glider's bank angle and speed so that they fly the same size circle. It is NEVER acceptable for a glider to turn inside another at the same height.

Date	10-Jan-2016	Region	VSA	SOAR Report Nbr	S-0669
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing
A/C Model 1	PIK-20B	A/C Model 2	N/A		

Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	51
On return from a cross country flight in weak conditions, the pilot overflew the airfield and noticed the wind sock was indicating a ground wind at 90 degrees to that experienced during the flight. The pilot modified his circuit intentions to land on the most into wind runway. The pilot completed his pre landing checks but did not notice the undercarriage was still retracted. During the base leg the pilot found the air to be turbulent and noticed the wind had swung 90 degrees to his track. The pilot elected to land on the sealed runway and employed full flap during the approach. Moments before touchdown the pilot realised the undercarriage was not down and he manoeuvred the aircraft towards the grass verge. The aircraft touched down initially on the tarmac while still at flying speed and eventually settled on the grass and came to rest quickly. The aircraft suffered minor damage. The pilot noted that he usually lowered the undercarriage once he had decided to land but had not done so on this occasion and that while he completed his pre-landing checks, he did not identify the undercarriage was retracted.							

Date	12-Jan-2016	Region	NSWGA	SOAR Report Nbr	S-0655
Level 1	Operational	Level 2	Terrain Collisions	Level 3	Collision with terrain
A/C Model 1	LS 6	A/C Model 2	N/A		

Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	51
This accident occurred during the Multiclass Nationals. The task for this particular day was challenging and nearly two thirds of the class outlanded. The pilot elected to return to the home airfield via another regional airport. When the pilot reached the regional airport he realised that pushing on was futile and made a decision to land and get an aerotow retrieve. There were already a number of gliders that had landed at this airport and three were circling nearby. The pilot joined circuit and two other gliders joined behind. The pilot elected to land short on the grass verge to the left of the main runway. In order to provide separation from the gliders following, he manoeuvered to stop between the gable markers to his left. Unfortunately the pilot misjudged the speed at which he was travelling and a collision with the runway markers was likely. Rather than re-enter the runway and infringe the other landing gliders, the pilot elected to ground loop between the markers and airfield boundary fence. The glider completed a low speed ground loop and in the course of this manoeuvre the right wing contacted the top wire of the boundary fence. The pilot did not believe he was fatigued or dehydrated but indicated that a contributing factor was his desire to land short in the hope of getting an aerotow retrieve before sunset.							

Date	12-Jan-2016	Region	VSA	SOAR Report Nbr	S-0654
Level 1	Operational	Level 2	Aircraft Control	Level 3	Control issues
A/C Model 1	ASW 19	A/C Model 2	N/A		

Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	66
During a winch launch and at a height of about 150ft AGL the cable broke. The pilot immediately lowered the nose to maintain safe airspeed and pulled the cable release to ensure the cable and parachute were clear of the glider. After establishing safe airspeed the pilot opened the airbrakes to land straight ahead. The pilot found he could not get full travel on the airbrake lever and a visual inspection of each wing confirmed the airbrakes were only half extended. A safe landing was made on the available runway. Post flight the pilot found that the 'tie-down' kit had slipped from its stowed position and lodged under the lower control rods of the airbrakes, thereby obstructing their full travel. The 'tie-down' kit was stored in a drawstring bag on a shelf behind the pilot's seat and wedged in a hole in the bulkhead designed to carry an oxygen bottle. A secure container will be fitted to contain the 'tie-down' kit and prevent it from moving.							

Date	14-Jan-2016	Region	NSWGA	SOAR Report Nbr	S-0675

Level 1	Operational	Level 2	Ground Operations	Level 3	Ground handling		
A/C Model 1	JS1 B	A/C Model 2	N/A				
Injury	Nil	Damage	Substantial	Phase	Ground Ops	PIC Age	61
The pilot attempted to tow the glider from tie down before removing tie down sling from right wing. The wing suffered substantial damage. The pilot had been competing in the Multiclass Nationals and noted that the effects of cumulative fatigue over the preceeding days may have led to this mistake.							

Date	17-Jan-2016	Region	NSWGA	SOAR Report Nbr	S-0664		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing		
A/C Model 1	Mosquito	A/C Model 2	N/A				
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	58
Following a nine-hour cross country flight, the experienced pilot raised the undercarriage during the downwind leg and landed with the wheel retracted. The pilot was on a 'skinny' final glide and was looking to do a straight-in approach and landing. When close to the airfield the pilot lowered the undercarriage. When the glider arrived at the airstrip the pilot had sufficient height to conduct a normal circuit. When on downwind the pilot completed the pre-landing checks and retracted the undercarriage. During the landing flare the pilot received a radio call advising the undercarriage wasn't lowered. The pilot's attention was drawn to the undercarriage lever and this distraction resulted in the glider landing heavily and damaged the undercarriage doors. The pilot believes fatigue and the stress of a marginal final glide may have contributed to this accident. This accident highlights the importance of checking the undercarriage lever to the placards. It also serves as a reminder to external observers not to distract the pilot during the critical stage of a landing.							

Date	18-Jan-2016	Region	VSA	SOAR Report Nbr	S-0666		
Level 1	Operational	Level 2	Miscellaneous	Level 3	Rope break/Weak link failure		
A/C Model 1	Twin Astir	A/C Model 2	Piper PA25 235				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	66
At commencement of launch at the end of the take up slack process the glider was jerked forward and over ran the rope. The tow plane attempted to proceed with the launch, however the rope was under the main wheel of the glider and the resultant 'jerk' resulted in the rope separating from the tow plane. This sort of incident can be minimised by the tow pilot taxying slowly and the glider pilot applying the wheel brake while the slack is being taken up.							

Date	23-Jan-2016	Region	GQ	SOAR Report Nbr	S-0665		
Level 1	Operational	Level 2	Terrain Collisions	Level 3	Collision with terrain		
A/C Model 1	Discus b	A/C Model 2	N/A				
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	17
While landing in gusty crosswind conditions, the pilot was unable to prevent the right wing from contacting the ground and the wing subsequently collided with a runway light. The glider suffered leading edge damage requiring repair.							

Date	31-Jan-2016	Region	VSA	SOAR Report Nbr	S-0681
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Aircraft Separation Issues
A/C Model 1	PW-6U	A/C Model 2	Piper PA-18-150		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	48

A glider was launched by aerotow while the runway was occupied by a backtracking Cessna aircraft. The Cessna gave an entering and backtracking call that was not heard by either the tow pilot or the glider pilot. The forward signaller did not notice the Cessna as he was looking in the opposite direction. The tow plane pilot stated that the runway was clear prior to lining up but that forward visibility was reduced by the nose of the tow plane, and his main focus during the launch was on the forward signaller. The Cessna was not visible to the wingtip runner as it was obscured by the position of the tow plane. The Club CFI has briefed his members on the responsibility of ground crew and pilots to ensure the airspace and runways are clear for take-off. Glider pilots are now in the habit of turning the radio on and adjusting the volume at an early stage of the glider pre-flight preparations as an aid to situational awareness.

Date	31-Jan-2016	Region	SAGA	SOAR Report Nbr	S-0680
Level 1	Operational	Level 2	Communications	Level 3	Other Communications Issues
A/C Model 1	ASK-21	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	75

The student pilot had recently come to gliding and had commenced his training with another club. The student, who had not flown with this instructor prior to this day, recalled telling his instructor beforehand that he had attempted various phases of approach and landing before but on each occasion the instructor had taken over. On the second flight of the day the instructor agreed the student would attempt the landing.

Just after rounding out the student advised the instructor to takeover but let go of the controls before the instructor had time to react and the aircraft touched down 'with a bump'. Fortunately the experienced instructor was quick to regain control and landed the aircraft without further incident. This is a not an uncommon risk in flight training, and instructors mitigate this risk by adopting a 'defensive' posture during the critical stages of flight. Notwithstanding, this incident serves as a reminder to all pilots of the importance of being clear as to who is flying the glider at any given time. Whether you are a student pilot, instructor, or flying mutual, when you hand over control say clearly “You have control” and only take your hands and feet off the controls when you have heard the other pilot respond with “I have control”. Similarly, when you take back control, say clearly “I have control” and start flying only when you have heard the other pilot say “You have control”. The actual phrase is not too important as long as its intention is clear and it is used consistently and religiously.

Date	1-Feb-2016	Region	NSWGA	SOAR Report Nbr	S-0686
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3	Other Powerplant/Propulsion Issues
A/C Model 1	DG-400	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Ground Ops	PIC Age	68

During the Daily inspection and while testing the fuel pump the pilot noticed fuel was leaking from the carburetor. The pilot tightened some screws and the leak was sealed. The aicraft has been sent away for an early maintenance inspection. This incident highlights the importance of conducting a thorugh pre-flight check of all systems. The pilot 's CFI noted that the fuel pump should be engaged during the DI to test for fuel leaks.

Date	1-Feb-2016	Region	NSWGA	SOAR Report Nbr	S-0707
Level 1	Operational	Level 2	Aircraft Control	Level 3	Incorrect configuration
A/C Model 1	Duo Discus T	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	64

The purpose of the flight was to provide an engine type endorsement. Upon returning to the home airfield following a short cross-country flight, the pilot under training extended the engine, which started in the usual manner. When the pilot under training subsequently initiated the shut-down procedure, the propeller noise levels and vibration still seemed quite high leading both pilots to suspect that the engine had not stopped. The ignition was momentarily switched on and the engine attempted to fire, thus confirming to the pilots that the engine had indeed stopped. The shut-down procedure was rechecked and the pilots confirmed all switches were in the correct position. As a precautionary measure, the command pilot immediately joined circuit and conducted a landing with the engine extended and propeller windmilling. Subsequent discussion with the aircraft agent revealed that the pilots did not allow sufficient time for the propeller to stop and the engine to fully retract. The aircraft flight manual states: *"To stop the engine reduce the speed to about 90 km/h (49 kt, 56 mph) and switch off the ignition. To stop the propeller...Hold down retraction key, watch rear-view mirror and release key after about 5 seconds just before the prop hub disappears behind the fuselage back (prop blades will still be clear from the engine bay doors) - prop will stop spinning fairly quickly. Thereafter (with prop stopped) the power plant is fully retracted - regardless of the position of the propeller blades - until the green LED signal (RETRACTED) comes on."* This incident highlights the importance of checking pilots being familiar and in practice operating the aircraft and its engine.

Date	1-Feb-2016	Region	VSA	SOAR Report Nbr	S-0667
Level 1	Operational	Level 2	Ground Operations	Level 3	Ground handling
A/C Model 1	SZD-51-1 Junior	A/C Model 2	N/A		

Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	48

After preparing his glider for flight, the pilot untied the 'tie-down' ropes but failed to remove the rope from the hole in the starboard wing tip skid. The glider was attached to the vehicle and as it was moved from the tie-down area the rope tore the tip skid from the wing tip. The glider was de-rigged and sent for repair. This is not an uncommon incident and highlights the importance of ensuring tie-down ropes are completely removed from the glider before towing out.

Date	6-Feb-2016	Region	VSA	SOAR Report Nbr	S-0710
Level 1	Operational	Level 2	Aircraft Control	Level 3	Incorrect configuration
A/C Model 1	Janus C	A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Launch	PIC Age	68

While going through the pre take-off checks, the command pilot forgot to lock the airbrakes when he became distracted by another glider that landed nearby and had to be pushed clear. During the winch launch the airbrakes slowly worked open, which went unnoticed by the command pilot despite periodically checking the wingtip attitude to the horizon. Attempts by the ground crew to alert the flight crew by radio were unsuccessful. After releasing from what appeared to be a normal launch, the command pilot noticed a high descent rate that was attributed to heavy sink that the second pilot had experienced on an earlier flight. The command pilot decided to return to the airfield but found himself too high to land downwind so manoeuvered to land into-wind midway down the runway. Due to the high sink rate, the command pilot was unable to complete the 180 degree the turn onto final and landed diagonally across the runway. The command pilot initiated a ground loop to avoid collision with the airfield boundary fence, during which the port wingtip suffered minor damage. The command pilot noted that a safer landing could have been made on the cross strip, which would have involved only a 90 degree turn onto final. Post-flight it was determined that the aircraft radio was faulty, which is why calls from the ground crew were not heard. This incident highlights the importance of conducting uninterrupted pre-flight checks, and that pilots physically determine the airbrakes are locked by cycling the control and ensuring the overcentre lock has engaged. It also highlights how increased workload can lead to impaired decision making and decreased and situational awareness, leaving pilots susceptible to goal fixation.

Date	6-Feb-2016	Region	VSA	SOAR Report Nbr	S-0679		
Level 1	Consequential Events	Level 2	Low Circuit	Level 3	Low Circuit		
A/C Model 1	PW-6U			A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	64

The Instructor became distracted while conducting air work with the student and left the decision to break-off the exercise late. The pilot flew a marginal glide back to the airfield. While established on the downwind leg of a right-hand circuit, at about 600ft AGL the instructor decided to conform to convention and made a mid-field join for a left-hand downwind. The consequent loss of height from crossing the runway resulted in a very low turn onto the final approach, although a safe landing was completed. The instructor had only held his rating for 12 months, lacked currency and was not familiar with the aircraft. Other causal factors include loss of situational awareness from focussing on an exercise, and a desire to conform to expected circuit practice when a modified circuit was more appropriate.

Date	7-Feb-2016	Region	VSA	SOAR Report Nbr	S-0678		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing		
A/C Model 1	Standard Libelle 201 B			A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	65

This experienced pilot advised that he failed to retract the undercarriage during his post-release check. After flying a competition cross-country task with the wheel down, the pilot then retracted it during the pre-landing check. A visual inspection to confirm the undercarriage was in the down position was not made. OSB 01/14 'Circuit & Landing Advice' confirms that the pre-landing checklist is a 'check' and not an 'action' list. The undercarriage check should verify the undercarriage lever is matched to the lowered position on the

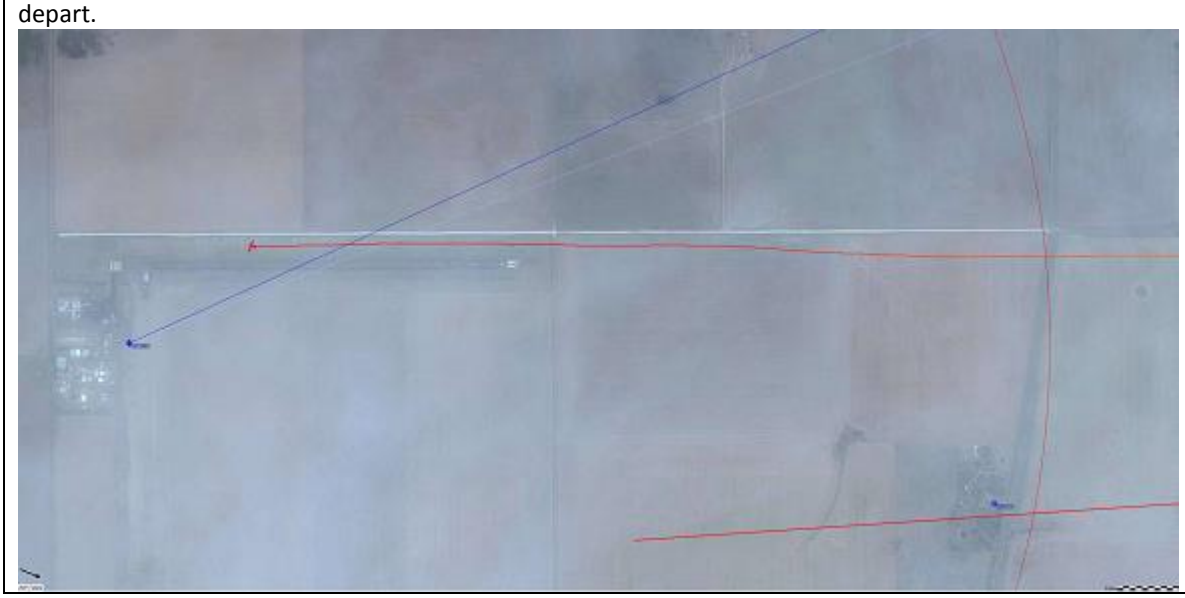
placard. Fatigue may have been a factor affecting the quality of the pilot's pre-landing check.

Date	7-Feb-2016	Region	GQ	SOAR Report Nbr	S-0668		
Level 1	Operational	Level 2	Miscellaneous	Level 3	Rope/Rings Airframe Strike		
A/C Model 1	ASK-21	A/C Model 2	Cessna 150M				
Injury	Nil	Damage	Minor	Phase	Launch	PIC Age	52
Following a normal launch, the glider/tow plane combination climbed to altitude in benign weather conditions. At about 1700ft AGL the tow rope disconnected from the tow plane. The tow pilot advised he did not manipulate the release. Both aircraft made normal landings and the rope was dropped by the glider in the field next to the airfield. Subsequent inspection of the tow plane revealed damage to the bottom surface of the rudder. The tow plane uses a Schweitzer release and the correct ring sets were being used. The reason for the uncommanded release was not determined.							

Date	10-Feb-2016	Region	VSA	SOAR Report Nbr	S-0670

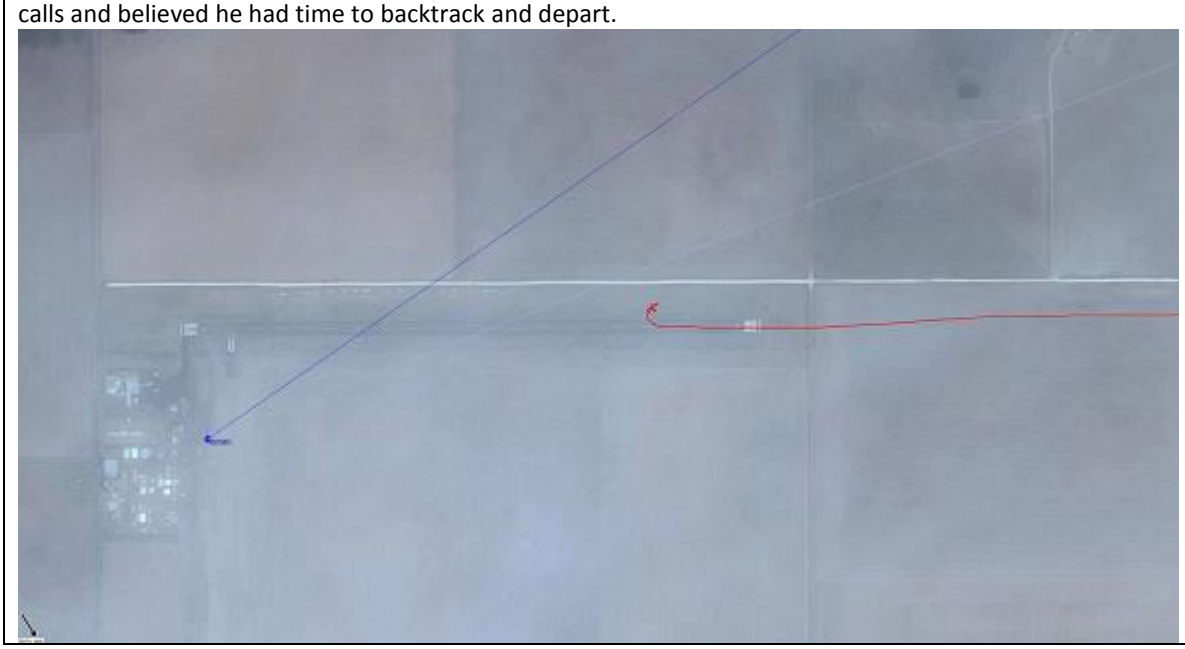
Level 1	Operational	Level 2	Airframe	Level 3	Landing gear/Indication		
A/C Model 1	Ventus-2cM	A/C Model 2	N/A				
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	79
Following the completion of a competition flight, the experienced pilot configured the aircraft for landing and lowered the undercarriage. Shortly after touch down the undercarriage collapsed and the aircraft came to rest on the fuselage. The reason for the collapse was not identified.							

Date	12-Feb-2016	Region	VSA	SOAR Report Nbr	S-0671		
Level 1	Operational	Level 2	Runway Events	Level 3	Runway incursion		
A/C Model 1	SZD-55-1	A/C Model 2	Cessna 172M				
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	66
The glider was established on final approach when a Cessna taxied to the downwind threshold of the runway and proceeded back-track at a brisk pace. The glider pilot, who had made all appropriate radio calls, was forced to take avoiding action and land on the grass to the right of the runway to avoid a conflict. The incident was reported to the ATSB who contacted the pilot of the Cessna. The Cessna pilot advised he was aware of the gliding activity but did not hear any other radio calls and believed he had time to backtrack and depart.							



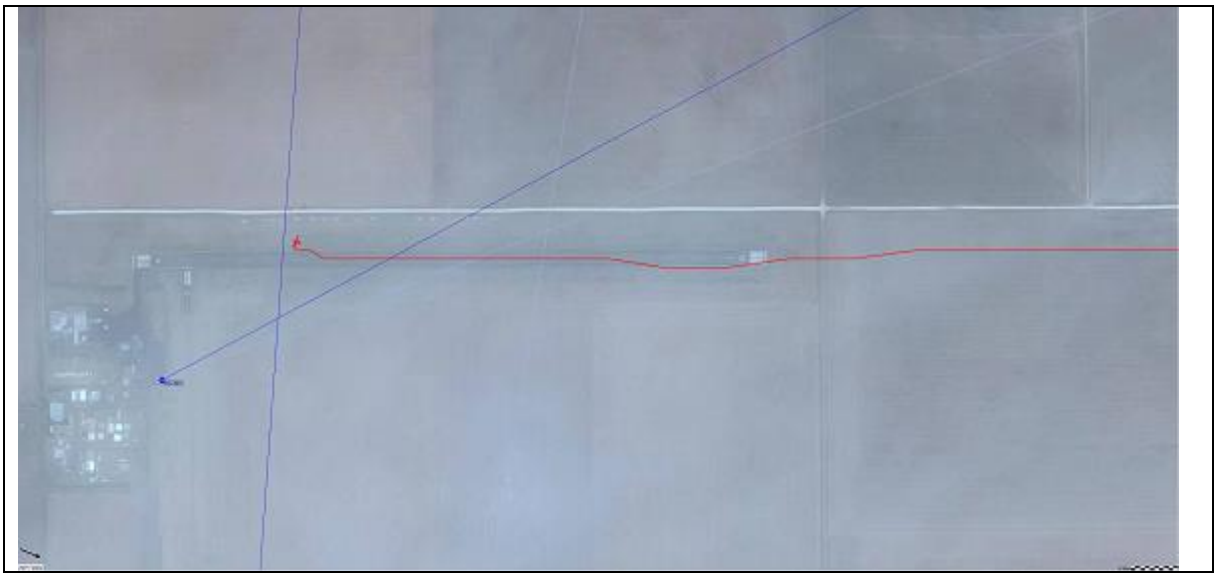
Date	12-Feb-2016	Region	VSA	SOAR Report Nbr	S-0672		
Level 1	Operational	Level 2	Runway Events	Level 3	Runway incursion		
A/C Model 1	Twin Astir	A/C Model 2	Cessna 172M				
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	58
Upon return from a competition task, the glider pilot announced his intention on the CTAF to conduct a straight-in approach on the operational runway. Another gider was also on a long final approach several seconds behind. When the glider was established on short finals, a Cessna aircraft gave a taxying call, entered the upwind threshold and commenced to backtrack runway 26. As there were gliders occupying the left- and right-hand grass verges, the command pilot gave a radio call to advise he would land short on the runway and immediately taxi clear. The glider touched down on the piano keys and was taxied off to the right but it did not fully clear the runway as the main undercarriage fell into a rut between the runway markers and was immovable. The Cessna continued to backtrack the runway at a brisk pace, during which							

time the other landing glider over flew the Cessna to one side and landed long on the runway. The incident was reported to the ATSB who contacted the pilot of the Cessna. The Cessna pilot advised he was aware of the gliding activity. He further advised that he had heard a glider call 5 miles but did not hear any other radio calls and believed he had time to backtrack and depart.



Date	12-Feb-2016	Region	SAGA	SOAR Report Nbr	S-0674				
Level 1	Operational	Level 2	Runway Events	Level 3	Runway incursion				
A/C Model 1	ASW 28-18	A/C Model 2	Cessna 172M						
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	68		

Upon return from a competition task, the glider pilot announced his intention on the CTAF to conduct a straight-in approach on the operational runway. When the glider was established on short finals, a Cessna aircraft entered the upwind threshold and commenced to backtrack runway 26. As there were gliders occupying the left- and right-hand grass verges, the command pilot flew to the left of the bitumen runway so as not to overfly the taxying Cessna and then landed long on the bitumen. The incident was reported to the ATSB who contacted the pilot of the Cessna. The Cessna pilot advised he was aware of the gliding activity and that a glider had to overfly his aircraft. He further advised that he had heard a glider call 5 miles but did not hear any other radio calls and believed he had time to backtrack and depart.



Date	13-Feb-2016	Region	VSA	SOAR Report Nbr	S-0683		
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3	Aircraft preparation		
A/C Model 1	Twin Astir	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	65

During launch on an Air Experience Flight the rear canopy came open. The instructor was able to close and lock the canopy without further incident. A debriefing by the club CFI revealed that after the instructor had completed the final 'canopy/airbrakes locked' challenge, the passenger in front seat wanted to adjust his camera. To assist, the instructor opened his rear canopy to lean forward and adjust the camera but did not properly secure the canopy again. This type of incident is quite common when the pilot's pre take-off checks are interrupted and are not recommenced from the beginning. The lesson here is – if distracted for any reason during your checks, begin the checks again.

Date	13-Feb-2016	Region	VSA	SOAR Report Nbr	S-0684		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing		
A/C Model 1	PIK-20D	A/C Model 2	N/A				
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	72

This experienced pilot failed to retract the undercarriage post-release. After a short flight the pilot retracted the undercarriage during the pre-landing check. A visual inspection to confirm the undercarriage was in the down position was not made. OSB 01/14 'Circuit & Landing Advice' confirms that the pre-landing checklist is a 'check' and not an 'action' list. The undercarriage check should verify the undercarriage lever is matched to the lowered position on the placard.

Date	14-Feb-2016	Region	GQ	SOAR Report Nbr	S-0673		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Control issues		
A/C Model 1	Piper PA-25-235	A/C Model 2	IS-30				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	53

Gliding operations were being conducted in turbulent conditions with a strong wind gradient and some shear. During the aerotow launch and at approximately 900ft AGL on the crosswind leg the tow pilot felt the

glider, which was being flown by an experienced instructor, move aggressively out of station to the right. The tow pilot then noticed that the glider was starting to climb from the low tow position. The movement of the glider caused the tow plane to yaw despite the efforts of the tow pilot to counter it. The rope went slack and then became taught exacerbating the yaw. The tow pilot, experiencing diminishing control authority, released the glider. Normal landings were completed by both aircraft. This incident shows that operations in marginal conditions (e.g. strong wind gradient, gusty winds, turbulence and crosswinds) is fraught and even experienced glider pilots can experience difficulty maintaining station behind the tow plane. Tow pilots need to ensure they are comfortable operating in marginal conditions and should never hesitate to release the he glider if losing control of the tug.

Date	15-Feb-2016	Region	SAGA	SOAR Report Nbr		S-0716	
Level 1	Operational	Level 2	Airframe	Level 3		Other Airframe Issues	
A/C Model 1		DG-1000S		A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	63

The pilots were competing in the 20 metre Two Seat National Gliding Championships. On one competition day the pilots experienced an electrical power failure during flight and had to switch over to the reserve battery. This had been an ongoing intermittent issue for some months and had been the source of considerable aggravation. That evening the loss of power was identified as a problem with the main battery connection just behind the rear seat. While undoing a screw to remove the connector section that was attached to the fuselage, the retaining nut fell into the bottom of the fuselage. The pilot continued to troubleshoot the problem without retrieving the nut. The real issue was identified as being with the connector section attached to the battery. This finding took the focus from the fuselage section of the connector and the loose nut. Assistance was then sought from a third party who had the appropriate tools to make the repair. The problem was rectified by replacing a damaged connector and the aircraft was returned to service. Unfortunately, the pilots forgot to retrieve the loose nut and it subsequently slipped their mind. Approximately four weeks later, during routine maintenance, the fuselage section of the connector was found to be loose. It was only then that the pilots recalled the issue. Following an extensive search the loose nut could not be located and is believed to have fallen from the aircraft. One of the pilots noted that he is normally very focused with a high level of attention to detail. In this instance he did not follow through with a problem he knew he had created and then forgot about it. Many lapses occur when the engineer has been interrupted part way through a task, often when called away to a more urgent job. They may then fail to return to the task, leave out a step, or lose their place in the task. In the aforementioned incident, the engineer (pilot) forgot to finish the task after leaving the job to get the assistance of another engineer. Another contributor was that after months of being unable to identify the ongoing issue, the pilots were quite euphoric in having solved the problem, unconsciously allowing a much more important issue to pass without resolution.

Date	17-Feb-2016	Region	WAGA	SOAR Report Nbr		S-0676	
Level 1	Operational	Level 2	Runway Events	Level 3		Runway excursion	
A/C Model 1		ASW 24E		A/C Model 2	N/A		
Injury	Nil	Damage	Substantial	Phase	Launch	PIC Age	54

The glider was being launched by aerotow off the belly release while fully ballasted. During the initial ground roll the port wing dropped and the pilot applied corrective control inouts. As the port wing began to rise it caught in long grass along the verge of the runway, resulting in the glider ground-looping. The tow rope back-released and the glider careered off the runway and collided with a T-hangar and parked trailer just outside the airfield boundary. The club will ensure the grass is better maintained in future. In situations where there is limited clearance alongside the runway, glider pilots should release early in the case of a wing drop.

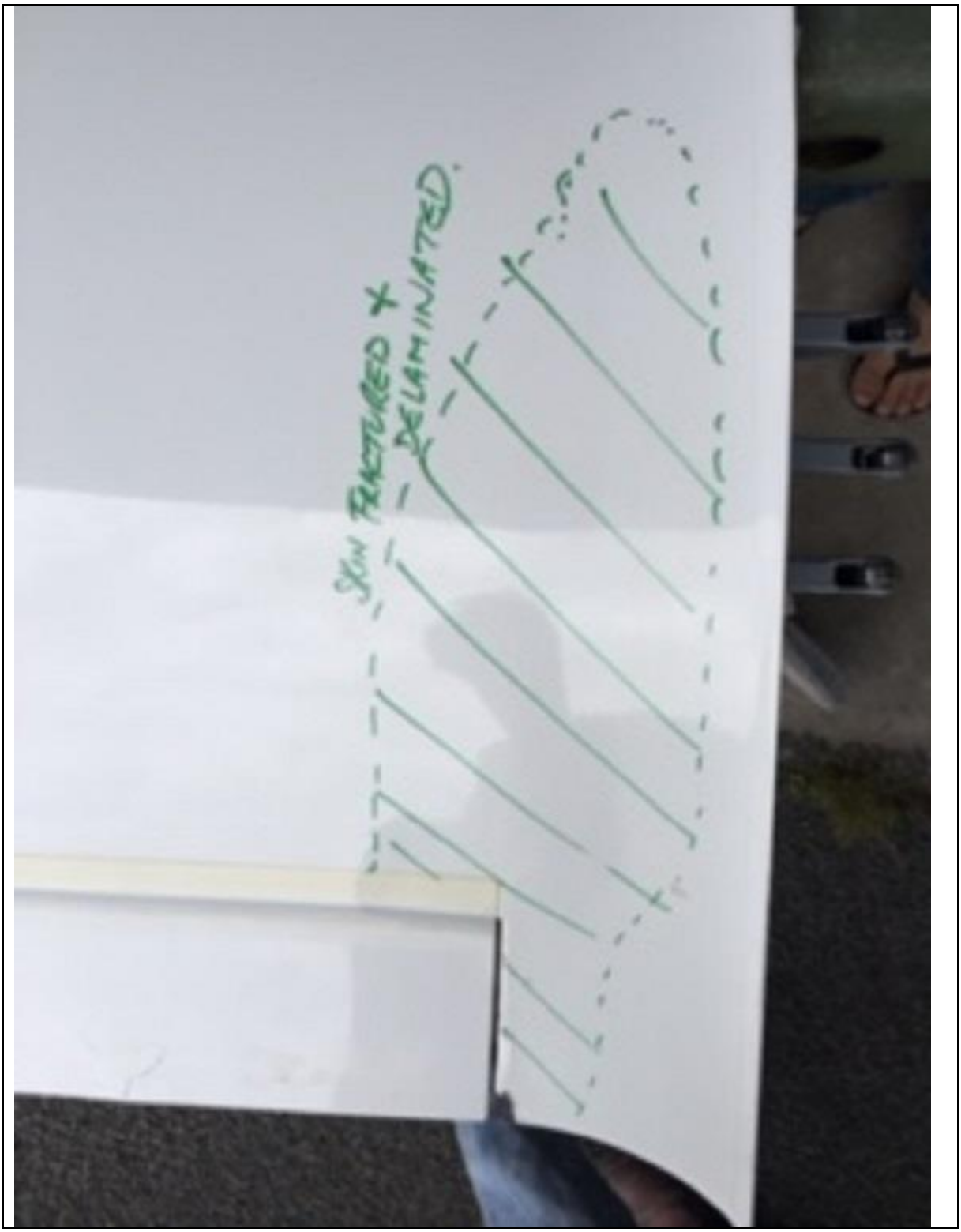
Date	18-Feb-2016	Region	NSWGA		SOAR Report Nbr		S-0682		
Level 1	Technical	Level 2	Powerplant/Propulsion		Level 3		Engine failure or malfunction		
A/C Model 1		Arcus M			A/C Model 2		N/A		
Injury	Minor	Damage	Minor	Phase	Landing		PIC Age	83	

The pilot was competing in the National 20 Metre Championships and flying on a 3 hour Assigned Area Task of between 263 & 568 kms. Nearing the end of the flight the pilot got low near a regional airport and decided to deploy the engine to self-retrieve. An initial attempt was made to start the engine while in circuit. While the propeller appeared to extract properly, indicated by the green light on the engine display unit on the instrument panel, the engine did not turn over when the starter switch was pressed and the pilot heard a faint noise similar to a jammed starter motor. The secondary extraction switch was operated to ensure full extension and all resettable fuses checked. While troubleshooting the engine parameters, the pilot forgot to lower the undercarriage and landed with the engine deployed and the wheel retracted. The pilot commented that the situation may have been avoided had the covered emergency switch been activated, thereby leaving only the extension drive, ignition and starter motor operable. Despite a thorough check of all components, no fault could be found with the engine and ancillary components. Modern motor gliders are very complex mechanically and subject to high vibration effects. All electronic and mechanical parts will sooner or later have operational failures, even where there are built-in redundancy features such as dual ignition, fuel pumps and carburation systems. Engine malfunctions are not uncommon in powered sailplanes and when they occur the workload increases dramatically. Pilots of powered sailplanes should always configure the aircraft for landing and lower the undercarriage at a safe height before attempting to raise and/or start the engine. By so doing, a failure to complete the pre-landing checks should not end in damage

to the aircraft or pilot.

Date	20-Feb-2016	Region	VSA	SOAR Report Nbr	S-0708		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Hard landing		
A/C Model 1	ASW 27-18 E			A/C Model 2	N/A		
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	48

The pilot had recently acquired the aircraft and by the time of the accident flight had accumulated 10 launches for 48 hours on type. The 10 flights were cross-country, each exceeding 400 km and one nearly 900 kms in distance. The pilot was very impressed with the good performance of this new generation sailplane. On the day of the accident conditions were mediocre and the pilot had declared a modest out and return flight of just under 190 kms and loaded water ballast. Despite the short task, weak conditions and strong winds at height made progress slow. The pilot rounded the turn point after 2 hours flying and working a height band between 2000ft and 4,600ft. After a further 1.5 hours flying time the pilot was within 50kms of the home airfield and had climbed to 5,500ft. When within 20knms of the home airfield the pilot elected to extend the flight by heading almost 90 degrees to the east of track and into the hills, where a climb to over 5,500ft was attained. The pilot continued to head into the hills but did not find any good climbs and when about 30 kms out he decided to head home on a marginal final glide. Unfortunately the pilot forgot the glider was carrying water ballast and so did not dump it. The pilot persisted with the marginal final glide based on the perception that the aircraft's high performance would get them home. It wasn't until the glider was very low that the pilot decided to abandon the glide and outland. Unfortunately the pilot had left the decision to outland too late and had no time to survey a suitable paddock or complete the pre-landing checks. While the selected paddock was satisfactory, the aircraft landed heavily while fully ballasted and suffered substantial damage. The pilot's CFI noted that a lack of familiarity with the aircraft, coupled with dehydration, stress and goal fixation contributed to the pilot's lack of situational awareness and inadequate decision making. Cross-country soaring is a stressor, where high workload and fatigue can lead to impaired decision making and reduced situational awareness. Human factors including decision biases, goal fixation and cognitive tunnelling in cross-country flying may lead to pilots eroding safety margins more than in normal flying. Being aware of the dangers of continuing into marginal circumstances, of setting boundaries, having a sound knowledge of rules and procedures, disciplined adherence to minima and performance requirements, prioritisation of options, and planning to deal with potential situations will act as defences against unsafe conditions.



Date	21-Feb-2016	Region	WAGA	SOAR Report Nbr	S-0677

Level 1	Operational	Level 2	Aircraft Control		Level 3	Hard landing	
A/C Model 1		PW-5 "Smyk"		A/C Model 2	N/A		
Injury	Serious	Damage	Substantial	Phase	Launch	PIC Age	69

The early solo pilot was still subject to daily check flights with an instructor. On the morning of the accident the pilot flew with an instructor but did not cope well with the rough crosswind conditions. The pilot commenced a pilot induced oscillation on aerotow take-off requiring instructor intervention, and then 'cramped' his circuit and misjudged his flare requiring the instructor to take control of the landing. The pilot and instructor discussed the flight and it was clear that the pilot needed further training. Later in the day another instructor, who was not flying in command due to a medical condition, decided to convert the pilot into his first single seat aircraft - a PW5. This instructor did not speak with the pilot's earlier instructor and was unaware the pilot had not performed well on his last flight. The pilot himself was not keen to be converted to the PW5 due to his poor performance on the check flight and because he was uncomfortable with the crosswind conditions. Nevertheless, he deferred to the Instructor's recommendations in the belief that this experienced instructor would not send him solo if he was not up to standard. During the launch the pilot again experienced pilot induced oscillations and flew the aircraft heavily onto the ground at least twice. Sometime during these excursions the pilot activated the release and attempted to maintain safe speed. The tow plane flew off and safely completed a circuit and landing. The PW5 was substantially damaged during the ground impacts and the pilot suffered a fractured spine. The instructor conducting the conversion made a number of fundamental errors that were out of character, including not discussing his intentions with the previous instructor and not recognising the pilot did not meet the club's internal policy for aircraft conversion. Subsequent investigation suggests that the instructor conducting the conversion was suffering a medical condition that most likely affected his judgement. The instructor voluntarily withdrew from all instructing duties pending medical clearance.

Date	21-Feb-2016	Region	NSWGA		SOAR Report Nbr	S-0685	
Level 1	Airspace	Level 2	Aircraft Separation		Level 3	Near collision	
A/C Model 1		DG-800 B		A/C Model 2	Saab 340		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	36

ATSB Investigation. On 21 February 2016, the pilot of a Glaser-Dirks DG-800B glider, registered VH-IGC (IGC), was participating in a coaching flight with a second glider and pilot from Pipers Field aerodrome, New South Wales (NSW) (Figure 1). The glider pilots planned to track towards Cowra, and to remain outside a 10 NM radius of Orange Airport, both also in NSW. The gliders climbed to about 8,000 ft above mean sea level (AMSL) as they departed Pipers Field, descended to about 7,100 ft at 9 NM south-west of Pipers Field, climbed to 9,100 ft and then descended again. Not long after they departed Pipers Field, the glider pilots both selected their radio (each glider was fitted with one VHF radio) to a discrete glider frequency 122.9. The pilot of the following glider reported being at the same level and about 1,000 m behind IGC. At about 1420 Eastern Daylight-saving Time (EDT), a Regional Express SAAB 340B aircraft, registered VH-ZLA (ZLA), taxied at Orange Airport, for a scheduled passenger service to Sydney, NSW. The flight crew consisted of a first officer, who was the pilot flying for the sector, and a captain, who was the pilot monitoring.[1] The flight crew broadcast on the Orange common traffic advisory frequency (CTAF) when taxiing and again when rolling on runway 11. As the aircraft climbed through 2,000 ft above ground level, the first officer initiated a slight right turn onto the departure track of 123° to track towards the waypoint 'MEEGA'. The captain broadcast a departure call on the CTAF and then contacted air traffic control (ATC) on Melbourne Centre frequency, and in response received a clearance to enter controlled airspace. The lower limit of Class E airspace in this area was 8,500 ft AMSL.

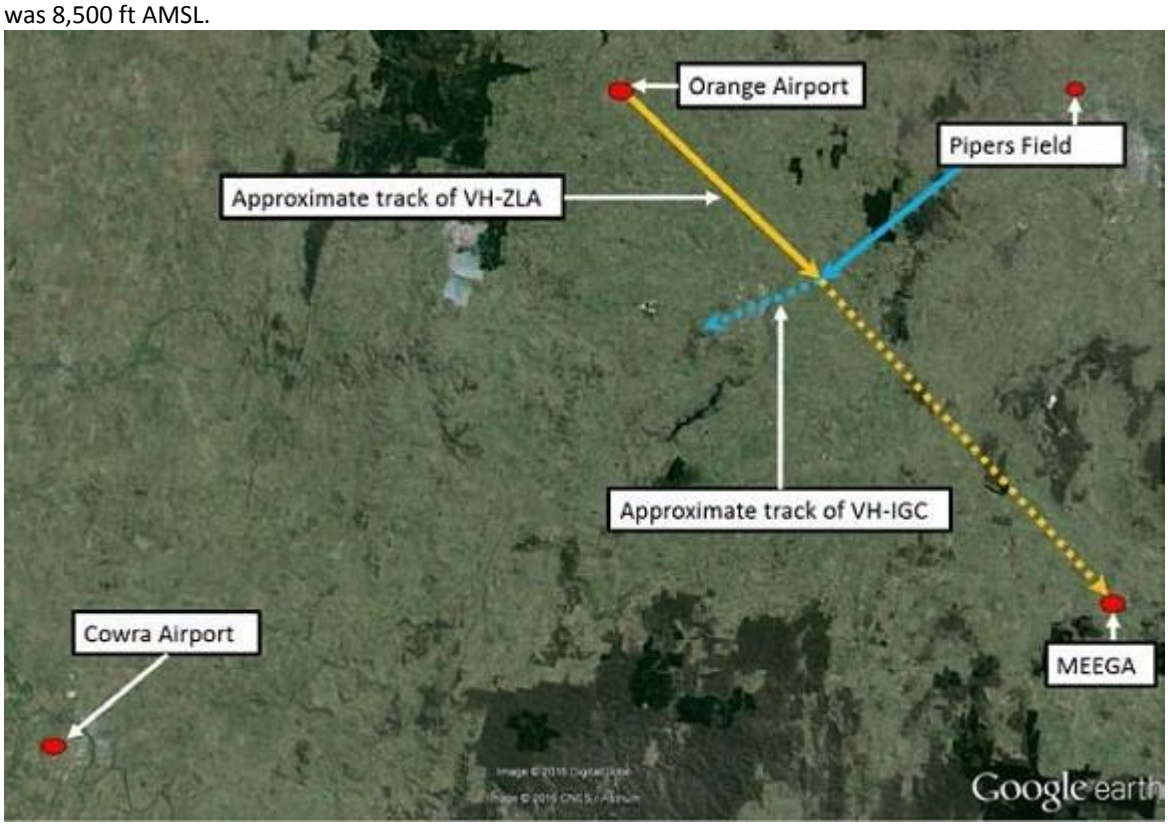


Figure 1: Approximate aircraft tracks and relevant locations
Source: Google earth – annotated by ATSB

When climbing through about 6,000 ft AMSL, the first officer saw a build-up of cumulus cloud ahead, and asked the captain to request a clearance to track 5 NM right of track to remain clear of it. As the captain started to read back the amended clearance from ATC, the aircraft was climbing through about 7,500 ft. The captain sighted the glider (IGC) ahead, just below the cloud base, and assessed there was a risk of collision. The captain immediately took control of the aircraft from the first officer, disconnected the autopilot and lowered the nose of the aircraft to ensure it passed below the glider. The flight crew estimated that the

glider passed within about 100 m of the aircraft. The glider IGC was descending through 8,560 ft AMSL, and 11 NM from Orange Airport, when the pilot of IGC sighted ZLA in their 3 o'clock position and climbing towards them. The pilot of the following glider also alerted the pilot of IGC to the aircraft on their discrete glider frequency. The pilot of IGC assessed that while ZLA was on a direct track towards IGC, due to its climb rate there was no risk of collision, and elected to continue on their current track. The pilot of IGC estimated that ZLA passed about 200 m below the glider. The pilot of the glider following IGC reported that ZLA passed between the two gliders, below IGC but at about the same altitude as the following glider. The flight crew of ZLA did not see the second glider at any stage, nor did either glider appear on the aircraft's traffic alert and collision avoidance system (TCAS).

Notice to airmen (NOTAM)[2] and Advisory Note

The flight crew of ZLA had reviewed the NOTAMs prior to commencing the first sector of the day from Sydney to Orange. NOTAM C0002/16 referred to increased glider activity due to gliding championships at Narromine, NSW, from 14 to 21 February 2016. The NOTAM advised that glider pilots would be on the CTAF 126.7 within 10 NM of the aerodrome (Narromine), otherwise on either frequency 122.7 or 122.9. The Gliding Federation of Australia had also issued a Significant Gliding Activity Advisory Note, which included a significant gliding event from 6 to 12 February 2016, with 20 gliders within a 500 km radius of Narromine (which includes the Orange area), and that the associated gliding frequencies were 122.025 and the CTAF 126.7. The advisory note was sent by email to 'regular airspace users', which included Regional Express. The gliders involved in the incident were not operating in association with the championships. The Gliding Federation of Australia commented that the Advisory Note was intended to alert flight crews to gliders operating in the vicinity of the Orange CTAF (as Orange was within the 500 km radius). On the day of the incident, the gliders operating as part of the championships were north- west of the Orange CTAF.

Company procedures for Regional Express

Regional Express had special procedures to assist in maintaining separation with gliders for aircraft operating in the vicinity of Bathurst, NSW, and Narromine, but at the time of the incident, not for Orange. Orange had not been identified as a gliding location, unlike Bathurst and Narromine. These were published in the company's route manual, which detailed normal and special requirements of every aerodrome they operate into. The waypoints and tracks used for approaches to Bathurst, the location of Pipers Field aerodrome, and tracks to be avoided were published in the En Route Supplement Australia entry for Bathurst under Flight procedures. The special procedures for Bathurst advised of a large amount of glider activity in the Pipers Field area. It stated that the VHF frequency the gliders use was 122.7. It included a map depicting preferred tracking from Bathurst to avoid Pipers Field, and which tracks to be avoided. These also included a recommendation that on departure from Bathurst to Parkes, flight crew broadcast on the glider frequency 122.7 prior to taxiing at Bathurst, which was the frequency most commonly used by glider pilots in the area. There was no mention of glider frequency 122.9, which the glider pilots had selected on the incident flight.

Flight data

The aircraft operator provided the ATSB with the flight data for the incident flight. The flight data showed that as ZLA climbed through about 8,000 ft, the autopilot was disengaged, and the captain applied a nose-down elevator control deflection and the aircraft pitched down about 3 to 4°.

Pilot comments

Captain of ZLA

Due to workload, it was not always possible to broadcast on the specified glider frequency – they were required to monitor CTAF and ATC frequencies, and the aircraft was fitted with two VHF radios. In several years of broadcasting the recommended calls, the captain could not recall ever having received a response from any glider pilot to a call broadcast on the glider frequency. Due to terrain shielding, the glider pilots may not hear a broadcast from the ground at either Bathurst or Parkes. Fundamental to the incident was a lack of communication between ZLA and the glider/s. There was no situational awareness between the aircraft. If the glider pilot had broadcast on the CTAF, they could have avoided the near collision. Later in the day of the incident flight, the flight crew broadcast on the Narromine glider frequency when on descent into Dubbo. The responses received from glider pilots on the frequency were unhelpful and potentially distracting.

First officer of ZLA

The first officer reported that they had never encountered a glider in the vicinity of Orange before, particularly through the centreline of an active runway. The climb is a busy stage of flight – they were configuring the aircraft, and making radio calls on Melbourne Centre ATC. If they had been on descent, they would have descended through the cloud straight on top of the gliders, and the glider pilots were not on the same radio frequency as they were. If there is a specified glider frequency active, they select that prior to broadcasting a taxi call on the CTAF and ask whether there are any gliders in the area. Once they have selected the CTAF, they remain on it (with Melbourne Centre ATC selected on the other radio).

Pilot of IGC

The pilot of IGC provided the following comments:

- The gliding club had a procedure for pilots to assist in maintaining separation with Regional Express flights out of Bathurst, but not for Orange. The procedure was documented and circulated via email to members of the gliding club. Associated maps and information were also prominently displayed in the gliding clubhouse, and reiterated to pilots at pre-flight briefings.
- As they were not going to enter the Orange CTAF, the two glider pilots switched to the gliding frequency 122.9 departing Pipers Field. They normally broadcast when entering a CTAF and then monitor the frequency, but they were not going into the Orange CTAF, so did not select that frequency at any stage of the flight.
- If they heard a broadcast from a Regional Express crew, they would only respond if they anticipated a risk of collision.
- The proximity between the aircraft and glider was closer than was comfortable but they did not think there was a risk of collision.
- It was a common route for the gliders tracking from Pipers Field to Cowra via Blayney as they had identified a number of sites suitable for an outlanding[3] if required.
- When outside the CTAF but within the identified zones of increased collision conflict, it would be good to be on a common frequency.

Class E Airspace

Class E Airspace is controlled for IFR flights, and uncontrolled for VFR flights. The Gliding Federation of Australia Airways and Radio Procedures for Glider Pilots stated that 'Gliders are encouraged, but not required, to monitor the area frequency when operating in Class E Airspace'.

Pipers Airfield Airspace Procedures

Following the incident, an email was sent to members of the Bathurst Soaring Club to advise them of the incident, and it contained a copy of the existing procedures for members to read. The procedures included the following instructions.

- Keep a good lookout at all times.
- Study and understand the map of the Regional Express flight paths and the radio frequency you should be on.
- Monitor 119.0 MHz (which was the Orange CTAF) in the vicinity of the Regional Express flight paths to/from Orange as shown on the map.
- Monitor 119.0 MHz in the vicinity of Orange Airport and keep a good lookout especially for traffic from/to Bathurst, Sydney, Parkes and Dubbo.
- Make sensible calls on the CTAF when within 10 NM of the aerodrome to alert traffic in those areas where you are and what your intentions are.
- When operating outside the normal 10 NM but on the likely track to or from Sydney, act as if in the vicinity (i.e. within 10 NM). Recent incidents have shown that operational profiles for Regional Express flights have them much higher than we would normally expect. Do not assume that you should not respond because you believe you are too high.

ATSB comment

The separation issue in this case may have been avoided if the glider pilot had been monitoring and broadcasting on the CTAF. The crew of ZLA were monitoring and broadcasting on the Melbourne Centre ATC

frequency and CTAF, and the glider pilot was monitoring a discrete glider frequency. Even if the flight crew of ZLA had broadcast on, or had been monitoring, the nominated glider frequency of 122.7, neither of the glider pilots were monitoring, or broadcasting on, that frequency, so this would have been an ineffective means of alerting the glider pilots of their intentions. The advisory for Regional Express pilots to make an additional broadcast on a glider frequency will not necessarily reach the glider pilots targeted. Operating under the visual flight rules, and the exemption to CAO 95.4 Instrument 2011, there was no specific requirement for the glider pilot to monitor or broadcast on the area frequency. Regional Express commented to the effect that in accordance with this exemption, separation between a glider and other aircraft is dependent on see-and-avoid only. Regional Express aircraft are fitted with VHF radios and TCAS. However, these are not capable of alerting the crew to a glider that is not fitted with a transponder and where the glider pilot is not listening or broadcasting on the same frequency as the Regional Express crew. The crew of ZLA broadcast their position and intentions on the CTAF, but the pilot of IGC was not monitoring that frequency. The requirement to monitor a CTAF is subject to a level of interpretation, particularly with respect to the altitude above an airfield at which the requirement applies. The Aeronautical Information Package requires a pilot to broadcast on the CTAF when they enter the vicinity of a non-controlled aerodrome. The AIP goes on to describe the vicinity of a non-controlled aerodrome as being:
…within 10 nm of the aerodrome and at a height above the aerodrome that could result in conflict with operations at the aerodrome.
The glider pilots were not monitoring the CTAF because they did not believe they were 'in the vicinity' of Orange Airport, or of inbound or outbound aircraft. Existing forums and processes (managed by the Civil Aviation Safety Authority (CASA) and Airservices Australia) allow airspace users to influence the manner in which airspace is managed and propose changes to relevant documents (such as the En Route Supplement Australia). Where changes have the potential to improve safety, operators are encouraged to present proposals for consideration, using those forums and processes. One relevant forum for proposing airspace-related safety improvements is the CASA Regional Airspace and Procedures Advisory Committee.

Aircraft proximity events review

At the Regional Aviation Safety Forum in March 2012, a representative from Regional Express expressed their concerns about close proximity encounters with gliders. Along with the use of radios, avoiding known departure tracks, and the use of see-and-avoid principles, the compulsory fitment and operations of transponders to gliders was discussed. CASA's Safety Systems Office advised that it would undertake an analysis of aircraft proximity (airprox) events.[4] In 2012, the Civil Aviation Safety Authority (CASA) commenced a safety review into the level of risk from gliders in aircraft proximity events in uncontrolled airspace. In response to discussions at a Regional Aviation Safety Forum in 2013, and following advice from the ATSB of an increase in the number of airprox events across all categories of operations, CASA established an Industry Airprox Working group to examine ways to reduce airprox events and enhance safety. Regional Express and industry groups including the Gliding Federation of Australia, were members of this group. The working group concept was subsequently dropped, and CASA has since developed a process to assess the risk of complex safety issues. The ATSB was provided with a draft of CASA's Safety Risk Profile – Aircraft Separation (Airprox) report. Note that these have not yet been finalised and may change when the final version is published. The stated objectives of the Safety Risk Profile, were:

- to identify the current controls for managing the threat of aircraft on a collision course
- • to identify and, if appropriate, recommend additional treatments, and assign accountabilities, to control risk.
- The risk profile analysed Australian data from the ATSB aviation safety incident reports, and from the UK Airprox Board.
- The findings of CASA's safety risk profile included:
- That the limitations of see-and-avoid are well documented and only through continued education and training will this be an effective risk control measure.
- On-board communications i.e. the use of radios will assist in pilot awareness and upgrade see- and-avoid to alert-and-avoid, this being a more effective risk control. Treatments have been identified in

the areas of carriage and use of radios, English language standards, human factors training.

- Hardware was identified as an effective recovery measure. Since its introduction, airborne collision avoidance systems (such as TCAS) have been a proven risk control in the prevention of mid-air collision. Other hardware technologies are used and emerging which offer varying degrees of protection depending on design and intended application.

The report quoted a European Aviation Safety Agency research project, Scoping Improvements to 'See and Avoid' for General Aviation (SISA), which reviewed initiatives taken (in Europe) to mitigate the limitations of see-and-avoid. The project assessed currently available systems to augment pilots' visual observation including anti-collision devices. They classified and compared the systems, and assessed their relative suitability for general aviation aircraft including gliders. The use of anti-collision devices was not mandatory in Europe, but several systems were already widely used that help the pilot to identify other traffic.

Proposal for the adoption of amended standards for aircraft dependent surveillance – broadcast (ADS-B) fitment in visual flight rules (VFR) aircraft

At its 21st Surveillance Technologies Working Group Meeting in February 2016, the Australian Strategic Air Traffic Management Group drafted a proposal to CASA recommending the adoption of amended standards for ADS-B fitment in VFR aircraft. The Gliding Federation of Australia has a representative in the working group. Fitment of ADS-B technology in VFR aircraft enables awareness of other aircraft traffic, thereby improving aviation safety. The working group suggested that adopting appropriate standards and simplifying the installation process would encourage (voluntary) fitment of ADS-B technology in general aviation aircraft. The proposal stated that if VFR aircraft were equipped with ADS-B OUT equipment, to the nominated standards, safety and efficiency would be significantly improved, because these aircraft would be visible to:

- aircraft with TCAS or other traffic advisory system;
- all aircraft with ADS-B IN; and
- air traffic control, when within line of sight coverage of ADS-B ground station.

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following safety action in response to this occurrence.

Bathurst Soaring Club

Bathurst Soaring Club amended its airspace procedure so that glider pilots are to use 122.7 or the CTAF frequencies and not any other frequency within a 40 NM radius of Pipers Field.

Regional Express – operator of VH-ZLA

As a result of this occurrence, Regional Express has advised the ATSB that they have taken the following safety actions:

Regional Express distributed the following notice to flight crew:

Due to increased glider traffic to the East of Orange it is recommended that if operationally possible a broadcast on 122.7 be made prior to top of descent and/or prior to taxi at Orange.

Communications between Regional Express and Bathurst Soaring Club

Regional Express produced a number of charts showing approach and departure routes from Bathurst and Orange, including Figure 2, and made the following comments to the Bathurst Soaring Club:

On arrival at Orange our flight crew would typically call on the CTAF frequency at around 30 miles from the airport or at top of descent or around 6.5 minutes from the field. In most cases where they are able to use Runway 29 to land they will track to join a straight-in final at 5 miles.

On departure from Orange they would be making all the necessary calls on the CTAF frequency i.e. taxiing, entering the runway, etc.

It would be very helpful if the gliders could maintain a listening watch on the Orange CTAF frequency when in the vicinity of the possible areas of conflict, so that we could have 'alerted see and avoid' separation.

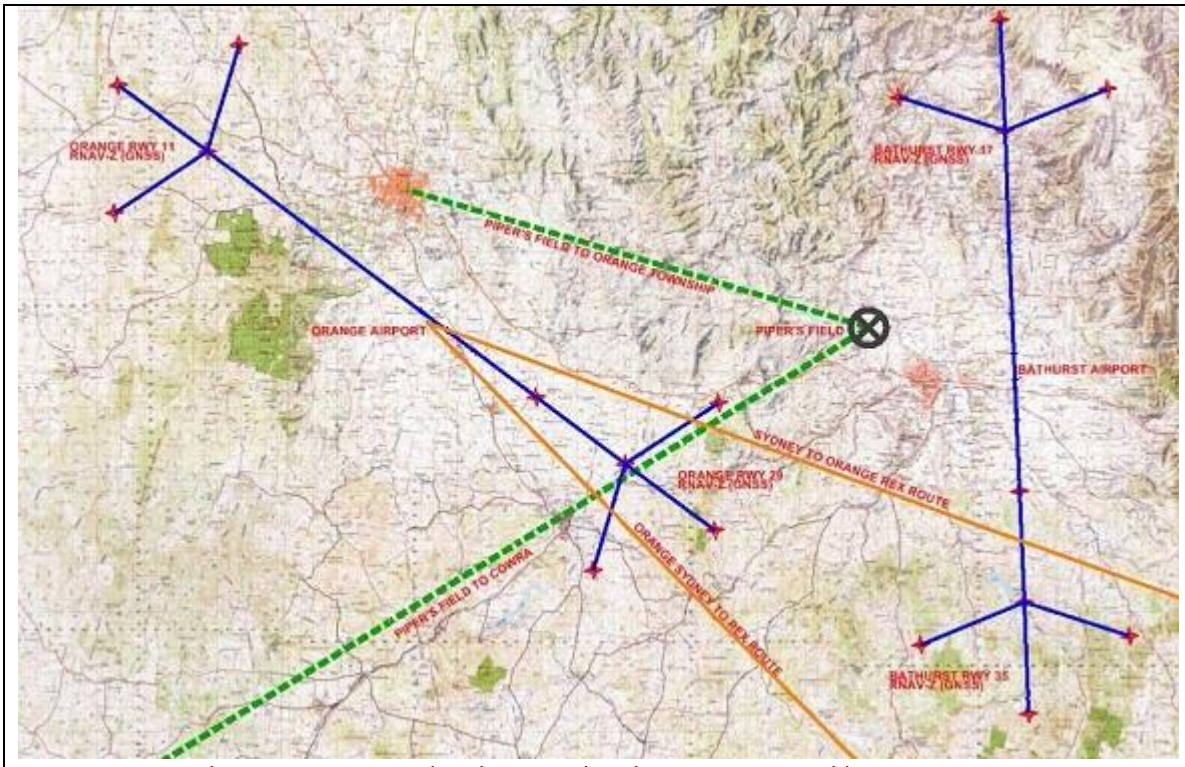


Figure 2: Regional Express Orange and Bathurst tracks relative to Pipers Field
Source: Regional Express

The Gliding Federation of Australia

The Gliding Federation of Australia is conducting a series of National Safety Seminars for glider pilots, which will include:

- highlighting the importance of alerted see-and-avoid in improving situational awareness
- flight planning including awareness of the airlines' operational routes
- the importance of monitoring and broadcasting on CTAF frequencies.In response to this incident, the Federation included an article titled 'Conflicts with non-glider traffic' in the Gliding Australia magazine, which depicted the Regional Express track to Orange.

Safety message

Pilots are encouraged to 'err on the side of caution' when considering when to make broadcasts and whether specific frequencies should be monitored, particularly noting the fundamental importance of communication in the effective application of the principles of see-and-avoid. The ATSB report Limitations of the See-and-Avoid Principle outlines the major factors that limit the effectiveness of un-alerted see-and-avoid. Insufficient communication between pilots operating in the same area is the most common cause of safety incidents near non-controlled aerodromes. A search for other traffic is eight times more effective when a radio is used in combination with a visual lookout than when no radio is used. In areas outside controlled airspace, it is the pilot's responsibility to maintain separation with other aircraft. For this, it is important that pilots use both alerted and un-alerted see-and-avoid principles. Pilots should never assume that an absence of traffic broadcasts means an absence of traffic. The use of transponders greatly enhances safety in non-controlled airspace. The AIP states that pilots of aircraft fitted with a transponder must activate it at all times during flight. Transponders can be detected by aircraft equipped with TCAS, allowing them to detect other aircraft and initiate avoidance action. The use of ADS-B provides additional information to equipped aircraft. Alerting technologies can be used as a 'last line of defence' to warn pilots of aircraft in their vicinity. The available technologies include:

- Portable TCAS, which can be plugged into a cigarette lighter or hardwired, however, these are not

suitable for gliders due to their high power draw.

- Power FLARM is low power and short range so suited to gliders, but does not appear on an aircraft TCAS such as that fitted to ZLA.
- Cheaper ADS-B solutions which must have TSO approval. CASA currently does not mandate ADS-B for gliders but is examining the possibility of encouraging the voluntary use of ADS-B for all VFR aircraft if a low cost solution is available.The following publications provide information that may assist pilots avoid airprox events:
- Staying clear of other aircraft in uncontrolled airspace
- CAAP 166-1(3) provides advice in relation to making radio broadcasts to reduce the risk of coming in close proximity with other aircraft.

[1] Pilot Flying (PF) and Pilot Monitoring (PM) are procedurally assigned roles with specifically assigned duties at specific stages of a flight. The PF does most of the flying, except in defined circumstances; such as planning for descent, approach and landing. The PM carries out support duties and monitors the PF's actions and aircraft flight path.
[2] A Notice To Airmen advises personnel concerned with flight operations of information concerning the establishment, condition or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to safe flight.
[3] Landing somewhere other than the home airfield.

Date	21-Feb-2016	Region	VSA	SOAR Report Nbr	S-0687		
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision		
A/C Model 1	Piper PA-25-260	A/C Model 2	DG-1000S				
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	71
Two gliders had landed on the grass verge to the right of the main runway. The first glider to land was pushed almost clear of the runway markers when a landing tow plane passed between the two gliders in close proximity. The tow pilot advised that he preferred to land on the grass and proceeded on the assumption that the gliders would have been cleared from the runway before he arrived. The tow pilot recognised that he made an error of judgement and that decision to land in that position was incorrect. It is possible the tow pilot was suffering the effects of fatigue and dehydration, which impaired his decision making.							

Date	24-Feb-2016	Region	VSA	SOAR Report Nbr	S-0709		
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3	Abnormal Engine Indications		
A/C Model 1	ASK-21Mi	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	58
Shortly after Take-off the command pilot noticed the coolant temperature was abnormally high, although no audible alarm sounded. As the engine was running normally he continued to a safe height, whereupon the engine shut down and cooling cycle was completed. The flight continued normally. Later inspection, which included a pressure test, revealed a leak in the water pump seal that resulted in a loss of half the coolant.							

Date	27-Feb-2016	Region	SAGA	SOAR Report Nbr	S-0688		
Level 1	Operational	Level 2	Terrain Collisions	Level 3	Collision with terrain		
A/C Model 1	ASW 27-18	A/C Model 2	N/A				
Injury	Serious	Damage	Write-off	Phase	Landing	PIC Age	59
On 27 February 2016 at 15:39:34 Central Daylight Time an Alexander Schleicher GmbH & Co ASW 27-18,							

registered VH-GXM, joined circuit to land at Waikerie, SA airfield at about 1,000ft above ground level (AGL) following a 2½ hour local soaring flight in weak conditions. At 15:41:30 the pilot turned left onto the base leg of the circuit at a height of about 560ft and at 15:52:02 turned onto final approach. Shortly afterwards at 15:42:10 the aircraft departed controlled flight at a height of about 350ft and commenced a spin to the left. The pilot immediately applied spin recovery inputs but the glider was too low to fully recover from the dive and it collided with terrain in a 15 degree nose down attitude at over 100 knots. The pilot suffered serious injuries and the glider was seriously damaged (refer Fig. 1). The Australian Transport Safety Bureau was notified shortly after, but declined to investigate. A GFA Field Investigation was undertaken the following day.

Pilot Information

At the time of the accident, the command pilot held a Glider Pilot Certificate endorsed for Independent Operations (Level 2), the Carriage of Private Passengers, and Self-launching Sailplanes. The pilot had accumulated a total of 282 glider flights for 601 hours, of which 7 flights for 13 hours were flown in the preceding 12 months. In the preceding 90 days, the pilot had flown on two occasions. The pilot successfully completed his annual flight review on 21 November 2015.

Aircraft information

The aircraft was maintained by GFA Approved Maintenance Organisation. The last mandatory annual inspection of the aircraft was carried out in November 2015 and the inspection record dated 20 November 2016 confirmed compliance with all current and recurring Airworthiness Directives. At the time of this inspection the aircraft had flown 44 flights for 134 hours. The aircraft had been given a Daily Inspection by the command pilot's partner in accordance with GFA operational procedures prior to the first flight of the day. No minor or major defects were recorded in the Maintenance Release. The aircraft was in the 18 metre wingspan configuration and was not carrying water ballast. There were no pilot trim weights fitted and the aircraft was being flown within the optimal weight & balance parameters.

Meteorology

The weather at the time of the accident was good visual meteorological conditions (VMC). The wind, as recorded from the aircraft logger, was from 168O (SSW) at 9 to 11 knots.

Flight data recorder

The glider carried two logging devices: a LX Nav LX9000 and a LX Nav Nano. The Nano was hard-wired into the panel such that on powering up the aircraft before the start of the flight it should automatically have commenced recording. This was the case on previous flights and it was reported by the owners that no change in the configuration was made prior to the accident. Unfortunately there is no flight record for the Nano for 27 February 2016. The reason for this is unknown – since the Nano is battery-backed data should be recorded even if there is an interruption in main power. The LX9000 recorded all but the last portion of the flight. The recording interval was set to four seconds. The LX9000 runs the Linux operating system - due to necessary caching when writing to flash (non-volatile) memory an interruption in power will result in the loss of the cached data. It appears this occurred when power to the unit was lost during the crash. At this time there is no available recording of the last few seconds of the flight. It should be noted that while GPS altitude and track cannot be relied upon with any accuracy, in this case the heights and track recorded are consistent with witness observations.

Medical information

The command pilot's last medical declaration was dated 30 April 2015, in which he declared that he was not suffering from any physical condition that would preclude him from operating a glider as pilot in command. The declaration also included an undertaking that in the event of him contracting any physical condition precluding him from operating a glider as pilot in command, that he would cease flying in that capacity while the condition makes it unsafe for him to do so. There was no reason to suspect the pilot was medically unfit for flight.

ANALYSIS

Pilot Statement

The pilot was unable to recall why the aircraft departed level flight and dropped the left wing into an incipient spin. He stated that he had adequate air speed of at least 70kts on base leg and no less than 65kts

in the final turn. The aircraft was in landing configuration during the final turn, with gear down, the airbrakes locked and the flaps set in zero. He also reported that earlier during circuit, he had used airbrake to let down a small amount and recalled closing and locking the airbrakes.

Witness Observations

Eye witnesses who observed the accident from the operations point on the airfield reported seeing the aircraft encounter loss of control during the turn onto final approach. The aircraft dropped the port wing from which the pilot recovered. Moments later the aircraft again dropped the port wing and spun into a vineyard short of the airfield boundary fence of runway 20.

Turbulence

A number of local members mentioned that turbulence was often encountered over the vineyard on final approach to runway 20. Other pilots operating during the day reported conditions were difficult with broken thermals and large sink areas evident. Turbulence is usually present in two forms; mechanical and thermal. Mechanical turbulence is a product of wind strength and variation in the terrain (trees, buildings, ridges, etc.). It can extend up to 500ft above terrain and is more pronounced at lower levels. Thermal turbulence is caused by variations in heating and thermals can be quite broken and turbulent below 1,000ft above ground. It is quite common for glider pilots to experience turbulence and gusts under 1,000ft which, combined with the glider's inertia, can lead to widely varying airspeed. Upward vertical gusts can abruptly increase the angle of attack beyond the stalling speed, irrespective of the initial airspeed, resulting in one or both wings stalling. A spin in such circumstances is not unusual if the pilot is in a turn. One witnesses observed just after the glider turned onto final approach "a bit of a wing up and down wobble and at this point the nose continued to drop and the aircraft continued to rotate to the left". It is possible the glider was subjected to turbulence and vertical gusts on final approach.

Flight

The flight logger trace was analysed using commercial flight analysis software, 'SeeYou' by Naviter. The flight commenced by aerotow from Waikerie runway 20 grass right (glider strip) at 13:10:08 local time. The flight was a local flight in poor soaring conditions followed by a circuit for landing at Waikerie aerodrome. The last recorded point is at 15:42:10 (2:32:02 after take-off) at a pressure altitude of 593 feet - correcting for take-off altitude (147 feet) and the effect of change in QNH (69 feet) during the flight this corresponds to a height of 377 feet AGL. At the same point the GPS altitude derived height AGL is 325 ft. The circuit commenced in a normal circuit joining area at a height of approximately 1,000 feet AGL and followed a relatively normal left hand circuit path. Figure 3 shows the detail for the latter part of the circuit together with distances from the runway and crash impact point. At the last recorded point the glider was not turning (or possibly in a shallow turn to the left) and was lined up approximately on the extended centreline of runway 20 grass right. This point is approximately 775m from the threshold of Runway 20 grass right and 325m laterally from the impact point. Ground speed can be determined from the data; however assumptions of wind strength must be made to derive airspeed. There was no loss of height in the last 20 seconds on base leg with a trend of decreasing ground speed. Ground speed reduced significantly in the last 8 seconds during the turn onto final; this can be accounted for, at least partially, by the increased headwind component. In the last 28 seconds the ground speed dropped from 69 knots to 51 knots . Based on observations the headwind component after the turn onto final was about 6 knots suggesting a final airspeed of about 57 knots. In the last 4 seconds height based on pressure altitude reduced by 85 feet (1,275 ft/min) and based on GPS altitude 112 feet (1,680 ft/min); this is a rate of descent much higher than any other time in the flight (or previous flights stored on the LX9000) and indicative of open airbrakes and/or the initial stage of a stall. The glider's air speed for the entire circuit was between 57 knots and a peak of 70 knots on late downwind. SeeYou estimates the wind from drift in thermals at various altitudes, which may not be accurate during the landing phase of a flight, particularly in the presence of wind gradient and gusts. Since SeeYou calculates the airspeed from the recorded ground speed, the calculated wind this can be subject to error. With the energy state of the glider at that last recorded point using pressure altitude the maximum impact speed would be 110 knots assuming 100% efficiency in the conversion of height into increased speed. Using GPS altitude the maximum impact speed is 104 knots. Since the efficiency would be much less than 100%, particularly in a high drag spin/stall situation, it is likely the impact speed would have been less than 110 knots.

Crash Site

The crash site was a vineyard. The vines had 2 wires between the posts with the lower being approximately 600mm and the upper being approximately 1,400mm above the ground. The wire gauge was 12 and of fencing strength. The vines are set up for machine picking and thus the top of the vines are in the order of 2,000mm high. The top soil is soft and the site had not been irrigated for 2 days. The crop was ready for picking and thus grapes were in abundance and the vines covered in foliage.

Debris Field.

The debris field was 50 metres by 20 metres with the 50 metre dimension being in line with the direction of flight. The debris was distributed short and long of the crash area. The canopy was shattered into small pieces and that debris was evident from a point about 10 metres into the crash site through to the final resting place of the wreckage. Carbon fibre remnants were evident throughout the debris field with the left winglet being found close to the first impact point and the right winglet being found at the end of the debris field.

Aircraft

Inspection of the wreckage at the accident site revealed the elevator and aileron control circuits were intact, despite the left Aileron and right outer wing panels being torn off. The elevator, tail plane and the wings were correctly rigged. It was noted that the dive brakes were unlocked but it is not clear whether they were unlocked prior to impact or due to damage to the airbrake control circuit during the crash. The rudder cables were still attached at both ends and, the rudder pedals, although damaged, appeared to be serviceable prior to impact. The rudder still moved freely. The undercarriage was down and the engine was retracted. In photos the doors are partly open as they are being held up by the propeller. This is due to the extensive damage to the fuselage and de bonding of sections of the structure. The engine is still in the retracted position. Flaps were set to zero.

Review of the damage to the forward fuselage suggests the aircraft impacted terrain at an angle of about 15 degrees nose down. The aircraft cut a swathe through 8 rows of vines and tore through the last five rows of wires and strainer posts before running out of energy. It was estimated that the aircraft struck the first row of vines at 100+ knots.

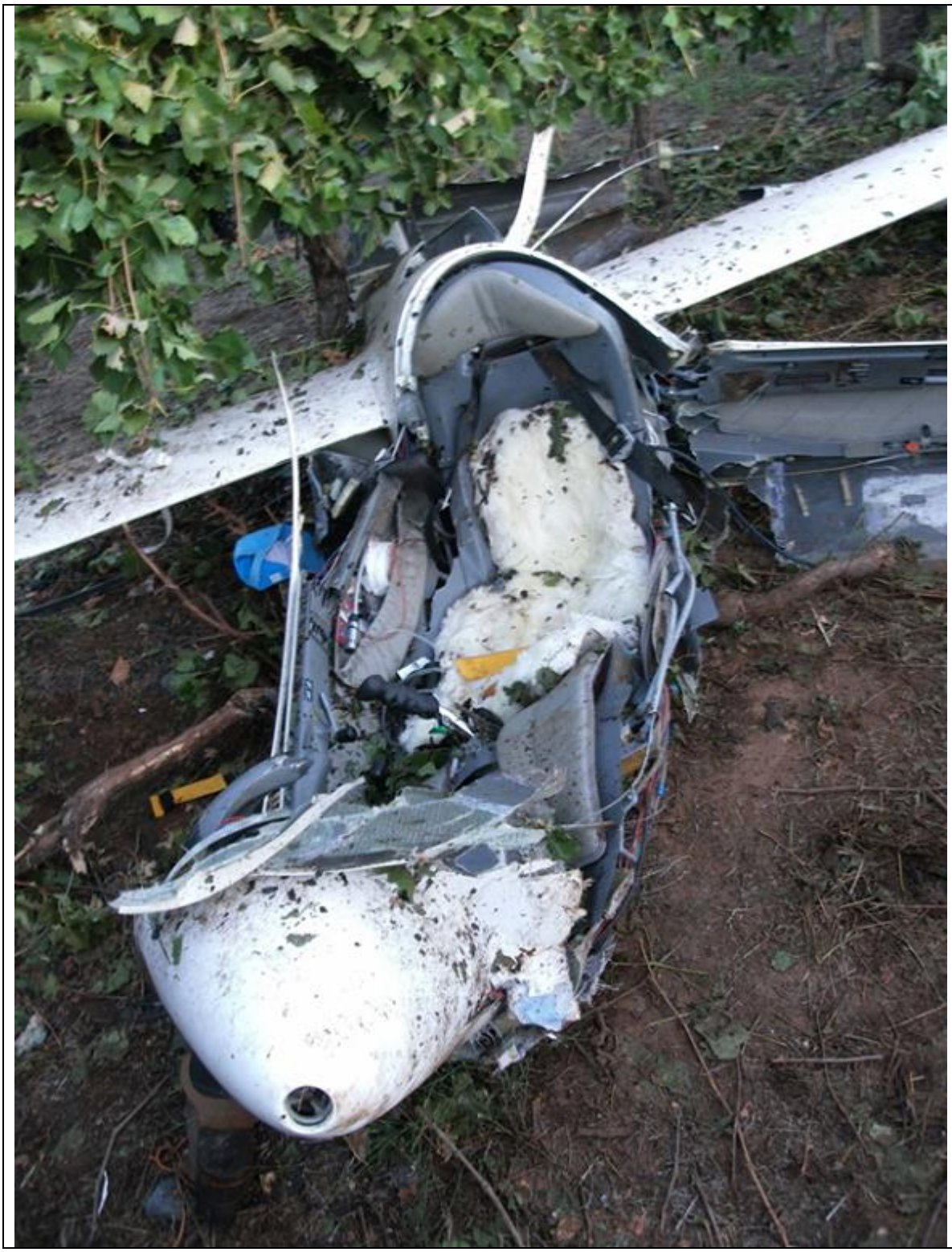
Survivability

The pilot suffered serious and life threatening in juries. These included an open multiple fracture of the left ankle resulting in free rotation of the foot, an open multiple fracture of the right ankle, an open fracture of the left humerus causing shortening and distending of the arm, and significant loss of blood. Extensive bruising, lacerations and abrasions were also evident. Emergency services attended, stabilised the pilot and transported him to hospital by helicopter. The pilot is expected to make a full recovery. Nylon woven into the carbon fibre weave prevented the fuselage from shattering on impact and contributed to the survivability of the pilot.

CONCLUSIONS

1. The command pilot was appropriately qualified for the flight but had flown little in the preceding 12 months.
2. The aircraft had a valid Maintenance Release and had been maintained in accordance with relevant requirements.
3. The aircraft appeared capable of normal operation up to the moment of impact.
4. Weather conditions were generally favourable but low-level turbulence may have contributed to a loss of lateral damping.
5. During a left-hand turn the glider inadvertently stalled and entered a spin at a height too low for the pilot to recover before ground impact.
6. No definite cause could be established for the spin but it was most likely due to vertical gusts from low-level turbulence coupled with mishandling of the controls.

Accident site, VH-GXM



Date	27-Feb-2016	Region	VSA	SOAR Report Nbr	S-0693

Level 1	Consequential Events	Level 2	Low Circuit	Level 3	Low Circuit
A/C Model 1	Zephyrus	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	70

The solo pilot misjudged the break-off point, entered the circuit low and flew a very low base and final approach. The pilot had progressed to solo quickly after a 30 year hiatus. Thirty years ago pilots flew with the altimeter set on QFE, and this pilot may have forgotten he had set QNH (primacy bias). The pilot noted that he was distracted by another glider ahead in the circuit, and believes he became fixated on returning to the launch point (goal fixation).

Date	27-Feb-2016	Region	SAGA	SOAR Report Nbr	S-0690
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing
A/C Model 1	Astir CS 77	A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	83

Following an unsuccessful attempt to soar post release the pilot joined circuit and completed his pre-landing 'checks', at which time he lowered the undercarriage. While on downwind the pilot encountered lift in which he turned and climbed away. The undercarriage was retracted. After soaring for a while the pilot elected to return to the airfield, and in order to expedite his descent, he lowered the undercarriage to increase the drag. Upon entering the circuit the pilot conducted his pre-landing check and raised the undercarriage. During final approach the pilot believes he heard the faint buzzing sound of the undercarriage warning over the general cacophony of airflow sounds and radio transmissions but ignored it as he was convinced he had checked the undercarriage was down and he did not want to be distracted from a safe landing. This type of occurrence is common in gliding because too many pilots use the pre-landing check list as an “action list”. However, merely moving the lever does not confirm the undercarriage is down and locked. The pre-landing check of the undercarriage should be a visual inspection that the lever is matched to the lowered position on the placard and locked in place. For further guidance, refer Operational Safety Bulletin (OSB) 01/14 - Circuit and Landing Advice.

Date	28-Feb-2016	Region	NSWGA	SOAR Report Nbr	S-0691
Level 1	Operational	Level 2	Fuel Related	Level 3	Starvation

A/C Model 1		Piper PA-25-235		A/C Model 2	Duo Discus		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	61
The tow plane engine failed at 200ft AGL. Both the tow plane and glider landed safely ahead on the available runway. Investigation revealed the main fuel supply became detached from fuel pump when the to alloy fitting snapped in half. The maintenance engineer found the fitting to the fuel pump was an incorrect part. The correct part has been fitted.							

Date	28-Feb-2016	Region	WAGA	SOAR Report Nbr	S-0692
Level 1	Operational	Level 2	Miscellaneous	Level 3	Other Miscellaneous
A/C Model 1		SZD-50-3 "Puchacz"		A/C Model 2	N/A
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	44
The pilot took a family member for a flight without holding a Private Passenger rating. The pilot was under the mistaken belief that the rating was a privilege of the 'C' Certificate. In actual fact, the Private Passenger Rating is an adjunct to the "C" Certificate and requires a logbook endorsement by the pilot's CFI. Pilots without Independent Operator privileges must also have the direct authorisation of the duty instructor on each passenger carrying flight or group of flights (refer MOSP2, paragraph 10.5).							

Date	1-Mar-2016	Region	NSWGA	SOAR Report Nbr	S-0694
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3	Aircraft preparation
A/C Model 1		DG-500 Elan Orion		A/C Model 2	N/A
Injury	Nil	Damage	Nil	Phase	Ground Ops	PIC Age	
The aircraft was being flown at a remote site and the persons involved in rigging the glider were unfamiliar with its assembly. Despite an independent check following the rigging, no one noticed the bolts that secure the main pins were not secured and the aircraft was released to service. The aircraft was 'daily inspected' and flown for a few days before the mis-rigging was finally detected. Incorrect rigging of the principle structure or flight control and trim systems can lead to in-flight emergencies, accidents, and even deaths. Anyone can make a mistake, which is why the GFA requires an independent duplicate check of the structure and control system by Daily Inspector following rigging. However, the check relies on the person completing it to be familiar with the aircraft, which appears not to have been the case in this instance. Similarly, unfamiliarity or inadequate attention to detail by subsequent Daily Inspectors also led to the error going undetected. Pilots and inspectors should ensure that rigging is directed by a person experienced on the type, in accordance with the flight manual and without interruption or distraction. The Daily Inspection must also be conducted by a person experienced on the type and without interruption or distraction. It is worth remembering that well-meaning, motivated, experienced people can make mistakes: fatigue, distraction, stress, complacency, and pressure to get the job done are some common factors that can lead to human errors. Pilots and inspectors can minimise the risks by adhering to sound risk management practices.							

Date	2-Mar-2016	Region	NSWGA	SOAR Report Nbr		S-0696	
Level 1	Operational	Level 2	Airframe	Level 3		Doors/Canopies	
A/C Model 1		G 102 Club Astir IIIb		A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Launch	PIC Age	22

The early solo pilot did not lock the canopy before flight and failed to identify it was unlocked during the pre-flight checks. During the launch and just as the tow combination reached the airfield boundary the canopy opened. The pilot released from tow and completed a safe landing in a paddock off the end of the airstrip. The canopy suffered damage during the landing. The CFI noted that the pilot has been battling motion sickness and had been conducting a series of short flights in order to adjust to the motions involved with flying. It is possible that the thought of another episode of motion sickness may have caused the pilot some stress that diminished his attention to the pre-flight checks. Motion sickness is not uncommon in pilots and is provoked in those who are susceptible by the peculiar and unfamiliar motion environment in flight. Medications are not always reliable and most (if not all) have side effects that can affect judgement and/or cause drowsiness. Pilots contemplating medication for motion sickness should consult their doctor. Fortunately, repeated exposure will usually desensitise most affected pilots.

Date	3-Mar-2016	Region	NSWGA	SOAR Report Nbr		S-0698	
Level 1	Airspace	Level 2	Airspace Infringement	Level 3		Airspace Infringement	
A/C Model 1		Mini-Nimbus C		A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	74

The experienced pilot was flying in a regional competition. Prior to the start gate opening, the pilot flew

towards some forming cumulus clouds nearby and inadvertently entered controlled airspace by 700 metres. The airfield is sited adjacent to a regional airport controlled traffic region. The pilot advised that, while he was aware of the airspace in the area, he failed to maintain adequate situational awareness. This incident highlights the importance of pilots maintaining adequate separation from airspace boundaries, both laterally and vertically.

Date	6-Mar-2016	Region	GQ	SOAR Report Nbr	S-0697
Level 1	Operational	Level 2	Crew and Cabin Safety	Level 3	Inter-crew communications
A/C Model 1	ASK-21	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	53

A student's misunderstanding of the training exercise led to inflight confusion between the flight crew resulting in a low circuit. The pilot under training was working towards obtaining his 'C' Certificate but had not flown much in the proceeding 90 days. The 'C' Certificate sequence requires an outlanding check, and both the student and instructor discussed outlanding options and had walked through a suitable outlanding paddock earlier in the day. It was intended that the student would have two flights, the first of which would involve emergency procedures as a prelude to conducting the outlanding check. The instructor had briefed the tow pilot to give a 'rudder waggle' on climb out, followed by a gentle turn to the left whereby the tow pilot would level off and then wave off the glider during the climb. During the pre take-off 'Options' check the instructor reminded the student that in an emergency, and provided they had sufficient height for a modified circuit, that a turn through 90 degrees towards the airfield was optimal as opposed to 270 degree away from it due to the height loss. He also mentioned that a 180 degree turn back was not an option due to the wind strength. The flight initially went according to the briefing and during the climb the student was given the opportunity to assess the proposed outlanding paddock from the air and to fix its location in relation to the main airfield. After release the student flew beyond the point of the modified circuit entry despite prompting from the instructor. The student turned towards the outlanding paddock, lowered the nose of the glider to increase airspeed and deployed airbrakes. The instructor, who was anticipating a modified circuit back to the airfield, was taken by surprise and eventually took over control. The instructor conducted a very low turn onto final approach for a downwind landing and, once established on approach, handed over to the student who made an uneventful landing. A post-flight debriefing revealed that the introduction of the paddock earlier in the day led the student to believe he was to conduct an outlanding into the selected paddock despite there being no brief on using it as an option for an emergency landing area. The instructor did not realise the student had misunderstood the briefing and delayed taking control in the belief that he could prompt the student onto a modified circuit back to the airfield. Unfortunately, the student thought the modified circuit was to be flown to the paddock and it was not until at low level that the instructor took control to land back on the airfield. The instructor noted the importance of ensuring the student fully understands the aim of the exercise (the instructor should probe to test what has and hasn't been understood), and of taking-over earlier when the student does not respond as expected.

Date	8-Mar-2016	Region	NSWGA	SOAR Report Nbr	S-0699
Level 1	Technical	Level 2	Systems	Level 3	Other Systems Issues
A/C Model 1	ASK-21	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	70

At about 900ft AGL on aerotow the tow rope released prematurely from the glider and without action by the pilots. Both the glider and tow plane carried out normal circuits and landing. Investigation revealed that the tow release in the glider had recently been serviced and was not returning to the fully closed (overcentre) position, thereby allowing the rings to pull free. It was determined that one of the lock nuts securing a bolt on an articulated arm that carries the front and rear release cables was overtightened, thereby restricting movement. The nut was 'backed off' slightly and correct operation of the release was achieved. This is not

the first report of this nature resulting from incorrect release maintenance (Refer Airworthiness Alert 2015-2). Glider inspectors must ensure that nuts attaching to pivot points are not over tightened so as to prevent the correct functioning of the part.

Date	12-Mar-2016	Region	GQ	SOAR Report Nbr	S-0705		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing		
A/C Model 1	Pegase 101A			A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	64

The pilot failed to lower the undercarriage after a marginal final glide into a headwind on a straight-in approach and landed on the bitumen runway. Post-accident analysis by the CFI determined that high workload and stress were contributing factors, together with task fixation. Pilots need to remain alert to the insidious nature of stress in a high workload situation and the need to avoid, as far as possible, becoming goal fixated to the detriment of situational awareness.

Date	12-Mar-2016	Region	GQ	SOAR Report Nbr	S-0700
Level 1	Operational	Level 2	Runway Events	Level 3	Runway incursion
A/C Model 1	Piper PA-25-235	A/C Model 2	Aeroprakt A22 Foxbat		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	53

During a period of high activity (Women of Aviation joy flights were being conducted by numerous powered aircraft) a glider launch was delayed due to landing traffic. A RA-Aus registered Foxbat aircraft was also holding on the taxiway awaiting the runway being cleared. The tow pilot advised the landing aircraft that he was holding and, once the aircraft had landed and was clear, the tow pilot gave a radio call advising he was entering the runway and lining up for a glider tow. Simultaneously, the Foxbat entered the runway and commenced take-off. The gliding ground crew observed the Foxbat enter the runaway and held-up the glider launch until the Foxbat had departed. RA-Aus operations staff subsequently spoke with the inexperienced Foxbat pilot to explain how parallel gliding operations operate at the site, and stressed the importance of vigilant see and avoid practices. Causal factors include a lack of situational awareness and unfamiliarity with gliding operations by the pilot of the Foxbat. The pilot was also overly reliant on radio for Situational Awareness despite numerous calls being made and verified as heard by witnesses.

Date	13-Mar-2016	Region	GQ	SOAR Report Nbr	S-0704
Level 1	Operational	Level 2	Aircraft Control	Level 3	Incorrect configuration
A/C Model 1	SZD-50-3 "Puchacz"	A/C Model 2	Piper PA25 235		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	64

During the initial stages of an aerotow launch the airbrakes deployed, which went unnoticed by the command pilot. Due to the poor climb rate the command pilot released from tow while there was still an opportunity to land straight ahead on the runway. Coincidental with the release, the command pilot noticed the airbrakes were unlocked just as the tow pilot gave a 'rudder waggle' signal. The air brakes were modulated for a safe landing. The command pilot advised that, because he did not get out of the glider after the previous flight, his pre take-off check list was abbreviated and he failed to ensure the airbrakes were locked. The command pilot also mentioned that he had experienced a poor climb rate on the previous flight

and thought the tow plane may have had engine problems, and this led to him believing the tow plane had an issue rather than the glider's airbrakes being deployed when acceleration was less than expected. This incident highlights the importance of conducting thorough pre-flight checks, and for pilots to physically determine the airbrakes are locked by cycling the control and ensuring the overcentre lock has engaged.

Date	15-Mar-2016	Region	VSA	SOAR Report Nbr	S-0706
Level 1	Operational	Level 2	Runway Events	Level 3	Runway incursion
A/C Model 1			A/C Model 2	N/A	
Injury	Nil	Damage	Nil	Phase	Ground Ops	PIC Age	42
At the end of the day's flying, the member drove his car across the non-active runway of a busy Regional aerodrome rather than around the airfield perimeter track. The member's vehicle was not equipped to maintain a listening watch on the CTAF, and his actions were contrary to directions in the aerodrome operations manual. The member was counselled by the Duty Instructor. Runway incursions are a serious safety concern and have in the past resulted in collisions between aircraft and vehicles. Members should not drive a vehicle on any portion of the aerodrome movement areas (runways/taxiways) without authorisation.					

Date	16-Mar-2016	Region	WAGA	SOAR Report Nbr	S-0701
Level 1	Operational	Level 2	Ground Operations	Level 3	Taxiing collision/near collision
A/C Model 1	Cirrus		A/C Model 2	N/A	
Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	
While towing out to the launch point, the pilot became distracted and turned onto the perimeter road instead of the runway. The wheel of the 'wing walker' collided with a removable runway light that had been placed by the road, causing the glider to come off the tail dolly. The glider then swung around and the starboard wing hit a tree. Situational awareness is critical in avoiding taxiing collisions, which usually occur due to inattention or a lack of vigilance. To reduce the chances of a taxiing collision, always remain alert and maintain a scanning technique. Remember, collision avoidance, both in the air and on the ground, is one of the most basic responsibilities of a pilot.					

Date	20-Mar-2016	Region	GQ	SOAR Report Nbr	S-0703
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3	Other Powerplant/Propulsion Issues
A/C Model 1	ASK-21		A/C Model 2	Piper PA25 235	
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	59
During an aerotow launch the tow plane experienced a reduction in RPM that resulted in a lower than normal climb rate. The glider pilot, perceiving something was wrong with the tow plane, released from tow at around 800ft AGL and completed a safe landing. The tow plane was retired from operations pending an inspection into the loss of power. Subsequent investigation revealed a heat affected spark plug lead was causing a loss of power under load. The lead was replaced and the tow plane returned to service.					

Date	20-Mar-2016	Region	SAGA	SOAR Report Nbr	S-0702
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	ASK-21		A/C Model 2	Socata TB10	
Injury	Nil	Damage	Nil	Phase	Thermalling	PIC Age	18
While thermalling at around 2,500 ft near the home airfield, the command pilot of an ASK21 noticed a powered aircraft converging on his position and he altered course to avoid a collision. Shortly thereafter the					

command pilot of the powered aircraft saw the glider and also altered course. Both aircraft were heading towards each other and each turned right to avoid a collision, passing within about 200 metres of each other The command pilot in the glider was monitoring the local CTAF and did not hear any calls from the powered aircraft. This incident highlights the importance of communication and the limitations of unalerted see-and-avoid principles, which rely entirely on the pilot's ability to sight other aircraft. Broadcasting on the CTAF is known as radio-alerted see-and-avoid, and assists by supporting a pilot's visual lookout for traffic. An alerted traffic search is more likely to be successful as knowing where to look greatly increases the chances of sighting traffic.

Date	25-Mar-2016	Region	WAGA	SOAR Report Nbr		S-0718	
Level 1	Airspace	Level 2	Aircraft Separation	Level 3		Near collision	
A/C Model 1		SZD-50-3 "Puchacz"		A/C Model 2		Grob G-115C2	
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	60

The pilot of the powered aircraft made his downwind call, followed shortly after by the glider pilot calling on downwind. The glider pilot had not sighted the powered aircraft and made a call upon turning onto base leg to aid situational awareness. The pilot of the powered aircraft did not acknowledge the glider pilot's call. Shortly after, the glider pilot noticed the powered aircraft on final approach and converging on him and made a further radio call. The pilot of the powered aircraft made a climbing turn to the right and announced that he was departing the area. The gliding club CFI contacted the Deputy CFI of the power flying school who advised that the student pilot did not submit a safety report following his flight as he did not think there was a risk of collision nor evasive action needed to be taken to avoid the glider. The flying school's safety team only became aware of the incident following an email from the ATSB requesting feedback. The student pilot reported that when he arrived overhead of the airfield he was made aware of glider operations via a radio call from an unknown source. The student advised that before descending into the circuit he had identified a glider and tug on the dead side and continued to join the circuit. The student joined crosswind and his intention was to carry out a runway inspection. Just prior to turning base the student heard a glider joining downwind but did not sight the glider on its base leg until he was established on final. The student pilot was aware of the right of way rules in relation to gliders and adjusted his track via a right hand turn to position to the dead side of the runway and carried out a go around and vacated the area. The student pilot reported that all appropriate radio calls were made whilst in the circuit. The Deputy CFI confirmed the student had received retraining and is now satisfied the student is safe to operate solo again. This incident highlights the importance of radio for alerted see-and-avoid.

Date	25-Mar-2016	Region	GQ	SOAR Report Nbr		S-0720	
Level 1	Operational	Level 2	Airframe	Level 3		Landing gear/Indication	
A/C Model 1		TST-10M		A/C Model 2		N/A	
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	68

Upon touchdown the powered sailplane decelerated rapidly and pitched forward onto its nose. When the pilot exited the aircraft he noted the tyre was fully deflated and some other minor airframe damage. The powered sailplane had not been flown for several weeks and during the Daily Inspection the pilot found the tyre partially deflated. The tyre was fully inflated and the aircraft was towed to the flight line. About an hour and a half later the pilot conducted an airframe inspection prior to self-launch and found the tyre was still inflated. Unknown to the pilot the tyre had a slow leak and had deflated during the three-hour flight. There are three reasons for inflation pressure loss in a tube-type tire: 1. a hole in the tube; 2. A damaged valve stem; or 3. A non-functional valve core. Finding an inflation leak is usually simple. The first step is to check the valve and tighten or replace the core if it is defective. If the valve is not leaking, demount the tire, remove the tube, and locate the leak (by immersion in water if necessary). Repair or replace the tube as necessary.

Date	26-Mar-2016	Region	VSA	SOAR Report Nbr	S-0752
Level 1	Technical	Level 2	Systems	Level 3	Other Systems Issues
A/C Model 1	PW-5 "Smyk"	A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	68

The release handle came apart when the pilot attempted to release the towing cable after being retrieved to the launch point by a vehicle. The release cable is threaded through the short metal tube and a swaged bead on the cable is retained by a split washer held in place in turn by the plastic handle being screwed into the metal tube. Investigation revealed the handle had unscrewed over time to the point where it was able to fall apart. The handle was reattached using a chemical locking compound. It was noted the pilot would not have been able to activate the release had this occurred in flight.

Date	28-Mar-2016	Region	VSA	SOAR Report Nbr	S-0713
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	LS 3-a	A/C Model 2	Janus		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	72

ATSB Investigation. On 28 March 2016, at about 1306 Eastern Daylight-saving Time (EDT), a Schemp-Hirth Janus glider launched from Porepunkah Airfield, Victoria, for a pleasure flight. On board were two pilots, the pilot seated in the rear seat was the pilot in command for the flight. The glider tracked over Simmons Gap, to a ridge about 3 km north-west of Mount Beauty Airport (Figure 1). The pilots could hear and see other gliders being towed onto the ridge. They joined a thermal1 and climbed in tight orbits ('thermalling') in a clockwise direction.

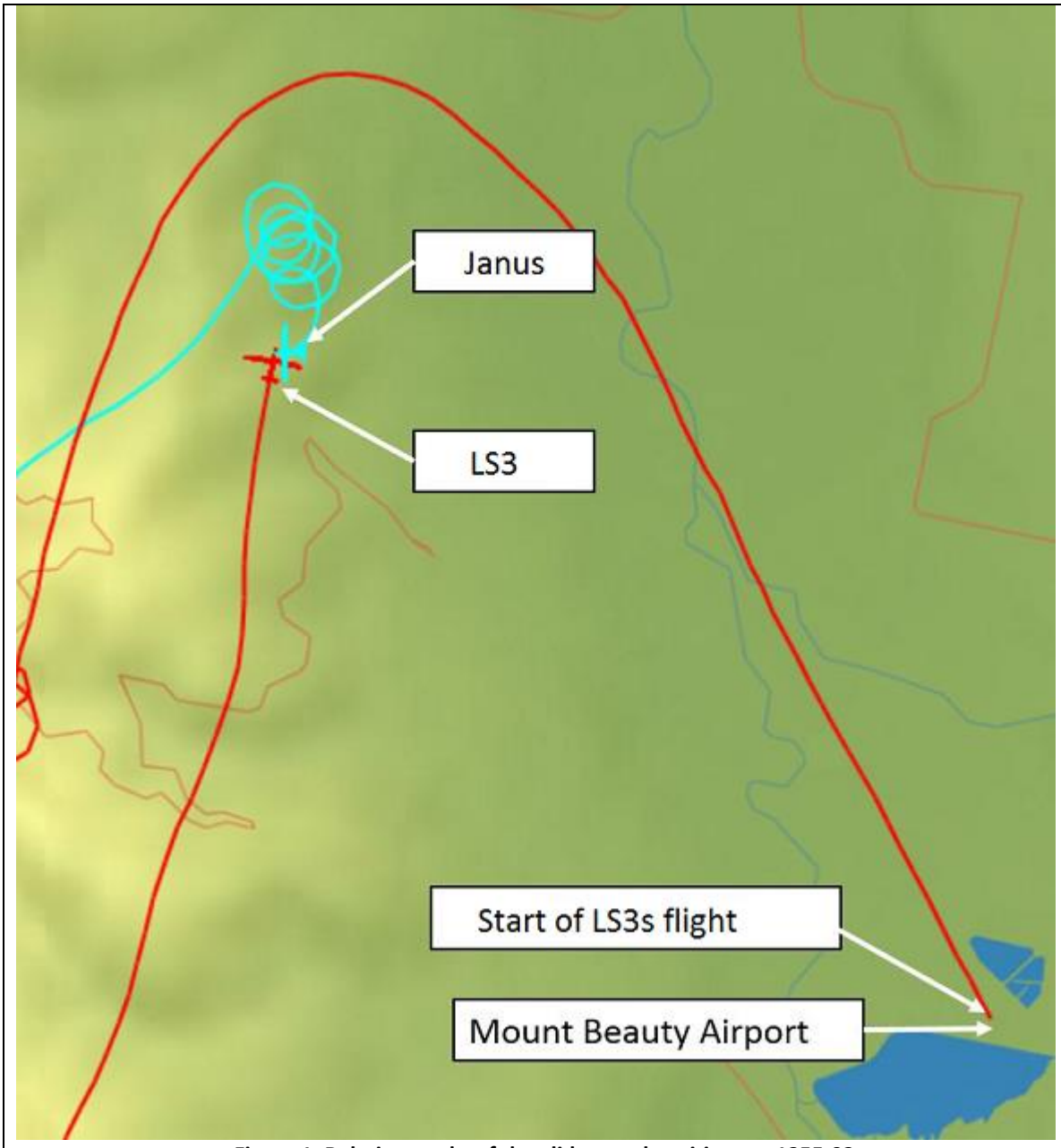


Figure 1: Relative tracks of the gliders and positions at 1355:02

At about 1335, the pilot of a Rolladen-Schneider LS3-A glider, launched from Mount Beauty Airport, Victoria, for a pleasure flight. At about 1355, the glider was 3 to 4 km north-west of the airfield and descending through about 4,000 ft, when the pilot heard an alarm sounding, but did not identify it as issuing from the FLARM collision avoidance system (see FLARM below) fitted to the glider. The glider was tracking to the north, and the pilot reported that they had been keeping a lookout for other gliders but were not aware of any in the vicinity at the time. The pilot tried to identify the source of the alarm inside the cockpit, which diverted their attention from looking outside. As the pilot became stressed by the noise, particularly as it became 'quite shrill', the cockpit fogged up, further reducing the pilot's ability to see outside. At that time, the Janus was thermalling and in a right bank at about 40–45°, and had completed four orbits. The front seat pilot sighted a glider approaching from the opposite direction at about the same altitude. They assumed that

the glider would join the thermal behind them, in the same direction, and on the opposite side of the orbit, in accordance with normal procedures. The front seat pilot asked the rear seat pilot whether they could see the glider, who responded 'no'. The FLARM fitted to their glider indicated that there was another glider in close proximity and the rear seat pilot looked outside to see where it was. The front seat pilot assessed that the approaching glider was not going to manoeuvre to join the thermal or to avoid a collision, so took control of the glider and pushed the stick forwards to descend rapidly. The LS3 glider passed overhead. The pilot of the LS3 sighted a glider pass below, and estimated there was less than 100 ft vertical separation. Both gliders continued their flight for about another hour after which the Janus landed at Porepunkah and the LS3 landed at Mount Beauty without further incident.

Flight data

According to the flight data recorded by the gliders' flight logger, at 1354:58, the LS3 was at 3,606 ft and the Janus at 3,523 ft. Four seconds later as the gliders' paths crossed, the LS3 was at 3,605 ft and the Janus had descended to 3,458 ft.

FLARM

FLARM is a collision avoidance system that shows other similarly equipped aircraft in the vicinity. The display shows the approximate direction of detected traffic and whether it is above, below or at about the same level (Figure 2).

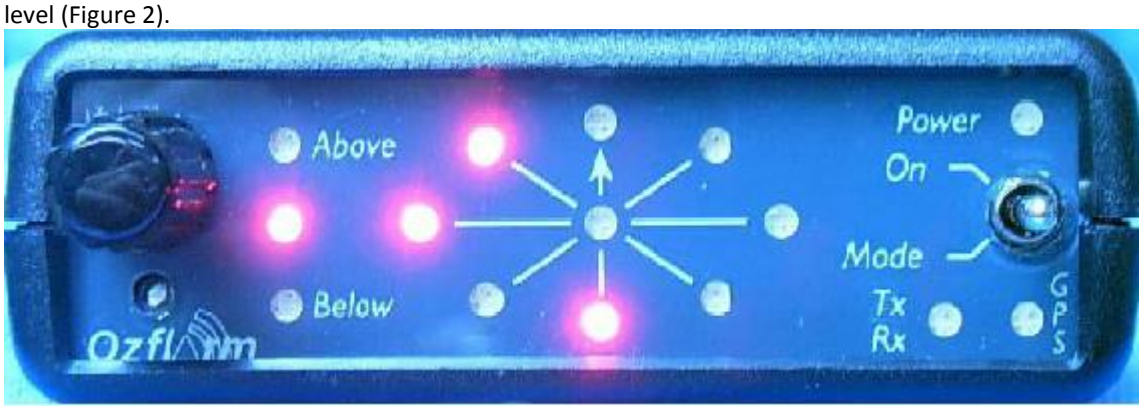


Figure 2: OZflarm display

According to the FLARM website, each FLARM device determines its position and altitude with a highly sensitive state of the art GPS receiver. Based on speed, acceleration, heading, track, turn radius, wind, altitude, vertical speed, configured aircraft type, and other parameters, a very precise projected flight path can be calculated. The flight path is encoded and sent over an encrypted radio channel to all nearby aircraft at least once per second. At the same time, the FLARM device receives the same encoded flight path from all surrounding aircraft. Using a combination of own and received flight paths, an intelligent motion prediction algorithm calculates a collision risk for each received aircraft based on an integrated risk model. The FLARM device communicates this, together with the direction and altitude difference to the intruding aircraft, to the connected FLARM display. The pilots are then given visual and aural warnings and can take resolutive action.

Pilot comments

The pilot of the LS3 reported that they had flown gliders fitted with FLARM for 7–8 years and had never heard it make a noise before. This may have been because they had never been close enough to another glider to trigger the alarm before. They were briefed and had a briefing note circulated by the gliding club when they were first installed. The pilot did not think there were any other gliders in the vicinity, and did not associate the alarm with FLARM. The pilot had a VHF radio with the local area frequency selected, but did not make or hear any broadcasts regarding the Janus.

The pilot in the front seat of the Janus reported that there were some radio broadcasts at the time, mainly from the glider tug pilots in the circuit at Mount Beauty and Porepunkah. They had not made any broadcasts, and had not heard any from the LS3. The pilot in the rear seat of the Janus commented that the head and shoulders of the pilot in the front seat obscured their vision immediately ahead at the same level. When the FLARM sounded, rather than looking at the display, they looked outside for the other glider.

Safety message

The glider pilots reported that see and avoid was the usual means of maintaining separation from other gliders. It was not uncommon to be in close proximity to other gliders, particularly when thermalling. They did not normally broadcast their position or intentions when thermalling, and expected other glider pilots to adhere to standard procedures. Avoidance systems such as FLARM can enhace safety in non-controlled airspace by detecting conflicting aircraft also fitted with a compatible system. These assist in alerting pilots to the presence of other aircraft and directing them where to look. The ATSB report Limitations of the See-and-Avoid Principle outlines the major factors that limit the effectiveness of un-alerted see-and-avoid. Insufficient communication between pilots operating in the same area is the most common cause of safety incidents near non-controlled aerodromes. It is essential that when equipment is installed in an aircraft, pilots have an understanding of its operation and are familiar with its characteristics. Refer also to GFA publications:

1. Operational Safety Bulletin (OSB) 02/12 - Lookout for Glider Pilots
2. Operational Safety Bulletin (OSB) 02 14 - See and Avoid for Glider Pilots.

Date	28-Mar-2016	Region	VSA	SOAR Report Nbr	S-0719		
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision		
A/C Model 1	ASK-21	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	74

Reciprocal operations are conducted at this Regional airfield on a common runway due to rising terrain on the South end. Circuits and final approaches are from the North towards the take off point and over the winch. During the pilot's second flight of the morning, the pilot intended to land longer than on his first flight so as to stop at least 100 meters short of the launch point *"to avoid a vehicle retrieve and resultant delay to a waiting departure".* The pilot misjudged his aiming point and landed longer than intended. When he went to use the wheel brake to slow down he found it ineffective and the glider overshot the intended stopping point and came to rest less than one metre from a parked car. It has been noted over many years that a significant percentage of reported accidents and incidents indicate that Clubs and/or pilots have modified their normal operating procedures, or abandoned accepted best practice, for no reason other than convenience. Good operating procedures and flying standards are developed over time and built on the experience of many pilots and many mistakes. There is no doubt that convenience can be a seductive force but pilots (and clubs) must resist the temptation and recognise that even slight departures from standard accepted good practice can have severe consequences.

Date	30-Mar-2016	Region	GQ	SOAR Report Nbr	S-0729		
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3	Propeller malfunction		
A/C Model 1	ASK-21Mi	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	64

During an airborne re-start the propeller was observed not to rotate in the airflow before the ignition was engaged. The engine was not started. Upon landing the crew observed the propeller stop would not operate from cockpit when the propeller blade was against it. The hinge bolt of the propeller stop was found to be excessively stiff, so the bolt was backed off 1/16 of a turn and the assembly lubricated. Pilots flying this type of aircraft should ensure the prop is able to move freely prior to airborne engine start.

Date	31-Mar-2016	Region	VSA	SOAR Report Nbr	S-0711		
Level 1	Operational	Level 2	Terrain Collisions	Level 3	Wirestrike		
A/C Model 1	Discus CS	A/C Model 2	N/A				
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	49

FACTUAL INFORMATION

On 31 March 2016, at 1331 Eastern Standard Time, a Discus CS glider collided with a winch wire being wound in following the successful launch of an ASK-21 glider at Mt Beauty Airfield, Vic. The left wing of the Discus impacted the cable at an altitude of approximately 280 feet AGL. The impact caused the Discus to rotate about 90 degrees to the left and pitch to about a 45 degrees nose down attitude. The cable tore a small hole in the leading edge of the wing and then slid over the left wing tip and clear of the glider.

About 3 seconds after the cable strike and at a height of about 130 ft AGL the pilot recovered to a normal flying attitude. Several seconds later the pilot successfully landed in a paddock to the east of the airfield. The glider ground looped at the end of the landing roll, possibly after the wingtip contacted some of the high thistles in the paddock. The pilot was not injured and damage to the glider was minimal. The Australian Transport Safety Bureau was notified shortly after, but declined to investigate.

Discus Pilot Information

At the time of the accident, the Discus pilot held a GPC and GFA Air Experience Instructor authorisation with about 110 hours in 200 flights, of which 25 hours and 25 flights were in the accident aircraft. He obtained his Instructor Rating in the mid-1990s and maintained his rating up to the time of the accident. The pilot's last Annual Flight Review was successfully completed on 6 December 2015. The pilot had flown on four occasions at this site in 2005, and had flown one mutual and one solo flight prior to the accident flight.

ASK 21 Command Pilot Information

The ASK 21 command pilot was a member of the local gliding club, and held a GFA Level 1 Instructor authorisation that had been reissued on 14 December 2015 (The command pilot previously held a GFA Level 3 Instructor authorisation for 14 years that lapsed when he ceased instructing in July 2012). The command pilot had about 560 hours gliding and over 480 hours flying GA powered aircraft. His last Annual Flight Review was successfully completed on 6 September 2015.

ASK 21 Second Pilot Information

The second pilot in the ASK 21 was a member of the R.A.A.F. Richmond Gliding Club who had been flying gliders and tow planes for about five years. He accumulated approximately 2000 flight hours with the RAAF, and has 200 hours hang gliding. At the time of the incident he was not endorsed for winch launching and was undertaking a mountain experience flight. He was not on the controls during the launch.

Launch Crew

The launch crew comprised the winch operator and a wing runner.

Winch Operator

The winch operator who launched the ASK21 was a longstanding club member, a glider pilot and an experienced winch operator. On the day of the incident the winch operator was not known to be suffering from any incapacity or illness that would adversely affect their ability to carry out his winch operation duties in accordance with GFA and local club requirements.

Wing Runner

The wing runner is responsible for connecting the launch cable to the glider, assisting the pilots clear the airspace for launch, and communicating the launch commands to the winch operator. The person undertaking this role had joined the local gliding club six months earlier but was described as an experienced wing runner. This person only has the use of one eye but was assessed by a Medical Practitioner to the Austroads Standards as medically fit.

Aircraft information

The Discus was maintained by authorised GFA Airworthiness Inspectors of the Melbourne Gliding Club and held a current Maintenance Release. The aircraft had been given a Daily Inspection by the command pilot in accordance with GFA operational procedures prior to the first flight of the day. The ASK 21 was maintained by authorised GFA Airworthiness Inspectors of the Mt Beauty Gliding Club and held a current Maintenance Release. The aircraft had been given a Daily Inspection in accordance with GFA operational procedures prior to the first flight of the day.

Meteorology

The weather at the time of the accident was good visual meteorological conditions (VMC). The wind was light from 346O (NNW) at 2 knots. Weather was not considered to be a factor.

Flight data recorder

Both gliders carried a GPS based logging systems capable of logging the flight path and altitude, and both units were set to log data points every two seconds. The log files were viewed using "SeeYou" flight analysis software to reconstruct the flight of both the Discus and ASK 21. While the GPS altitude and track data cannot normally be relied upon with absolute accuracy due to horizontal and vertical resolution errors and the interval time between data recording points, in this case the information matches the witness statements taken.

Medical information

The Discus pilot held a current GFA Medical Practitioners Certificate of Fitness issued by his doctor on 6 July 2015. The ASK 21 command pilot held a current GFA Medical Practitioners Certificate of Fitness issued by his doctor on 7 September 2015. Both Medical Practitioners certified that their respective patients had been examined and to the best of their knowledge stated each pilot was not suffering from a medical condition which would preclude him from flying a sailplane as pilot in command. On the day of the incident neither pilot was known to be suffering from any incapacity or illness. The second pilot in the ASK 21 had self-declared that he was not suffering from any physical condition that would preclude him from operating a sailplane as Pilot in Command. The declaration also included an undertaking that in the event of him contracting any physical condition precluding him from operating a sailplane as Pilot In Command, that he would cease flying in that capacity while the condition makes it unsafe for him to do so. On the day of the incident he was not known to be suffering from any incapacity or illness.

AIFIELD INFORMATION

This airfield is owned by the Alpine Shire and is managed by The Mount Beauty Airport Management Association Ltd. It is situated approximately one kilometre north of the Mount Beauty Township and immediately north of the town's regulating pondage (Elevation 1100ft). It has a single bitumen sealed runway (14/32) of 900 metres length and slopes upwards to the South. The threshold of runway 32 is permanently displaced by 220m. It is an ALA with CTAF 126.0 for communications. ERSA recommends pilots do not take-off to the South as runway 14 slopes upward into rising terrain (the hill at the end of Runway 14 is 1000? above aerodrome elevation) and possible downdrafts. As a consequence, winch launch operations are conducted only from behind the displaced threshold on runway 32, and all landings are made from the North onto runway 14. This arrangement was approved by GFA based on limited gliding operations.

Gliding Operations

On the day of the accident flight combined aerotow and winch operations were being conducted. The aerotow operation was being managed by a visiting club. And winch operations were being managed by the local gliding club. While the two operations were co-ordinating, there was no single person managing gliding operations at the site.

Glider Launch Point

The glider winch launch point is located on the Eastern side of runway 32. Glider aerotowing operations are conducted parallel to and on the Western side of the winch launching operation.

A covered structure provides shelter for club members and visitors. Club timekeeping duties are also conducted from here and VHF radio calls are monitored. A handheld CB radio is also stored at this shelter when not in use.

Winch Location

The gliding operation uses the full 900 metre runway length, and the winch is located in a paddock

approximately 600 metres beyond the runway. This allows the club to lay out 1500 metres of cable. The winch is in poor condition externally and the rotating beacon used to signify the winch is operating is not readily visible from the air or ground.

Radio Communication

The airfield lies under Class G airspace and is an uncontrolled, non-towered aerodrome. There is no positive control of aircraft movements in the circuit from the ground, and no obligation to repeat back any communications. While the airfield is marked on navigational charts, it does not have a discrete common traffic advisory frequency (CTAF) allocated. Consequently, pilots are required to monitor the MULTICOM (126.7 MHz) when in the vicinity. Gliding Club pilots broadcast their circuit intentions on the MULTICOM frequency to improve situational awareness. Similarly, gliders about to launch normally make broadcasts of their launch intentions on the MULTICOM frequency, and wing runner at the Launch point broadcasts launch control instructions to the winch on 27 MHz HF Citizens Band (CB) radio. The winch is equipped with both VHF and CB radios. The CB radio is used to receive operational calls from the wing runner at the glider launch point, and the VHF radio is used to monitor the MULTICOM frequency as an aid to situational awareness. The winch is not fitted with a headset for the Operator.

ANALYSIS

Timeline and Description of Accident Flights:

The Discus CS commenced its take off roll at 13:11 for a local soaring flight. The glider was launched by aerotow behind a Piper Pawnee Tow Plane and the glider pilot released at a height of 2,900 ft. AGL. The pilot reported that a short time after release they noticed the electronic instruments behaving erratically (false Flarm warnings and incorrect audio/electric vario readings) and that turning the power off and on again did not remedy the problem. Although the aircraft was fitted with two batteries used interchangeably through a 3-position selector switch that can select either battery to power the circuit or in the centre position to completely isolate the load from the batteries, the pilot did not cycle between the batteries. At 13:19 the Discus CS pilot decided to break off the flight to address the electrical problems on the ground and flew back to the circuit joining area while slowly losing height. On approaching the airfield from the east the pilot recalled *"seeing gliders waiting for aerotow and a glider on the ground in the winch area"*, so at 13:29 the pilot gave a radio call upon entering downwind for runway 14. The glider pilot stated *"As I flew my*

downwind leg and conducted my FUST checks, I saw a glider on the final stage of winch launch near release height. I had not heard any launch calls. As a precaution, I intended to fly a longer downwind leg to allow time for the wire to descend." Subsequent investigation revealed that the Discus CS pilot had observed a tow plane descending to the circuit after launching another glider. Meanwhile at the glider launch point, the crew of the ASK 21 was preparing for a winch launch. The ASK 21 command pilot stated: *"As part of the "O" Outside checks we scanned the circuit and identified one aircraft, a tug on final. Once the tug had landed, I spoke to the tug on VHF radio Frequency 126.00 MHz. We requested permission to launch once he was clear of the runway. He gave an affirmative."* Immediately prior to the launch of the ASK 21 an all stations broadcast was made on the CTAF of the intent to winch launch on RW 32. Traffic was advised to be aware of a winch cable up to 2000ft. CB radio communication was then established between the wing runner and the winch operator, and launch commands were given over the CB radio. The Wing runner initiated the launch of the ASK 21 at 13:30:17 after making a *"...visual check of the landing circuit area*". The wing runner stated *"at no stage did I hear a radio call from a glider intending to join, or currently on, the circuit."* Factors that may have contributed to the inability of the wing runner to sight the Discus CS in circuit include a background of cumulus clouds, the small profile of the glider in straight and level flight, the glider being at the furthermost point of the downwind leg, and the glider's radio being inoperable due to failure of the electrical system. The winch operator did not observe the Discus CS in the circuit when the commands for launch were initiated, as the glider was by now established on base leg approximately 800 metres behind the winch and out of the operator's line of sight. It is noted that there was no requirement for the winch operator to clear the airspace behind the winch prior to initiating a launch. Once the launch of the ASK 21 had begun it was not possible for the crew to have sighted the other glider in circuit due to the nose high attitude causing significant blind arcs in the direction of the Discus CS. While the Discus CS pilot would have had the opportunity to sight the ASK 21 during the initial stages of the launch, such was dependent on the Discus pilot actually looking in the right direction at the right time. A member of the visiting Gliding Club recalled: *"Just after the winch launch I noticed VCS on late downwind for runway 141. There was a radio positioned near where I was sitting and as [the Discus CS] turned base I did not hear any radio communication from [the pilot]. I tracked [the Discus CS] along the base leg and at this point the aircraft on winch was almost at the peak. I saw them release around the same time as [the Discus CS] turned onto final for runway 14. I called out to [another member] who was about to launch a glider on aerotow that there was a glider on final."* 13:30:41 the Discus CS was turned onto final approach at a height of about 580 ft. AGL just as the ASK 21, established in the full climb, was passing through 900 ft. AGL. The pilot of the Discus CS did not sight the ASK 21, possibly because the pilot was concentrating on the aiming point and not looking for threats well above the glider. At 13:31:03 the ASK21 had reached the top of its climb at 1,374ft AGL and the cable back-released. The pilot flying turned to the right and tracked North. Approximately 6 seconds later and at a height of about 280 ft. AGL, the Discus CS struck the descending winch wire with its left wing, about mid span. The Discus CS pilot stated: *"While on late final just short of the threshold and at a height of approx. 200 ft., my glider abruptly pivoted 90 degrees to the left and I found myself in a very steep nose-down attitude. I thought I must have stalled/spun or had a rudder malfunction, but it didn't make sense to me. I was able to regain controlled flight and was fortunately able to land straight ahead (i.e. 90 degrees to the runway) in a small paddock full of tall thistles. I adjusted airbrakes to safely clear a star picket fence, touched down firmly and, after a short straight run, slewed sideways and came to a stop short of the next fence. I was uninjured and the glider was intact".*

Aircraft

The Discus CS sustained only slight damage in the accident. While the winch cable had taken a notch out of the port wing leading edge about mid span, subsequent inspection of the wing/tailplane fittings revealed no other damage. Mounted in the cockpit facing forward was a GoPro camera that was active for the entire flight. An onsite viewing of the recorded video confirmed the pilot made two downwind radio calls but no incoming calls were heard. Unfortunately the camera was lost during recovery of the aircraft so the video is no longer available. It was later determined that low battery voltage was the reason why the instrument readings in the Discus CS were erratic and why the radio failed to transmit and receive. The batteries were standard 12V 7.2AH sealed lead acid batteries. When tested both batteries were found to have significantly

reduced capacity, a consequence of either poor maintenance or age. While the glider radio has a battery test mode, the pilot did not utilise this feature.

Airspace Clear for Launch Check

Rules of the Air requirements for right of way favouring the landing glider were clearly understood by duty crew on the day. It is inconceivable that the 'experienced' wing runner would have authorised the winch launch to proceed if he had been aware of potential conflict with a landing glider. His statement affirmed he did not see the approaching glider. It follows that the wing runner did not see the approaching glider on base leg and final approach. The Gliding Federation of Australia (GFA) Operations Manual specifies launch command responsibility lies with the Pilot-In-Command of the launching glider in keeping with the principle of primacy of Pilot-In-Command authority. The GFA Manual of Standard Procedures (MOSP), Section 16, regarding winch launching, (italics added for emphasis) states:

"16.1.7 Ground Signals for Winch and Auto-tow

These signals are defined as follows:

"Take up slack on [Type of Glider]" (self-explanatory).

"All out, all out" (in some regions "full power") - this signal means all the slack is out of the wire and the launch may proceed.

"Stop, Stop, Stop" (self-explanatory).

Hand signals from the pilot to the wingtip holder are not recommended on the basis that they distract the pilot from keeping control of the glider when things can be happening very quickly, and they also detract from the ability to release the cable quickly should the need arise.

The following is the standard procedure to be used:

1. *After attaching the cable and ensuring all clear above and behind, the pilot signifies ready for take-off by giving a thumb-up signal with the left hand.* This is confirmed verbally by the expression "pilot ready for take-off".
2. Crew member (who must be adequately trained or under supervision) raises the wingtip and *gives the 'take-up-slack' signal if satisfied that it is still clear.* This signal should be given verbally as well as visually to ensure that all persons around the launch point are in no doubt that a launch is taking place. The pilot's left hand is kept as close to release as possible.
3. When the cable has tightened sufficiently, the wingtip holder gives the 'all-out' (full power) signal, again verbally as well as visually. The pilot will have no input to this signal.
4. *The 'stop' signal may be given by anyone who believes that the launch should not take place for any reason. It may be given by the pilot, the wingtip holder or by a bystander who sees something which nobody else has noticed. No person should hesitate to give a stop signal if in any doubt about the safety of the operation.* When a stop signal is given, the pilot must release the cable immediately."Sub-para 1 above clearly requires the assistance of a third party, normally the wing runner, to connect the winch rope or cable and to assist the command pilot in confirming the airspace is clear for launch.

Sub-paras 2 and 4 above clearly give stop launch or veto powers to crew other than the Pilot-In-Command. GFA has also published an Operations Safety Bulletin No 2/06 (Revision 1 issued 11 April 2014) 'Airspace Clear for Launch'. A relevant extract states:

"Airspace Clear For Launch

Every glider pilot is familiar with the wingtip runner's, or cable hook-up person's, advice to pilots "all clear above and behind" prior to the commencement of launches; however, the true intention of this advice is not always fully understood. The 'above and behind' advice is intended to inform the pilot of any activity in that airspace that is not readily (or possibly) visible to the pilot from his/her position when seated in the glider ready for launch. It does not, in its standard form, advise the pilot of all local airspace activity. Nevertheless, there are many occasions when launch assistants do provide more extensive advice to pilots, and at many clubs it is standard practice to do so in order to enhance operational safety. For example, clubs operating at sites where:

- parachute operations are conducted;

- contra-operations are conducted, such as taking off downhill and landing uphill,
- crosswind operations are conducted across the operational runway, or
- a glider will occasionally fly a circuit on the opposite side to the standard circuit direction,will carry out an "airspace clear for launch" check that covers all of these potential areas of conflict to achieve the required situational awareness. However, it must always be accepted that the ultimate responsibility for proceeding with any launch rests with the pilot, and the pilot must be satisfied that the surrounding airspace is safe to launch into by whatever means the pilot chooses to establish its status."

On face value this appears to put the launch clearance responsibility firmly on the Pilot-In-Command of the launching glider, in this case the rear seat instructor of the ASK 21. He was giving the front seat pilot a flight to experience mountain flying and, since the front seat pilot completed the pre take-off checks, would have expected the front seat pilot to satisfy himself it was safe and clear to launch, as if he were a command pilot flying solo.

Both pilots, however, had very limited views of airspace above and behind the wingtips due to blind arc limits. There were serious limits on what they could do (unassisted) to clear airspace in the direction of launch; therefore a high reliance is placed on advice from others about launch safety.

The same Operations Safety Bulletin 2/06 goes on to describe airborne pilots responsibilities:

Pilots flying while winch launching is in progress must be particularly conscious of the necessity to remain clear of the launch area. The winch end of a runway should also be considered a potential hazard and be given a wide berth. It is recommended that pilots stay outside a 500 metre radius of the winch and that pilots should never approach and land from the winch end unless in an emergency or operationally necessary. It is recognised that some winch clubs adopt a policy that allows pilots to 'get away' from the launch and thermal in the vicinity of the winch immediately following a launch. Apart from this concession, the winch launching area during winch launching operations must be a strictly adhered to "no-fly zone".

The Operations Safety Bulletin 2/06 also states the need to avoid conflicts:

Airfield Operations

Gliding operations must always be conducted in a manner that conforms to GFA requirements and those for operations at the site in use. They must also be conducted in a manner that is predictable and minimises the possibility of potential conflicts. For example:

- *The GFA recommendation for having both a 'wing-tip' signaller and 'forward' signaller for aerotow operations ensures the maximum monitoring of airspace during the launch sequence.*
- *Launch points should be chosen on the basis of providing the maximum visibility of airspace on approach, overhead, in the circuit (both sides) and into which the glider is about to launch; and*
- *If the airfield is large enough, different take-off and landing strips could be employed to separate launching and landing gliders.It should always be remembered that if there is a possibility for conflict, it will almost certainly one day occur.*

At this site it is impossible for the landing pilot to avoid overflying the winch, so there is a strong reliance on alerted see and avoid to manage the risk of Collison. It was breakdown in the alerted see and avoid process that brought the gliders into potential conflict.

Civil Aviation Regulations

Civil Aviation Regulation (CAR) 162 specifies the rules for right of way for different types of aircraft, in different phases of flight and ground movement. In the case of a landing aircraft versus an aircraft taking off the right of way is clear: a landing aircraft has right of way over one that is taking off or preparing to take-off.

CAR 162, sub-paragraphs (8) and (9) states:

(8) An aircraft that is about to take off shall not attempt to do so until there is no apparent risk of collision with another aircraft.

(9) The pilot in command of an aircraft must give way to another aircraft that is compelled to land.

Distractions and Other Human Factors

Several statements noted the presence of distractions affecting launch point operations, potentially detracting from vigilance and hazard awareness. Prior to the launch of the ASK 21, the launch crew were

focused on a tow plane in circuit. As a consequent they did not observe the Discus CS on its downwind leg. Another human factor relates to risk exposure and human behaviour. Risks that are very low probability, even though high consequence, may diminish in perceived significance with repeated exposure. Highly skilled and experienced participants may tend to assign a level of "routine risk" significance to repeated risk exposure events. Put another way, successful avoidance of a risk over many risk exposure events may build complacency and a behavioural expectation that risks will not be realised. This routine risk acceptance behaviour is evident in many sports (e.g. downhill skiing, contact sports), human ventures (e.g. space shuttle launches, complex industry operations) as well as professional business activity (e.g. financial and stock investment, infrastructure development) offering high rewards and low probability but potentially catastrophic risk consequences. A mid-air collision between a landing glider and winch-launching glider is clearly a very low probability yet high consequence event. Gliding, like other forms of sporting aviation, is acknowledged as being a potentially dangerous recreational activity. The ASK 21 launch was expected to be safe. Numerous launches and landings had been safely executed. A common runway had been used for launching and landing on previous occasions without incident. All members involved in operations that day were motivated to keep operations safe, and acted in ways that they thought would preserve the safety of operations. Normal procedural and equipment defences failed. Latent conditions and adverse circumstances combined and led to the collision.

Active Errors and Latent Conditions

From an aviation operations and safety management perspective, accidents may be analysed in terms of active, operational errors ("unsafe acts") and latent (systems, organisational) conditions. In this case there appears to be a complex cascade of errors, latent conditions and failed defences that have combined in the accident causation chain, with fatal results. These include:

Active errors:

- landing direction was known collision hazard; and
- Winch launch decision made without adequate visual check of airspace clear for launch.Latent conditions:
- Inherent blind arc limitations of gliders, forwards and below for landing gliders, behind for launching gliders;
- Cognitive focus of pilot in landing glider on aiming point on Runway 14 during approach, degrading ability to discern and react to emergent hazards;
- Inherent low visibility of gliders, particularly at a distance;
- The presence of cumulus clouds against a blue sky degrading visual scan; and
- Unserviceable radio in the landing glider; and
- Radio headset not used in the winch potentially degrading ability to receive and understand radio transmissions in high noise environment.Failed Defences:
- See and avoid, and alerted see and avoid processes;
- Circuit and launch radio broadcasts as an aid to alerted see and avoid;
- Airspace clear for launch; and launch authorisation procedures; and
- Procedural separation of launching and landing operations.

CONCLUSIONS

1. The command pilot of the Discus CS was appropriately qualified for the flight.
2. The command pilot of ASK 21 was appropriately qualified for the flight. The front seat pilot was solo qualified, undergoing area familiarisation flight, and therefore appropriately qualified to be on the controls for the flight.
3. No known medical issues or pilot certification concerns affected the pilots in the Discus CAS and ASK 21.
4. Both gliders had a valid Maintenance Release and had been maintained and daily inspected prior to flight in accordance with relevant requirements.
5. Operational decisions were made on the day of the accident to operate both winch and aerotow launches. The preference to land on the reciprocal runway brought the gliders into potential

conflict. The alternative of gliders and tow planes taking off and landing on the same runway was not considered.

6. The presence of the Discus CS on base leg was not identified in the “airspace clear for launch” check pre-launch, and went undetected by the launch crew.
7. Distractions may have affected the launch point operations, potentially detracting from vigilance and hazard awareness.
8. Both ASK 21 pilots had very limited views of airspace above and behind the wingtips due to blind zone limits. There were limits on what they could do (unassisted) to clear airspace; therefore there was a high reliance on advice from others about launch safety.
9. Once the Discus CS pilot had lined the glider up on final approach and was concentrating on the aiming point, his ability to detect an emerging threat from the winch wire was extremely limited.
10. The landing Discus CS had right of way over the launching ASK 21 glider, but this pre-supposes situational awareness of intended movements.
11. Normal “alerted see and avoid” processes used to achieve situational awareness were degraded by the inoperative radio in the Discus CS.
12. The Discus CS collided with the winch wire in the latter stages of the approach while the wire was being wound in by the winch operator.
13. As a result of the collision the Discus CS rotated sharply to the left and pitched nose down. The pilot was able to recover controlled flight and executed a safe off field landing.

SAFETY OUTCOMES

Following this accident the Club made a number of procedural changes:

1. All operational radio calls will be made on the CTAF and the CB radio will be used for non-operational communications. This will increase the number of transmissions during the launch but will aid in alerted see and avoid.
2. The winch operator is now required to clear the airspace prior to entering the winch cabin to commence a launch.
3. When there are two or more gliders operating, a second person will be positioned at the winch to act as a spotter to confirm the airspace is clear.
4. The club has implemented a Duty Pilot roster to ensure there is a suitable person available to assist the Duty Instructor maintain operational control.
5. The winch has been fitted with a high visibility strobe designed to be seen both horizontally and vertically from a significant distance. This light will illuminate whenever the winch is running.

Date	1-Apr-2016	Region	GQ	SOAR Report Nbr	S-0728		
Level 1	Operational	Level 2	Aircraft Loading	Level 3	Loading related		
A/C Model 1	ASK-21Mi	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	51

The student pilot undertook his first solo off a winch launch and satisfactorily completed his flight. After landing it was discovered that the pilot was flying 2Kg below the minimum placarded cockpit weight. Whilst there was no adverse control outcome experienced, this was more by luck than procedure. As is common practice with instructors sending pilots on their first solos, this pilot was offered his first solo flight by his instructor who then stepped out of the aircraft, secured the back seat area and walked away to allow the student to concentrate on the pre take-off checks. As the student was still seated in the aircraft, the pre-boarding checks slipped the pilot's mind and it is likely the student also missed the 'ballast confirmed' component of the 'Trim' check. The pilot was reminded of the importance of checking ballast requirements prior to flight. This CFI will ensure all first solo flights include the student pilot getting out of the aircraft in order to perform a full pre-flight check with the instructor overseeing closely. This situation occurred during a phase of a cadet camp when fatigue caused by heat and workload was affecting many on the flight line. The Club is implementing ways to identify, reduce and control fatigue.

Date	2-Apr-2016	Region	GQ	SOAR Report Nbr	S-0712
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	TST-10M	A/C Model 2	Piper PA25 235		
Injury	Nil	Damage	Nil	Phase	Thermalling	PIC Age	64

A motor glider that had self-launched two hours earlier was thermalling to just below cloud base about 3 miles from the aerodrome. At the top of the climb the pilot levelled the glider's wings and checked for other aircraft. He observed a tow plane and glider combination climbing towards him about 300 feet below and behind the starboard wing of his aircraft. The pilot of the motor glider manoeuvered away from projected flight path of tow plane/glider combination. The tow pilot did not sight the motor glider until it was at the same height and about 500 feet away, at which time he turned away from the motor glider to increase separation. The glider under tow released about three seconds later. The primary method for implementing 'see-and-avoid' is lookout, which involves seeing potential hazards and assessing information prior to reacting. The primary source of information is vision. Pilots must maintain a good lookout at all times and adequately compensate for any aircraft blind spots. This means avoiding long periods at a constant heading and checking that the airspace is clear before turning. Pilots of gliders under tow should also keep a good lookout and use radio communications to alert the tow pilot if a collision risk is likely to develop. For further information, refer to OSB 02/14 'See-and-Avoid for Glider Pilots'.

Date	2-Apr-2016	Region	WAGA	SOAR Report Nbr	S-0714
Level 1	Operational	Level 2	Airframe	Level 3	Doors/Canopies
A/C Model 1	SZD-48 "Jantar Standard 2"	A/C Model 2	N/A		
Injury	Nil	Damage	Substantial	Phase	Launch	PIC Age	56

The pilot completed his pre take-off checks before launching for a cross country flight. The glider launched normally and lifted off to about 3 metres in height. About half way down the runway the canopy departed from the glider. The pilot immediately released and carried out an uneventful landing straight ahead, with the glider coming to rest well before the end of the runway. The pilot made a radio call to alert the ground crew of the occurrence and to warn that the canopy was likely to be obstructing the runway. The pilot recalled that as part of his pre take-off check he pushed up on the canopy to ensure it was secure but forgot to engage the locking levers on both sides of the canopy. The Standard Jantar canopy is in two pieces; with the front piece permanently fixed to the airframe, and the rear piece being secured with a pin at the rear and two locking mechanisms at the front. The pilot noted that it would have been difficult for the launch crew to notice that the canopy was unlocked during the hook-up procedures as there is little visible difference from the outside whether the canopy is locked or not.

Date	2-Apr-2016	Region	SAGA	SOAR Report Nbr	S-0715
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3	Aircraft preparation
A/C Model 1	Grob G 103 Twin II	A/C Model 2	DG-500 Elan Orion		
Injury	Nil	Damage	Nil	Phase	Ground Ops	PIC Age	

The Daily Inspection of two gliders was completed using the wrong Maintenance Releases. The gliding club stores all Maintenance Releases in the clubhouse after flying. The next flying day two Daily Inspectors managed to inadvertently switch Maintenance Releases. The mistake was identified on the flight line before the first flight by the Duty Instructor, who was going through the pre-boarding checks with his student. As the GFA Daily Inspector's Handbook states, Daily Inspectors must check, among other items, *"Registration to correspond with glider registration, i.e. booklet is in the correct glider. The booklets are numbered and are specific to each glider registration. It is not permitted to swap booklets between gliders."*

Date	3-Apr-2016	Region	GQ	SOAR Report Nbr	S-0727
Level 1	Operational	Level 2	Airframe	Level 3	Doors/Canopies
A/C Model 1	Blanik L13 A1	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	18
During a winch launch the solo pilot had the canopy unlatch and open during take-off. The pilot released the cable and safely completed a modified circuit. The canopy was closed during the downwind leg by the pilot and a landing was completed without further incident. The pilot was an early solo student. As part of the pre take-off checklist, the canopy security was tested by pushing up before take-off. The possibility exists that during take-off the pilot inadvertently operated the canopy unlatch mechanism by striking it with his arm. The alternative possibility is that the canopy was not fully secured before take-off and with airframe movement during the take-off roll, the over-centre mechanism was dislodged. This incident highlights the need for pilots to understand the correct locking position of canopy controls for the type that they are flying.					

Date	4-Apr-2016	Region	GQ	SOAR Report Nbr	S-0725
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3	Aircraft preparation
A/C Model 1	ASK-21Mi	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	68
While dealing with a minor technical problem, the fuselage inspection hatch had been opened and then replaced. The pilot did not check the security of the hatch during his pre-flight inspection, and upon engine start the ground crew observed the hatch to fall off the aircraft and signalled the pilot to shut down. The engine was immediately shut down and the hatch was replaced and secured. When completing the pre-boarding 'airframe' inspection pilots must confirm all inspection hatches are properly secured and taped where required. Use of coloured tape can assist visually.					

Date	4-Apr-2016	Region	GQ	SOAR Report Nbr	S-0731
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing
A/C Model 1	Blanik L13 A1	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	15
The pilot, who was undertaking his first solo, forgot to complete his pre-landing checks and failed to lower the undercarriage. Fortunately the undercarriage does not fully retract and no damage was caused during the landing.					

Date	5-Apr-2016	Region	VSA	SOAR Report Nbr	S-0717
Level 1	Operational	Level 2	Airframe	Level 3	Objects falling from aircraft
A/C Model 1	H 36 Dimona	A/C Model 2	N/A		
Injury	Nil	Damage	Substantial	Phase	Launch	PIC Age	72
The pilot, who holds CASA issued ATPL, was operating from a private airstrip near Scone, NSW. The pilot taxied down the airstrip at a fast pace while periodically revving the engine to clear stock from the strip. During a 180 degree turn to line up for take-off the tailplane fell off the aircraft. The pilot opened the throttle and accelerated down the runway for about 500 metres before aborting the take-off, and then taxied to the end of the runway. A local worker witnessed the event and retrieved the tailplane. The witness was later surprised to see the pilot, having refitted the tailplane, take-off on a short flight. The witness reported the incident to the land owner, and subsequently made a statement for the GFA. The pilot later					

took the elevator, which was badly damaged in the incident, to a GFA approved maintenance organisation for repair. When contacted by the GFA's nominated investigator the pilot initially denied an occurrence had occurred. After further questioning the pilot admitted to the incident but denied the aircraft was subsequently flown. The pilot was unable to produce a valid maintenance release for the aircraft and the aircraft logbook had no evidence of an annual inspection having been completed in the previous 12 months. Review of the pilot's logbook revealed the pilot had not had an annual flight review since 2012. The aircraft was repaired and inspected prior to being released to service and the pilot undertook a comprehensive Flight Review prior to flying the aircraft home after repairs. Pursuant to a Deed of Agreement between CASA and GFA, GFA is delegated various safety, compliance and regulatory functions including remediation of risks arising from occurrences involving gliders. Accordingly, GFA issued the pilot with a counselling letter in respect of a number of regulatory non-compliances identified, vis.:

- flying an aircraft without a valid maintenance release contrary to GFA Operational Regulation 2.4;
- failing to submit to an annual flight review as required by GFA Operational Regulation 3.3.5; and
- failing to report a 'Routine Reportable Matter' to the ATSB within 72 hours, namely loss of the aircraft tailplane during an attempted take-off, as required under the Transport Safety Investigation Act 2003, Part 3, paragraph 19(1).

A copy of the counselling letter was forwarded to CASA. The pilot's CFI also advised that the pilot did not renew club membership when it expired in November 2015 and that the pilot was required to join a club in a Region closer to where he operates. Under paragraph 4.1.7 of the GFA Objects and Articles of Association, *"no persons shall be eligible to become or remain a Member unless he/she is a member of an affiliated Gliding Club and has paid the required fee for that membership class."* As a consequence, the pilot's membership of the GFA and flying privileges were suspended subject to providing evidence of membership of an affiliated Gliding Club.

Date	7-Apr-2016	Region	GQ	SOAR Report Nbr	S-0742		
Level 1	Operational	Level 2	Airframe	Level 3	Landing gear/Indication		
A/C Model 1	ASK-21Mi			A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	53
Upon landing after an uneventful training flight the aircraft rolled to a stop with a flat mainwheel tyre. Investigation revealed that the tyre suffered a puncture either during the take-off ground roll or possibly during the landing ground roll. The tyre and tube were removed, repaired and refitted.							

Date	13-Apr-2016	Region	NSWGA	SOAR Report Nbr	S-0730		
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision		
A/C Model 1	DG-1000S			A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	16

ATSB Investigation. On 13 April 2016, an instructor and student of a Jabiru J170-D aeroplane, registered 24-7750 (7750), conducted a local training flight from Bathurst Airport, New South Wales. At about 1442 Eastern Standard Time (EST), as they were returning to Bathurst, the instructor broadcast on the Bathurst common traffic advisory frequency (CTAF) that they were inbound from the south-west, and added that they were estimating arrival in the circuit at 1446. As they subsequently arrived in the circuit, the instructor broadcast that they were joining the circuit on an early downwind for runway 17, for a full-stop landing. The wind was from the east-south-east. Powered aircraft were operating on runway 17 and gliders (and towing aircraft) were operating on runway 08. Bathurst aerodrome elevation is 2,435 ft above mean sea level (AMSL) (Figure 1). About a minute after broadcasting their arrival in the circuit, the pilot of 7750 asked Glider Ground[1] how many gliders were in the air. Glider Ground advised that there were 'two gliders, NGH and NDQ, just thermalling,[2] at 4,000 ft off the threshold of runway 26.' The pilot of 7750 confirmed sighting two gliders. Meanwhile, a student pilot of a Glaser-Dirks DG-1000S glider, registered VH-NDQ (NDQ) was conducting a solo flight at Bathurst. The student had been briefed prior to the flight to make a downwind call, stay close to the runway in use by the gliders, and to keep a good lookout. At about 1449, about 90 seconds after the pilot of 7750 had communicated with Glider Ground regarding glider traffic in the air, the pilot of NDQ broadcast on the Bathurst CTAF that they were on left downwind for runway 08. Immediately following the downwind call by the pilot of NDQ, the pilot of 7750 broadcast that they were on left base for runway 17, and soon after, broadcast that they were on final approach to runway 17 for a full stop landing. The pilot of NDQ reported hearing both those broadcasts, but did not make any broadcasts or directed radio calls in response. After 7750 touched down on runway 17, about 100 m before the intersection with runway 08, the pilot sighted a glider (NDQ) on short final for runway 08, at an estimated 100 ft above ground level. The pilot assessed that they did not have sufficient time to stop before the intersection of runway 08, so applied full power to cross runway 08 as quickly as possible. When at about 500 ft above ground level and on final approach to runway 08, the pilot of NDQ sighted 7750 their 10 o'clock[3] position at about the same altitude. As 7750 landed, the pilot of NDQ assessed that there was the potential for a collision, closed the glider's airbrakes[4] and initiated a climb to pass over 7750. As the glider passed over 7750 near the intersection of the two runways, the pilot of NDQ heard the aircraft's engine increase power. The glider then landed ahead on runway 08 (Figure 1). The instructor in 7750 lost sight of NDQ as it passed overhead. As 7750 accelerated with a high power setting, the instructor elected to continue the take-off. The pilot of 7750 then conducted a circuit before landing safely.

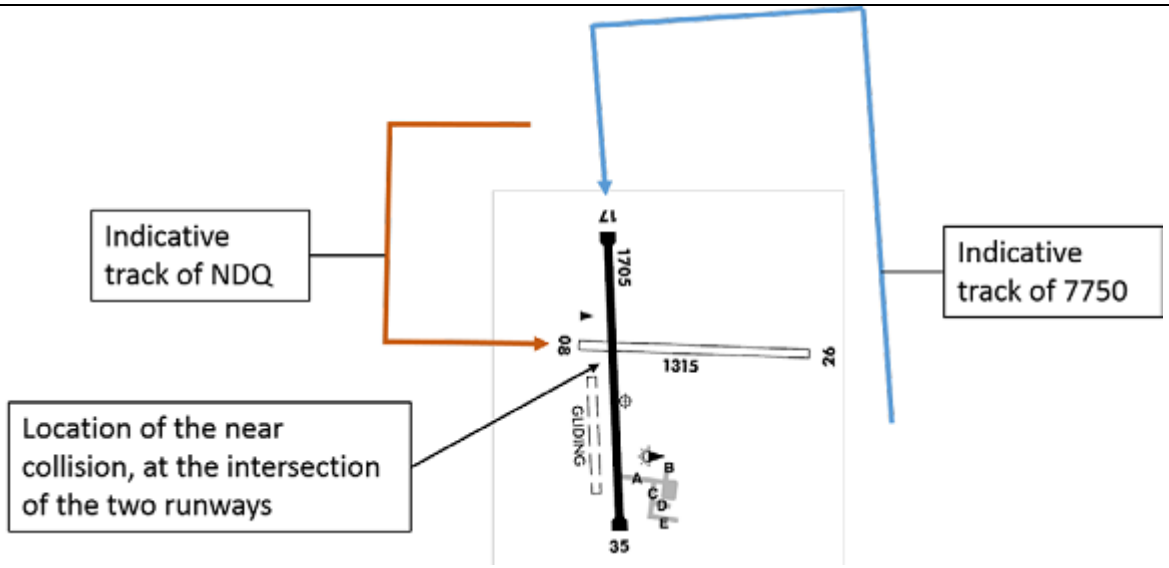


Figure 3: Layout of Bathurst aerodrome showing indicative tracks of 7750 and NDQ
Source: Airservices Australia – annotated by ATSB

Pilot comments - Pilot of 24-7750

The pilot of 7750 commented that the circuit was very busy at the time of the incident. They were maintaining a good lookout and listening intently to the CTAF for positional information from the gliders, noting that gliders would have 'right of way' over powered aircraft. During final approach to runway 17, the instructor was communicating with the student in 7750 for teaching purposes. The pilot also commented that they now discuss operational intentions with the glider operator at the commencement of each day's operations.

Safety message

Simultaneous operations on crossing runways can be problematic, particularly where the volume of traffic is high and where the nature of the potentially conflicting operations are dissimilar (such as powered flight and gliding operations). Organisations responsible for the coordination and conduct of such activities are encouraged to carefully assess and manage the risks involved. This is particularly important when operations are likely to involve instructional flights and relatively inexperienced pilots, where workload and the potential for pilot distraction may be elevated. This incident highlights the importance of effective communication. The primary purpose of communications on the CTAF is to ensure the maintenance of appropriate separation through mutual understanding by pilots of each other's position and intentions. Where a pilot identifies a risk of collision, that pilot should alert others as soon as possible to allow a coordinated and effective response. Civil Aviation Advisory Publication 166-1(3) stated that 'whenever pilots determine that there is a potential for traffic conflict, they should make radio broadcasts as necessary to avoid the risk of a collision'.

[1] A duty gliding instructor operates Glider Ground on the CTAF when there are a large number of low-hour solo students gliding. The duty instructor maintains an oversight of the gliding operations, and provides information on glider positions where required to enhance situational awareness for the pilots of gliders and other aircraft.
[2] Thermalling refers to the use of a column of rising air by gliders as a source of energy.
[3] The clock code is used to denote the direction of an aircraft or surface feature relative to the current heading of the observer's aircraft, expressed in terms of position on an analogue clock face. Twelve o'clock is ahead while an aircraft observed abeam to the left would be said to be at 9 o'clock.
[4] Closing the airbrakes improves the aerodynamic efficiency of the glider.

Date	14-Apr-2016	Region	NSWGA	SOAR Report Nbr	S-0722
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3	Aircraft preparation
A/C Model 1	Grob G 103 Twin II	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	49
The early solo pilot had flown the glider a few times earlier in the day and was undertaking another solo flight. The aerotow launch proceeded normally but just after the towing combination became airborne the glider pilot heard the rear canopy open. The glider pilot released from tow and landed safely straight ahead. The glider was not damaged. A subsequent check of the canopy locking mechanism revealed no fault and the aircraft was returned to service. It is not known how the canopy came to be unlocked but it is thought another person may have opened it to retrieve an item after the pilot had completed the pre-boarding checks. The person running the wingtip did not notice the rear canopy was unlocked. This incident highlights the importance of launch point hygiene and for members not to interfere with aircraft that has already been configured for launch.					

Date	16-Apr-2016	Region	WAGA	SOAR Report Nbr	S-0733
Level 1	Operational	Level 2	Miscellaneous	Level 3	Rope break/Weak link failure
A/C Model 1	ASK-21	A/C Model 2	Piper PA25 235		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	45
The tow rope got caught on either the tailwheel of the tow plane or on a stake in the ground near the tow plane holding point. During launch the rope became abraded and failed while the glider was still on the ground. The CFI noted that this is the third incident of this type with this tow plane. The club has placed a 300mm sheath over the rope at the tow plane end to prevent the rope getting further caught.					

Date	16-Apr-2016	Region	NSWGA	SOAR Report Nbr	S-0760		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Hard landing		
A/C Model 1	SF 25 C Falke			A/C Model 2	N/A		
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	67

During final approach the pilot felt the elevator control to be heavy, requiring a lot of force to move the stick backwards. Believing the aircraft was trimmed nose down the pilot adjusted the trim lever to no effect. The pilot then thought the nose heavy trim may have been loading related, as the aircraft had long range fuel tanks and his luggage for the weekend. The pilot decided to land short on the runway to taxi clear of other aircraft and people but during the approach the aircraft experienced a higher than normal descent rate. The pilot closed the airbrakes and opened the throttle but the speed continued to wash off more quickly than normal during the flare and hold-off, and the aircraft stalled while still 2 metres in the air. The aircraft landed heavily and bounced back into the air, at which time the pilot cut the power. The aircraft again touched down and the propeller struck the ground while the engine was idling. The pilot was able to clear the runway. Upon inspection the pilot noticed the elevator trim tab was sticking up vertically into the airflow due to the Bowden cable coming loose. The Bowden cable was subsequently fixed, a new propeller was fitted and the aircraft was flown home.

Date	17-Apr-2016	Region	VSA	SOAR Report Nbr	S-0721		
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Aircraft Separation Issues		
A/C Model 1	Piper PA-25	A/C Model 2	Fairchild SA227-AC Metroliner				
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	56

The Metroliner pilot was undertaking a repositioning ferry flight from Hobart to Launceston for the purpose of maintenance and was not carrying passengers. As the weather was CAVOK the pilot elected to conduct the flight under Visual Flight Rules to save submitting a flight plan, and Hobart ATC subsequently approved the pilot's request to track from Hobart direct to Launceston at 2500ft. When the aircraft was about 50NM from Launceston the pilot tracked to intercept the 'Karen-Launceston' track to position for a final approach onto runway 32 at Launceston airport. The pilot overlooked that this track would put the aircraft around the Woodbury airfield area where there was regular gliding operations. The pilot stated that, as the Metroliner approached Woodbury, a glider was sighted about 5-7 miles away and so the aircraft's heading was adjusted slightly right of track to provide additional clearance. The pilot also stated that a call was made on the Multicom frequency but no reply was heard. The pilot of the airborne glider and the pilot of the airborne tow plane stated that they also made calls on the Multicom frequency that went unanswered. The Metroliner pilot stated that they passed about two miles east of the airfield at just under 1,500ft AGL, while observers on the ground stated the Metroliner passed within about one mile of the airfield at about 1,000ft AGL. Investigation by the company's Chief Pilot identified the incident was consequent of poor airmanship and decision making by the pilot, who did not comply with company operating procedures. The pilot was counselled and has learnt a valuable lesson in airmanship and the need to comply with standard operating

procedures. This incident highlights the importance of complying with standard procedures, being properly prepared for the flight, and knowing the route that you are taking. A well-structured and organised flight plan will not only maximise the safety of those on board but also the safety of other airspace users.

Date	20-Apr-2016	Region	SAGA	SOAR Report Nbr	S-0732				
Level 1	Operational	Level 2	Ground Operations	Level 3	Foreign Object Damage/Debris				
A/C Model 1	DG-1000S	A/C Model 2	N/A						
Injury	Nil	Damage	Minor	Phase	Launch	PIC Age	51		
After a routine landing of the aircraft and whilst the aircraft was running on the main & nose wheels, a small rock was caught between the LHS side of the nose wheel fairing and the tyre resulting in a portion of the fairing breaking away.									

Date	22-Apr-2016	Region	GQ	SOAR Report Nbr	S-0735
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	IS-30	A/C Model 2	Helicopter		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	71

The glider pilot had been flying for about one hour and had returned to the airfield with the intention of landing. A circling descent was being conducted on the dead side of the common circuit about 1NM south of the airfield. At about 2,300ft AGL the glider pilot noticed a dark coloured helicopter approaching fast in a 'head-on' position. As the glider was turning away from the threat, its pilot continued the turn while monitoring the helicopter pass on the right about 200ft away. The glider pilot did not recall hearing any radio calls from the helicopter, nor did he attempt to contact its pilot. Subsequent attempts to identify the helicopter were unsuccessful. The most hazardous area for collisions is within a space bounded by a cylinder of airspace 5 NM in diameter and up to 3,000 ft. above aerodrome elevation. This incident highlights the importance of pilots maintaining good situational awareness within this high-risk area. For further information, refer to Operational Safety Bulletin (OSB) 02/14 - "See-and-Avoid for Glider Pilots" and CAAP 166-1 - "Operations in the vicinity of non- controlled aerodromes".

Date	24-Apr-2016	Region	GQ	SOAR Report Nbr	S-0734
Level 1	Consequential Events	Level 2	Forced / Precautionary landing	Level 3	Forced/Precautionary Landing
A/C Model 1	Standard Libelle 201 B	A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Launch	PIC Age	49

During an aerotow launch in turbulent and gusty conditions a low level uncommanded release occurred. With insufficient room to land ahead the pilot made a turn to the right and landed in a grassed paddock directly adjacent to the airstrip. The landing was uneventful but the aircraft ground looped in long grass when the pilot lowered the right wing avoid colliding with a wire fence. Subsequent investigation of the release mechanism did not identify a fault and the reason for the premature release in unknown.

Date	8-May-2016	Region	GQ	SOAR Report Nbr	S-0740
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	Jonkers JS1-C	A/C Model 2	NORTH AMERICAN AVIATION INC AT-6 Harvard		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	56

A glider on final glide to the circuit area of a certified aerodrome had a near miss with a powered aircraft approximately 2 NM North of the airfield at about 500ft AGL. The pilot had been flying with another glider as practice for the forthcoming Benalla world championships, and the two gliders were returning to the airfield from the north, separated by about 3NM horizontally. The pilot gave a call on entering the CTAF at 10NM, and then a further call on the CTAF at 5NM advising of the pilot's intention to join a circuit on the west side of the airfield. Shortly afterwards, when about 3NM from the airfield and around 500 feet AGL the pilot caught a glimpse of reflected light from the cowling of a powered aircraft approaching head-on, at perhaps 200m distance. The pilot estimated that the other aircraft was slightly higher and pushed firmly forward; passing with a separation of about 50 feet at a closing speed of around 200 knots. The pilot of the powered aircraft did not take avoiding action, nor respond to subsequent radio calls from the glider pilot. It was subsequently determined that the pilot of the powered aircraft, a North American Harvard, saw the glider at the last moment, and while he had heard the radio broadcasts by the glider pilot he did not respond as the aircraft had a flat battery. The glider pilot reported that the Harvard was painted in full camouflage, and had it not been for a glint off a polished area he may not have seen it at all.

Date	17-May-2016	Region	NSWGA	SOAR Report Nbr	S-0744
Level 1	Consequential Events	Level 2	Low Circuit	Level 3	Low Circuit
A/C Model 1	Grob G 103 Twin II	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	70

The incident flight occurred during an Instructor Training course. The instructor under training held a Level 1 rating and was being assessed for upgrade to Level 2. The command pilot, a Level 3 Instructor, was flying the launch and acting the role of a "near solo student", with the instructor under training fault finding. The winch driver was briefed to cut power at a height sufficient to force student to choose “land ahead” or “modified circuit” options. Following normal separation and establishment of full climb, the winch driver cut power as briefed. The Level 3 Instructor, acting as a student, reacted as briefed and, after establishing safe speed, assessed that there was insufficient runway remaining to land ahead and initiated a right-hand circuit to land on the reciprocal runway. The downwind leg was extended to the runway threshold, whereupon the pilot flying (the Level 3 Instructor) executed a well banked low-level 180 degree turn onto final. During this turn the wing tip was observed to be about one wingspan above the ground. A safe landing ensued. During instructor training it is not uncommon for the Level 3 Instructor to simulate typical errors made by students to test the threshold of intervention of the instructor candidate. While such errors are usually well-planned and flown within the capabilities of the Level 3 Instructor, mistakes occasionally occur. In this case the command pilot completed the final turn at too low a height when a safe landing straight ahead was the safer option. At this site the operational runway slopes downhill, and the winch end is almost 100ft lower than the launch point. The command pilot could not explain why he did not recognise the need to turn final earlier or land straight ahead but it is possible the sloping terrain may have contributed to the misjudgement.

Date	18-May-2016	Region	NSWGA	SOAR Report Nbr	S-0743
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	On an instructor training flight, IUR was setting	A/C Model 2	DG-1000M		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	55

While approaching the circuit joining area at low level for a modified circuit, the pilots of a Grob 103 heard a

slightly indistinct downwind radio call from a DG 1000. The pilot flying the Grob 103 gave a radio call seeking confirmation of the registration of the preceding glider but there was no reply. The pilot of the Grob 103 then made a downwind radio call and flew a close circuit but could not locate the DG1000. While turning onto a close base leg the Grob 103 pilots received an airprox alert from the Flarm unit that indicated they were turning inside the other aircraft. The pilot of the Grob 103 gave a radio call to alert the other glider and continued onto final approach and a safe landing. The DG1000 pilots had seen the Grob 103 and the command pilot instructed the pilot flying to conduct a 360 degree orbit to provide separation. The orbit was conducted over a treed area on the runway approach at a relatively low height. The pilot flying stated that the close proximity to the trees led to an instinctive urge to pull up, which resulted in the speed decaying below circuit speed. The pilot flying regained approach speed and made a safe landing. The command pilot's decision to conduct an orbit on final approach was both misguided and dangerous. Not only was there ample space on the airfield to land alongside and well clear the leading glider but the DG1000 has excellent airbrakes that meant a short landing was also an option. As the pilot flying noted, he inadvertently allowed the speed to decay as the glider descended towards the trees during the orbit, which could have led to a low level loss of control accident.

Date	21-May-2016	Region	VSA	SOAR Report Nbr	S-0745		
Level 1	Technical	Level 2	Systems	Level 3	Avionics/Flight instruments		
A/C Model 1	DG-500 M	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	63

During the take-off roll the experienced command pilot noticed the ASI was indicating too slow an airspeed for the conditions and abandoned the launch. Post-flight inspection revealed the ASI plumbing had been inadvertently disconnected during earlier maintenance to the navigational instruments. As the pitot tubing was aligned with the ASI connector stem, a reading was achieved during the DI. Investigation by the CFI determined that the instrument plumbing became disconnected when the instrument panel cowling was removed, and that an independent check of the instruments was not undertaken post completion of the maintenance. It was also determined that during the Daily Inspection the pilots had to blow hard into the pitot to get the ASI to register and, while this was considered odd, the pilots saw what they expected to see and did not question this (confirmation bias). Neither pilot was under any time or environmental pressure. The CFI noted the importance of independent checks being carried out when an aircraft component has been taken apart and, if something appears unusual to stop and further investigate.

Date	21-May-2016	Region	GQ	SOAR Report Nbr	S-0741		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Loss of control		
A/C Model 1	SZD-50-3 "Puchacz"	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	74

The student pilot mishandled the turn onto downwind for the operational runway and the glider instantly entered a spin to the right. Recovery was affected by the instructor at about 200ft AGL and a safe landing was completed on the reciprocal runway. The student had come to gliding following some powered aircraft training and was briefed by the instructor of the need to maintain an attitude/airspeed relationship and use coordinated rudder inputs. Approaching the circuit joining area the student allowed the airspeed to decay. The instructor prompted the student to lower the nose and the student complied but immediately commenced a turn prior to achieving a safe airspeed. The glider departed controlled flight and commenced a turn to the right with a steep nose down attitude. The instructor took control, applied the standard spin recovery technique, and recovered to normal flight. This incident highlights the importance of instructors taking-over early during critical stages of the flight where an error can be potentially dangerous; such as when close to the ground. Rather than wait to see whether the student will properly correct a problem, the instructor should take-over and demonstrate while maintaining a safe environment. Allowing the student to

fly in an unsafe manner may send the message that what the student is doing is acceptable when it is not!

Date	4-Jun-2016	Region	WAGA	SOAR Report Nbr	S-0747		
Level 1	Consequential Events	Level 2	Forced / Precautionary landing	Level 3	Forced/Precautionary Landing		
A/C Model 1	DG-500 Elan Orion	A/C Model 2	KR-03A Puchatek				
Injury	Nil	Damage	Nil	Phase	Outlanding	PIC Age	47

The command pilot flying with a Private Passenger in a DG-500 entered the circuit joining area at around 800 ft AGL after flying through some light rain just south-west of the airfield. Upon entering the downwind leg the command pilot saw the Club Puchatek trainer was also on its downwind leg and gave a radio call noting he was following. As the DG-500 approached the upwind boundary of the airfield the glider experienced a high rate of sink and the command pilot angled towards the airfield with the intention of flying a modified circuit to land midfield. The command pilot lost sight of the Puchatek while he was concentrating on his landing options. As the DG-500 was abeam the midpoint of the operational runway, the command pilot realised that a low-level 180 degree turn to land on the operational runway was ill-advised, especially as he had still not sighted the landing Puchatek and that the remaining runway length was minimal. Having already selected an alternative off-field landing area, the command pilot made a 90 degree turn away from the

runway and landed safely in a paddock.

Date	13-Jun-2016	Region	NSWGA	SOAR Report Nbr		S-0767	
Level 1	Operational	Level 2	Aircraft Control	Level 3		Hard landing	
A/C Model 1		Astir CS		A/C Model 2			
Injury	Nil	Damage	Substantial	Phase	Outlanding	PIC Age	70

The glider was observed to touchdown heavily on the mainwheel when the pilot failed to arrest the descent rate during the flare. Following the mainwheel contact, the tailwheel then contacted the ground and the glider rebounded about one metre into the air. The pilot abruptly pitched forward, resulting in the mainwheel again impacting the ground heavily, followed by the tailwheel, and the glider rolled to a stop. Although the pilot did not believe the landing was heavy, the CFI insisted on a proper airframe inspection and removal of the seat pan revealed a structural crack fully through the cast alloy bulkhead behind the cockpit. The pilot's CFI noted the primary cause of this accident was the pilot's failure to hold off in the proper two point, low energy, landing attitude. This is a common problem where the pilot has been trained on nose wheel type aircraft and "fly-on" landings have been tolerated by the instructors. In a 'taildragger', a fly-on landing on the mainwheel without fully arresting the rate of descent will result in the tail dropping and increasing the angle of attack. This coupled with the aircraft still having flying speed results in the glider leaving the ground, where over-pitching to stop the aircraft from rising further usually leads to another heavy landing - possibly worse than the first. This incident also highlights the need for pilots to be honest with themselves and to always conduct a thorough airframe inspection after any heavy landing. The pilot subsequently completed a course of remedial training.

Date	16-Jun-2016	Region	NSWGA	SOAR Report Nbr	S-0748		
Level 1	Environment	Level 2	Wildlife	Level 3	Birdstrike		
A/C Model 1	LS 1-f	A/C Model 2	N/A				
Injury	Nil	Damage	Minor	Phase	In-Flight	PIC Age	54

While thermalling to the left at about 4600ft QNH (3200ft AGL) the pilot heard a loud bang and felt the aircraft shudder. The pilot immediately straightened out and considered evacuating the aircraft. However, after cautiously checking the function of all controls, the pilot confirmed the glider was flying normally. The pilot looked down both wings and could see no damage, and using his smartphone was able to see no damage to the tail plane. The pilot decided to fly back to the home airfield, which was within glide range. After a very gentle and cautious circuit, the pilot landed without further incident. Upon inspection the right wing (upmost during the turn) was found to be damaged, consistent with a bird strike involving a large bird, most probably a wedge-tailed eagle. Although birds and glider pilots often share the same thermal and can operate near each other with relative safety, birds can and do occasionally come into contact with a glider. While it is uncommon that a bird strike causes any harm to aircraft crew, many result in damage to aircraft.

Date	25-Jun-2016	Region	GQ	SOAR Report Nbr	S-0749
Level 1	Technical	Level 2	Systems	Level 3	Avionics/Flight instruments
A/C Model 1	Piper PA-25-235	A/C Model 2	ASW 20BL		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	24
The tow plane's ASI malfunctioned during launch. The tow pilot climbed to a safe height and waved-off the glider. Both aircraft landed safely. Subsequent inspection revealed the ASI plumbing was not blocked and the ASI worked normally thereafter. It is suspected that an insect blocked the pitot tube, which became cleared upon landing or inspection.					

Date	28-Jun-2016	Region	GQ	SOAR Report Nbr	S-0750
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3	Engine failure or malfunction
A/C Model 1	ASK-21Mi	A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Launch	PIC Age	48
The Self-launching sailplane operated by the AAFC experienced a loss of engine power and subsequent engine surging after take-off. The engine was shut down and the glider was safely returned to the airfield for a normal landing. After landing the engine was inspected and it was identified that the air intake tube had separated from the from the throttle body. There was damage to the corrugated shrouding of the exhaust system as well as the air filter. Minor damage was also identified on the fins of the radiator. This appears to have occurred from the air filter standpipe being caught between the radiator and the exhaust when the engine was retracted. The cause of the air intake tube separation is being investigated. The clamp that secures the air intake tube had been tightened a number of times after the DI procedure discovered it had become loose.					

Investigation found the lower air intake tube securing clamp failed causing the air intake tube to become detached from the throttle body, which caused engine power fluctuations after take-off. Secondary damage to the muffler and radiator occurred when the propeller tower was subsequently retracted. The reason for clamp failure was not identified but may have been due to: (a) Over tightening; (b) Not being tight enough due to this type of clamp binding while being tighten giving a false sense of tightness; or (c) Manufacturing fault of the clamp. A contributing factor may have been 2- stroke oil on the inside of the tube. Once the clip failed this lubrication would have eased the progress of the tube off of the throttle body. To prevent recurrence, both the upper and lower air intake tube securing clamps were tightened, torqued to 0.9NM and then lock wired in place, after which a bead of "Torque Seal" was applied to the clamp. In late August 2016 the AAFC issued 'Special Technical Instructions (STI) 01603 detailing rectification and ongoing maintenance procedures, upon completion of which saw the aircraft returned to service.

Date	2-Jul-2016	Region		WAGA		SOAR Report Nbr		S-0751	
Level 1	Operational		Level 2	Ground Operations		Level 3		Ground handling	
A/C Model 1		DG-1000S				A/C Model 2	N/A		
Injury	Nil	Damage		Minor	Phase	Ground Ops		PIC Age	

While turning under vehicle tow the glider's right hand wingtip caught in a wire fence. The vehicle driver was navigating a path between a pile of burnt trees left from recent hangar construction and the boundary fence, with an observer assigned to monitoring the right wing that was in the driver's blind spot. The observer was either distracted or misjudged the turning radius and failed to notice the close proximity of the wingtip to the fence. The vehicle driver stopped immediately upon impact, thereby minimising the damage to minor scratching of the wingtip and a bent towing bar. The club has removed the obstacle.

Date	17-Jul-2016	Region		NSWGA		SOAR Report Nbr		S-0754	
Level 1	Operational		Level 2	Flight Preparation/Navigation		Level 3		Aircraft preparation	
A/C Model 1		Twin Astir				A/C Model 2	N/A		
Injury	Nil	Damage		Nil	Phase	Launch		PIC Age	54

Whilst conducting the first launch of the day the command pilot flying from the rear seat noticed that the front canopy was not closed and locked. The launch had been delayed by weather and also by a number of IFR aircraft operating at the airfield. The pre-solo student completed the pre-takeoff checks with some prompting, however the command pilot was distracted by reading back an airways clearance as the canopy was closed. The launch crew did not notice that the forward canopy was not closed and locked. With the

student on the controls, the command pilot flew the launch. At approximately 200ft AGL the command pilot allowed the tug to climb through the glider's station and assumed a low tow position. As the glider moved through the tugs wake the command pilot noticed the rear of the forward canopy lift approximately 1 cm. The command pilot directed the student pilot to hold the canopy closed and to lock it, however the student was unable to move the canopy locking control knob. At approximately 800ft AGL and with the student holding onto the canopy, the command pilot released and conducted a modified circuit to land on the reciprocal runway without further incident. The canopy locking mechanism was inspected and found to be serviceable with no damage noted. The CFI noted that the ground crew should be at a distance from the aircraft while the pilots complete their checks so as to not distract or potentially interrupt the checks. The '*Canopy closed and locked*' check should also include a test of trying to lift/open the canopy.

Date	24-Jul-2016	Region	GQ	SOAR Report Nbr	S-0755
Level 1	Operational	Level 2	Miscellaneous	Level 3	Rope/Rings Airframe Strike
A/C Model 1	PW-6U	A/C Model 2	Piper PA25 235		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	46
During a training flight where the instructor was simulating a double release failure, a bow came into the aerotow rope as the glider returned to the line astern position and the weak link broke when tension came on. The rope fell back over the port wing where it remained. The instructor activated the glider's tow release in the hope that the rope would slide off the wing but the rope remained in situ. Aircraft control was not affected and the command pilot joined circuit. A steep final approach was flown well past the threshold to avoid the rope fouling any obstacles and a safe landing ensued. The aircraft suffered no damage from the event. It is not uncommon for slack to develop in the rope during out-of-station manoeuvres and for the weak link to break when the rope comes back under tension. In situations involving a large bow in the rope it is recommended that pilots release the rope just before the slack is fully taken up to avoid breaking the weak link and potential control difficulties should the rope wrap itself around the airframe.					

Date	30-Jul-2016	Region	NSWGA	SOAR Report Nbr	S-0756
Level 1	Operational	Level 2	Airframe	Level 3	Landing gear/Indication
A/C Model 1	DG-300 Elan Acro	A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	50
After a normal landing and during the ground roll the main wheel sank into soft ground and the undercarriage collapsed, resulting in the undercarriage doors being torn off at the hinges. It is possible that dirt in the front strut kept the undercarriage from locking overcentre, despite the cockpit lever indicating the wheel was down and locked.					

Date	6-Aug-2016	Region	VSA	SOAR Report Nbr	S-0757
Level 1	Operational	Level 2	Runway Events	Level 3	Runway incursion
A/C Model 1	ASK-21	A/C Model 2	ASK-21		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	51
Gliding operations were being conducted from the main runway of this registered regional aerodrome as the grass runways were waterlogged and closed by NOTAM due to heavy rains. Around midday and just after a glider joined the downwind leg and while another glider was about to be launched by aerotow, the local Aerodrome Inspector drove a vehicle onto the active runway. The vehicle driver was not carrying a radio, and could not make nor receive operational calls. The launch was aborted and the command pilot in the landing glider assumed control from the student as the runway was now occupied. The Aerodrome Inspector					

was under the mistaken impression that gliding operations could only be conducted from the grass runways and not the main runway. The Club CFI subsequently met with the Aerodrome Manager and the Runway Inspector now has a better understanding of his responsibilities. Runway inspections will be conducted before local flying operations commence and the inspector is required to carry and use a VHF radio when on movement areas.

Date	12-Aug-2016	Region	NSWGA	SOAR Report Nbr		S-0759	
Level 1	Technical	Level 2	Systems	Level 3		Flight controls	
A/C Model 1		Xenos		A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	64

The spoiler actuating cable pulled through the crimped fitting when the pilot operated the spoiler lever on base leg. The pilot made an uneventful landing without spoilers. Investigation revealed faulty crimping during manufacture of the cables.

Date	13-Aug-2016	Region	NSWGA	SOAR Report Nbr		S-0762	
Level 1	Operational	Level 2	Ground Operations	Level 3		Ground handling	
A/C Model 1		Piper PA-25 235		A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	70

While the tow plane was being pushed backwards into the hangar at the end of the day's flying, the right wing tip struck a steel column supporting the hangar door, breaking the wing tip bow in three places. To assist crew align the aircraft, there are two yellow lines painted on the floor marking where the mainwheels should be, and a red line between the two yellow lines to guide the tailwheel. The accident occurred when

the crew repositioned the tail wheel of the aircraft on the yellow line markings instead of the red line. All persons involved in pushing the aircraft into the hangar were experienced glider and or towplane pilots. Factors contributing to the accident include:

- failure to align the aircraft on the hangar centreline before commencing to push the aircraft into the hangar (primary cause);
- attempting to correct original misalignment as the aircraft was being pushed into the hangar;
- aligning the tailwheel to follow the yellow line instead of the red line into the hangar;
- failure to ensure the wing tips were clear of the hangar door columns on both sides before pushing the aircraft onto the hangar;
- the red line does not extend outside the hangar onto the concrete apron, as the yellow lines do (see accompanying photos) making it difficult to see in low light;
- the red line was obscured by the tailplane and fin of the aircraft;
- the light was poor making it hard to see the red line; and
- fatigue was probably a factor in the accident.

Date	20-Aug-2016	Region	GQ	SOAR Report Nbr	S-0761		
Level 1	Operational	Level 2	Runway Events	Level 3	Runway incursion		
A/C Model 1	K 7	A/C Model 2	N/A				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	52
The student pilot had made a call on the CTAF advising a winch launch was about to commence as a powered aircraft taxied to the holding point about 250m ahead of the glider. The student pilot gave a rolling call as the winch cable tightened and, as the glider accelerated, the powered aircraft at the holding point							

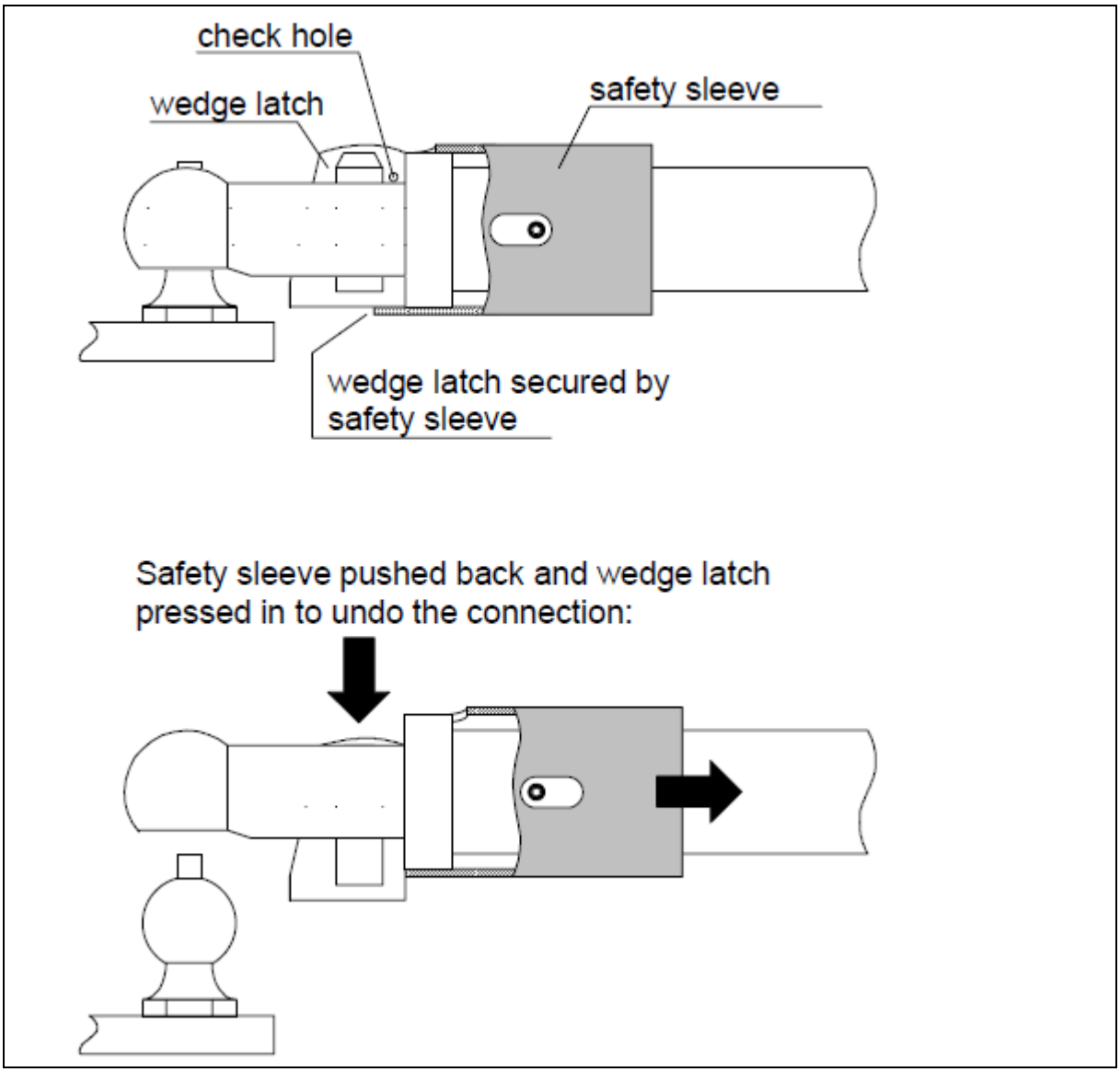
gave a entering runway call and moved onto the ruynway. As the glider approached the top of the launch another powered aircraft was observed by the instructor passing below the glider. The winch driver stopped the launch early to prevent conflict and alerted the pilots of the powered aircraft of the hazard.

Date	20-Aug-2016	Region		SAGA		SOAR Report Nbr		S-0764	
Level 1	Operational		Level 2	Runway Events		Level 3		Runway incursion	
A/C Model 1		Piper PA 25-235			A/C Model 2		Jabiru J170		
Injury	Nil	Damage	Nil	Phase	Launch		PIC Age	64	

Just after the aerotow combination became airborne an RA-Aus registered Jabiru commenced taxying and entered the operational runway. The tow combination continued the climb and passed over the Jabiru by approximately 50 ft. The Jabiru pilot (instructor) and student were taxiing out towards the operational runway whilst maintaining a listening watch on the radio for circuit traffic. At the holding point and prior to crossing the active runway, the pilot and student conducted a visual lookout to ensure the approaches and runway were clear. The Jabiru pilot noticed the glider and tug to be stationary and that the runway and approaches were clear. The Jabiru pilot made a radio call to enter and taxi across the operational runway. Simultaneously, the tow pilot commenced a glider launch and gave a rolling call on the CTAF. As a consequence, neither the Jabiru pilot nor the tow pilot heard each other's radio transmission. Investigation revealed the pilot of the Jabiru conducted usual lookout and radio call procedures, as did the glider/tug combination. However, due to simultaneous transmission neither pilot heard the other's radio call.

Date	26-Aug-2016	Region		VSA		SOAR Report Nbr		S-0765	
Level 1	Operational		Level 2	Aircraft Control		Level 3		Control issues	
A/C Model 1		ASK-21			A/C Model 2				
Injury	Nil	Damage	Nil	Phase	Landing		PIC Age	60	

The glider was under the command of a Level 3 Instructor and the handling pilot was a Level 1 Instructor being assessed for upgrade to Level 2 status. Prior to launch the handling pilot conducted the pre-flight checks, including confirmation that the airbrakes were closed and locked. During the flight the handling pilot activated the airbrakes but noticed the starboard airbrake did not deploy. Thereafter, the starboard airbrake would open and close intermittently without input from the pilots. The handling pilot returned to the airfield and a 'PAN' call was made during the downwind leg. The handling pilot flew a modified circuit and landed without further incident. The aircraft had been on static display at a local event the previous weekend and had been flown on seven occasions over the previous five days since being re-rigged. Investigation after removing the wings did not identify any mechanical problem with the coupling or ball that may have led to it disconnecting, and it is believed the coupling had not been correctly fastened. It was concluded that the inspector who did the dual inspection and the subsequent Daily Inspectors did not visually check the connection and merely applied some pressure to the fitting to confirm security. It is apparent that these checks were insufficient to ensure the fitting was in safety. This aircraft uses spring-loaded Wedekind safety sleeves and the manufacturer is unaware of similar occurrences on this model. They noted that a correctly fitted Wedekind sleeve will prevent an unintentional disconnection as long as the ball diameter is within specification and the wedge is not unduly worn. The Aircraft Flight Manual states: *"During assembly of the quick-release connectors either the aluminium safety sleeve is pushed back until the wedge may be pushed in entirely, or the spring is removed from the check hole of the wedge. After the careful assembly of the quick-release connectors check that the spring-loaded safety sleeve secures the wedge again completely. All quick-release connectors must be tested by pulling the pushrods - socket ends off the ball heads -, applying a force of not less than 5 daN (10 lb), and it must be checked that the safety elements are in their correct position."* It is suggested that inspectors check the correct fitment visually, using a torch if necessary. The Wedekind sleeve also has a notch and pin arrangement that can be felt to conform it is correctly engaged.



Date	27-Aug-2016	Region	GQ		SOAR Report Nbr		S-0766		
Level 1	Operational		Level 2	Aircraft Control		Level 3	Pilot Induced Oscillations		
A/C Model 1		ASK-21			A/C Model 2				
Injury	Minor	Damage	Nil	Phase	Landing		PIC Age	62	

The solo pilot flared for landing but ballooned slightly to about 2 metres above ground. The glider maintained that height for several seconds. The pilot then closed the airbrakes and the glider gained some more height. The pilot pitched nose down and then abruptly flared, and the glider touched down heavily on the nose wheel and main wheel simultaneously. The aircraft experienced three pilot induced oscillations onto the ground before coming to rest. The pilot suffered minor back pain. Potential causal factors include inexperience on type, low currency, landing into the sun, crosswind, and incorrect landing technique leading to over-controlling the glider in pitch during flare and hold off prior to ground impact.

Date	27-Aug-2016	Region	GQ	SOAR Report Nbr		S-0778	
Level 1	Operational	Level 2	Runway Events	Level 3		Runway incursion	
A/C Model 1				A/C Model 2	VAN'S RV-7		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	59

Investigated by the ATSB

On the morning of 27 August 2016, a Van's RV-7 aircraft, registered VH-VTZ, and a Glaser-Dirks DG-400 motor-glider, registered VH-XJZ, were both prepared for flight from Gympie aircraft landing area (ALA), Queensland. The pilot taxied the motor-glider from the Gympie ALA glider hangars and back-tracked on the grass alongside runway 14 (Figure 1). Before entering the runway strip, the pilot made a radio broadcast on the common traffic advisory frequency (CTAF) 126.7, that they were entering and back-tracking runway 14. On arrival at the runway threshold, the pilot made another broadcast that they were lining-up on runway 14. The pilot taxied the motor-glider onto the threshold of runway 14 and conducted their engine run-up checks. After about 10–15 seconds, they made a broadcast that they were rolling on runway 14 and released the brakes for take-off. At about the same time as the motor-glider was backtracking runway 14, the pilot of the RV-7 made a broadcast on the CTAF that they were taxiing from the general aviation hangars. At the runway holding-point, the pilot then made a broadcast that they were entering and back-tracking runway 14 (Figure 1). Neither pilot heard the broadcasts from the other pilot. The motor-glider started the take-off roll from the threshold of runway 14 and as it approached take-off speed, the pilot noticed the top of another aircraft (RV-7) appear on the horizon. Both pilots applied their aircraft brakes and veered to their right. The aircraft came to a stop next to each other on the runway abeam the glider hangars at about 1110 Eastern Standard Time (EST). The pilots performed a radio check and verified they could hear each other and both were broadcasting on the CTAF 126.7. They then proceeded on their planned flights without further incident.

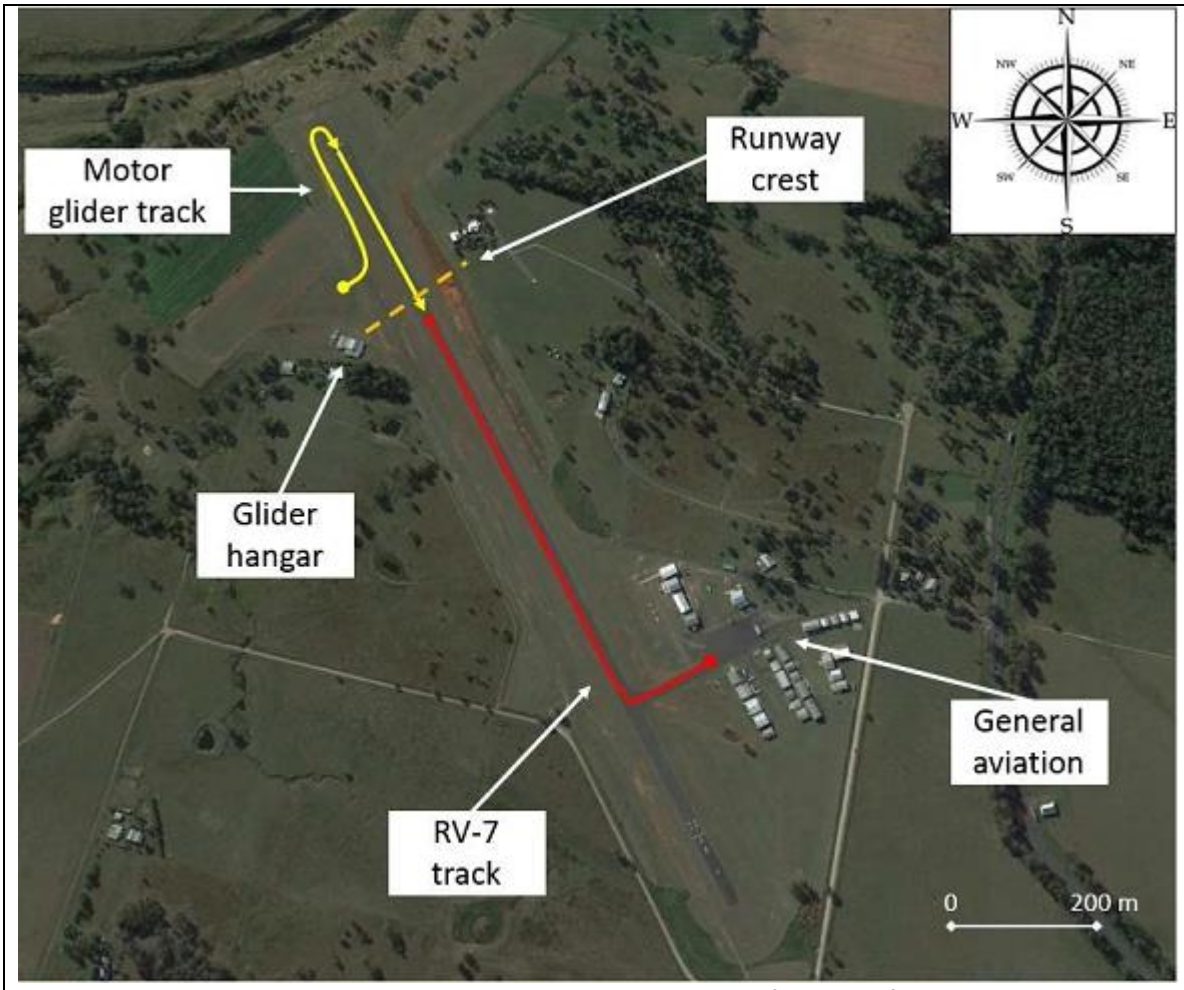


Figure 1: Gympie ALA and ground tracks of the aircraft

Gympie runway slope. From the runway 14 threshold, runway 14 slopes upward to a crest, which is in line with the glider hangars (Figure 1). Runway 14 then slopes downhill to the threshold of runway 32. The motor- glider pilot commented that in an aircraft low to the ground, such as a glider, stationed at the threshold of runway 14, the pilot would not be able to see an aircraft such as the RV-7, back- tracking runway 14, until the other aircraft was abeam the glider hangars (Figure 1). The RV-7 pilot commented that when back-tracking runway 14 in their aircraft they cannot see another low profile aircraft, such as a glider, until they are about 300 m from the threshold of runway 14.

Aircraft radios. The RV-7 has one radio antenna located on the underside of the aircraft. The motor-glider pilot was unsure of the location of their radio antenna, because they are integral to the airframe in order to minimise drag. Both aircraft radio systems are capable of monitoring two frequencies, but can only broadcast on one. Both pilots confirmed they had 126.7 CTAF set and in use as their active frequency at the time of the serious incident. However, the RV-7 pilot commented that their radio microphone may not have been up against their mouth, which would have reduced the volume of their transmissions.

Previous incidents. Both pilots commented that there have been previous incidents of traffic conflicts between aircraft, which started with missed radio calls when the aircraft were at opposite ends of the main runway (runway 14/32). On these previous occasions, aircraft airborne in the circuit could hear the radio calls of opposite end traffic on CTAF, despite the traffic on the ground not hearing each other. A search of the ATSB notifications database indicated that in 2016 there were two incidents at Gympie ALA, where the reporter has indicated that a broadcast was either not made, or not heard. It is unknown if terrain shielding contributed to these events.

ATSB comment. The ATSB notes that it is reported that traffic at Gympie ALA is increasing and therefore exposure to the risk presented in this report is increasing. Despite the fact that both pilots made all the required radio calls for their planned operation, a runway conflict occurred. There is currently no reference to the potential for terrain shielding of radio calls in the Gympie ALA Enroute Supplement Australia entry.
Safety action. The ATSB has been advised of the following proactive safety action in response to this occurrence.

- *RV-7 pilot.* As a result of this occurrence, the pilot of the RV-7 has advised the ATSB that they would introduce a radio check broadcast, when circumstances permit, during their start checks to verify their transmission volume and readability.
- *Aerodrome Operator.* As a result of this occurrence, the Gympie Aerodrome Operator has advised the ATSB that they intend to add a note to the Gympie entry in the Enroute Supplement Australia, under 'Additional Information', to advise pilots that poor radio propagation between aircraft operating on the ground at opposite ends of the main runway may be experienced.

Safety message. A potential accident was avoided by the actions of both pilots who responded to the presence of the other aircraft by braking and veering to the right. Rather than continuing their flights with the assumption the other made a mistake, they performed a radio check with each other to verify there was no fault with their respective aircraft radios.

Date	28-Aug-2016	Region	GQ	SOAR Report Nbr	S-0845		
Level 1	Operational	Level 2	Airframe	Level 3	Landing gear/Indication		
A/C Model 1	Twin Astir	A/C Model 2					
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	51
The pilot reported difficulty extending the undercarriage but stated that it locked down securely. Shortly after touchdown the undercarriage collapsed. Investigation found the teeth on the cogs activated by the undercarriage extension lever were chipped and broken which made the undercarriage difficult to extend and retract. This prevented the wheel from fully extending, thereby preventing the Bowden cable from securely positioning the locking lever.							

Date	3-Sep-2016	Region	WAGA	SOAR Report Nbr	S-0791		
Level 1	Consequential Events	Level 2	Low Circuit	Level 3	Low Circuit		
A/C Model 1	DG-1000S	A/C Model 2					
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	44
The pilot was conducting an air experience flight in pleasant conditions. Upon returning to land, the pilot approached the circuit joining area slightly higher than necessary and elected to conduct an orbit to the South of the airfield to lose height. During the orbit the pilot noticed a powered aircraft backtracking the operational runway (RWY 16). Once the orbit was completed the pilot joined the downwind leg further out and lower than normal. The pilot was now uneasy with the glider's position and modified the circuit by moving closer in, and then completed an uneventful landing off a short final approach onto the cross-strip (RWY 26). The pilot displayed sound airmanship by landing on an alternative runway rather than attempting to land back at the launch point.							

Date	8-Sep-2016	Region	SAGA	SOAR Report Nbr	S-0786		
Level 1	Operational	Level 2	Miscellaneous	Level 3	Rope break/Weak link failure		
A/C Model 1	DG-500 Elan Orion	A/C Model 2	PA-25-235				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	73

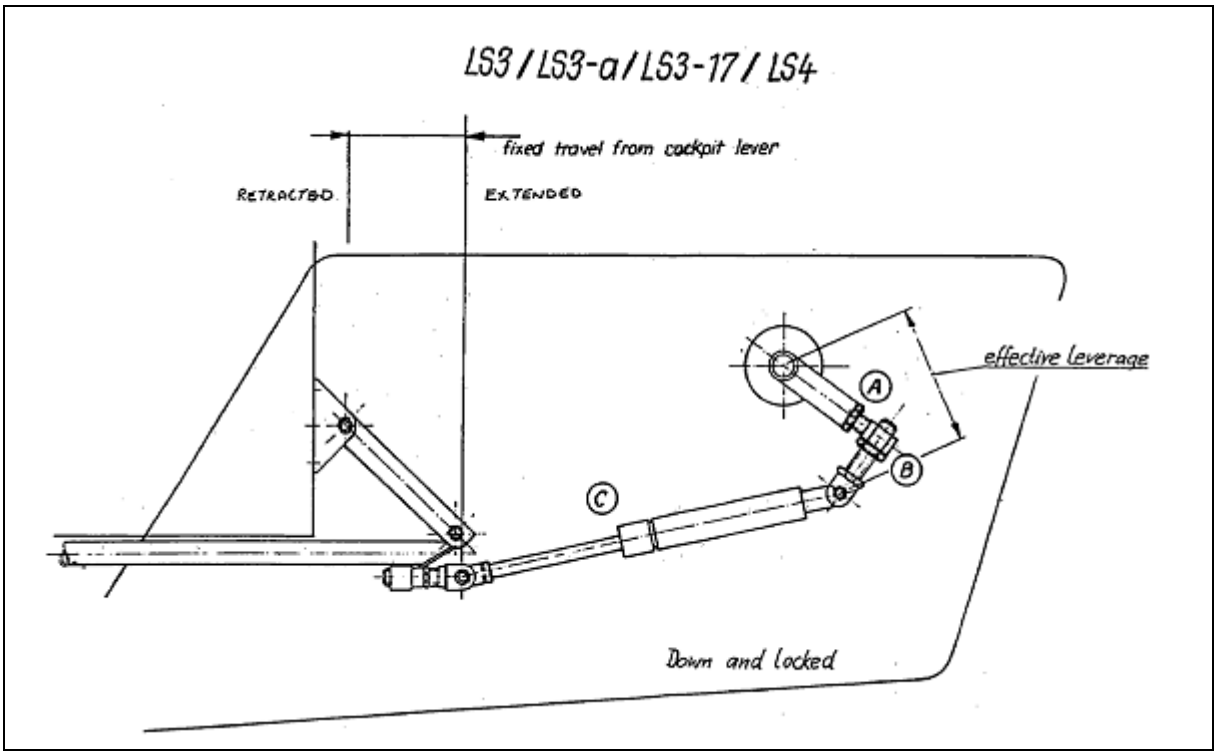
The tow plane had taken up slack and just started rolling when the weak link came adrift the tow rope. This occurred on the eighth tow of the day, and the same tow rope had been used all day. At the start of the day the weak link was swapped from one end of the tow rope to the other, and secured with a bowline knot. It is thought the knot was inadequately tied and came undone during the course of the day.

Date	16-Sep-2016	Region	GQ	SOAR Report Nbr	S-0880		
Level 1	Technical	Level 2	Systems	Level 3	Avionics/Flight instruments		
A/C Model 1	H 36 Dimona	A/C Model 2	EMB-135LR				
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	

The pilot was flying a touring motor glider from Gayndah, Qld. After initially heading South, the pilot turned east around Kingaroy and then flew along the western edge of Moreton and Stradbroke islands at 3500ft. The pilot then turned west and headed inland of gold coast. The aircraft's transponder was out of calibration and was not tuned on. The powered sailplane pilot was contacted by Air Traffic Control (ATC) and asked to turn on the transponder. ATC detected an unusual transponder altitude from the aircraft, resulting in a short term conflict alert. ATC asked the pilot to stop squawking mode 'C' and the pilot complied. The pilot asked for a climb to 3000ft in the 2500 ft zone due to low cloud using mode 'A' only. ATC cleared the pilot to track direct through the Gold Coast CTA as they had the aircraft visual.

Date	17-Sep-2016	Region	GQ	SOAR Report Nbr	S-0779		
Level 1	Operational	Level 2	Airframe	Level 3	Landing gear/Indication		
A/C Model 1	LS 3	A/C Model 2					
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	49

Shortly after releasing from tow the pilot noted, by the excess noise, that one or both of the gear doors had not closed. Aware the springs had recently been replaced, the pilot suspected that one had let go. About an hour into the cross country flight and while the LS-3 was in a thermal, a pilot in a lower glider radioed the pilot of the LS-3 to advise that that the LS-3's undercarriage doors were open and that it looked like the wheel was half down. The LS-3 pilot thought it was only the undercarriage doors and recycled the undercarriage. Upon completion of the flight and shortly after touching down the undercarriage collapsed. Subsequent inspection revealed the over centre gas strut had had lost pressure. The pilot advised that Annual Inspection during March identified the strut to be in good order and suspects that the damage may have occurred the previous day during an outlanding. The day earlier the pilot attempted to land short in a paddock to minimise the ground roll. The glider touched down heavier than normal in soft ground and quickly came to a halt. It is possible the forces on the undercarriage during this outlanding may have overloaded the system. GFA AD 233, which relates to LS-1 to LS-4 type gliders, requires that a thorough inspection of the undercarriage system be undertaken after any landing the pilot believes may have excessively loaded the structure. However, because the shock absorbing nature of this type of undercarriage system is such that the pilot may not feel that the system has been overloaded, it is likely that some landings heavy enough to overload the system may go unnoticed.



Date	17-Sep-2016	Region	SAGA	SOAR Report Nbr	S-0782
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3	Aircraft preparation
A/C Model 1	Astir CS	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Ground Ops	PIC Age	

During a recent Operational Safety Audit it was observed that the aircraft had been flown a total of 4 days after the Maintenance Release had expired. A number of pilots had signed off the Daily Inspection without taking note of the expiry date and cleared the aircraft for flight when it was no longer airworthy. The Daily Inspector Handbook notes that the first step in the process is to check that the Maintenance Release is valid, and no Major Defects are recorded which prevent flight. Remember, a good Daily Inspection helps in avoiding incidents and accidents, by finding faults in or issues with the glider before it flies. It was reported that the club usually conducts its aircraft maintenance activities in the second half of each year. In the case of this aircraft however, maintenance had been completed earlier than scheduled in conjunction with an airworthiness refresher course last year. It is possible that confirmation bias may also have been a factor.

Date	18-Sep-2016	Region	GQ	SOAR Report Nbr	S-0849
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3	Other Powerplant/Propulsion Issues
A/C Model 1	ASK-21Mi	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	

After retracting the propeller the pilot observed the propeller retracted light displayed, released the propeller retraction switch and then turned off the Power Plant Main Switch. After landing it was noticed that the propeller was not in the retracted position. The propeller retraction switch in the front seat was found to be faulty and, instead of staying in the neutral position, the spring tension returned it to the extend position.

Date	24-Sep-2016	Region	NSWGA	SOAR Report Nbr	S-0793
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	Grob G 103 Twin II	A/C Model 2	LS 6-c		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	54

At this regional gliding site runway 20 intersects near the threshold of runway 32. Subject to the prevailing winds, glider launches are usually conducted on runway 32, and gliders will land on runway 20 with the aim of rolling to a stop just adjacent to the threshold of runway 32. At around 15:05 on 29 September a Grob 103 had just touched down on runway 20 and was rolling towards the threshold of runway 32 when the instructor noticed an LS6 glider on a very late final approach for a landing on runway 32 grass. In the knowledge that the Grob's wheel brake was ineffective and to avoid a potential collision, the instructor put the Grob 103 into a slow ground loop and pulled-up short. Investigation revealed that the LS6 pilot made appropriate circuit calls but an unserviceable radio in the Grob 103 led to a breakdown in situational awareness (radio since repaired).

Date	24-Sep-2016	Region	WAGA	SOAR Report Nbr	S-0787
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Collision
A/C Model 1	Pilatus B4-PC11	A/C Model 2	Piper PA-25-180/S		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	

The pilot of the Pilatus was fixated on getting onto the runway and did not sight a tow plane established on final. The glider pilot turned final in front of the tow plane and in the tow pilot's blind spot. The ground crew broadcast on the CTAF for the tow plane to go around and the tow pilot complied. The tow rope struck the glider and wrapped around the tailplane but pulled free. Both aircraft landed safely. This was a very close call and highlights the importance of radio for alerted see-and-avoid, and for pilots to maintain good situational awareness. Following this accident the club introduced a requirement for aircraft to sequence into the circuit to improve situational awareness. The incident also reveals how fixation causes all cognitive capacity to be focused on the aiming point to the detriment of situational awareness and good lookout.

Date	25-Sep-2016	Region	GQ	SOAR Report Nbr	S-0817
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision
A/C Model 1	SKYFOX Gazelle ca22	A/C Model 2	Twin Astir		
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	

A glider turned final in front of a powered aircraft and the powered aircraft initiated a 'go-around'. The powered aircraft was not monitoring the CTAF and had not heard broadcasts from the glider that would have alerted to its presence.

Date	28-Sep-2016	Region	GQ	SOAR Report Nbr	S-0788
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing
A/C Model 1	Nimbus 2	A/C Model 2			
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	

The pilot was launched by winch in nil wind conditions and found the thermals to be broken and difficult to centre. After some futile attempts to climb and stay airborne, the pilot elected to join circuit and land. The pilot lowered the undercarriage and joined downwind for a landing on the short cross-strip. The pilot observed the windsock has partially filled and was hanging at an angle of about 45 degrees, indicating the wind had picked up to about 10 knots. The pilot completed the pre landing check and set landing flap. During the base leg the pilot noticed the wind sock had gone limp, then the glider was turned onto final

approach at a height of about 500ft AGL. The pilot recognised the glider was high and so extended full airbrake and employed sideslip in order to lose height. As the pilot recovered from the sideslip at about 100 ft AGL, he immediately questioned whether the undercarriage was down and despite looking at the undercarriage lever to confirm it was in the correct position, the pilot retracted the undercarriage (confirmation bias). The pilot then realised the error but it was too late to do anything about it and the glider landed with the wheel up and doors closed. The aircraft was undamaged save for some minor abrasion to the painted surfaces. The pilot commented: *"I attended your Safety lecture at Gympie two weeks ago and here I am having to report on a SOAR (just done) that I have had the very thing you were stressing as the thing which is mostly unexplained as a happening, 'A Wheels Up Landing'... After your lecture and particularly the description of that Nimbus 2 Accident near Benalla, I have become very conscious of the 'wheels Up' and indeed have spoken about it to some of the Members….. When I arrived over the fence a little bit over speed and a little bit high my concern was a runway incursion, and at that time then suddenly the question came into my head "Where's the Gear" and even though I had done a FUST on downwind after previously lowering the gear. I switched hands and raised the gear and the Nimbus was too low at that stage for a recovery and the Nimbus settled very slowly onto the ground as the speed decayed. It is not a nice feeling. Conscious of a Wheels Up? Yes. Thinking too much about it? Probably Yes."*

Date	1-Oct-2016	Region	GQ	SOAR Report Nbr	S-0873
Level 1	Operational	Level 2	Miscellaneous	Level 3	Other Miscellaneous
A/C Model 1	PW-6U	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	47

During a visit to the Gliding Club by the coach of the national aerobatic team of Poland, aerobatic manoeuvres were flown in the club's PW-6 outside those approved in the Aircraft Flight Manual; specifically in short episodes of inverted flight. Following discussion with the aircraft manufacturer, it was determined that the aircraft had been built and flight-tested for these manoeuvres (and others in the unlimited aerobatic category), but approval for inclusion in the type certificate was not sought from European authorities at the time as the manufacturer did not want to incur additional certification costs. No adverse consequences for airframe or controls were noted that could be traced back to these flights. This incident highlights the importance of pilots making themselves familiar with the aircraft flight manual and understanding the flight limitations imposed. Pilots also need to understand the category under which the particular aircraft has been certified, as in Australia there are some aircraft types that have been certified in both the utility category (limited aerobatic) and aerobatic category (unlimited aerobatics). In such cases pilots are restricted to aerobatics relevant to the particular category under which the aircraft has been certified.

Date	3-Oct-2016	Region	GQ	SOAR Report Nbr	S-0869
Level 1	Operational	Level 2	Airframe	Level 3	Other Airframe Issues
A/C Model 1	ASW 20	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	41

On final glide at approximately 115 knots IAS, the pilot felt vibration in the flap control circuit. The pilot decreased speed and the vibration ceased. Subsequent investigation identified freeplay in the flap control circuit that caused a low frequency oscillation of the aileron-flap circuit. This is a known issue for ASW 20 gliders, where over time freeplay develops in the aileron/flap circuit. At each Form 2 inspection control freeplay is to be checked and if backlash in control circuits exceeds tolerances or if high frequency oscillations of aileron control circuit are observed, then maintenance in terms of AD 196 should be carried out.

Date	7-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0792

Level 1	Operational	Level 2	Aircraft Control		Level 3	Wheels up landing	
A/C Model 1		ASW 28		A/C Model 2			
Injury	Nil	Damage	Minor	Phase	Outlanding	PIC Age	63

The experienced pilot was competing in the Queensland State Championships. During the course of the cross-country flight an outlanding became inevitable after an unsuccessful search for lift and the pilot turned back towards a suitable paddock in order to land into wind. The pilot had not configured the aircraft for landing and did not complete the pre-landing check list. The aircraft landed with the undercarriage retracted and suffered minor damage. The flight logger trace revealed the pilot left the decision to break off the flight and commit to a landing late and at low level (600ft AGL). Landing mishaps commonly occur to pilots who become overloaded when close to the ground. Workload management can be eased by proper flight management which includes attending to pre-landing tasks (like lowering the undercarriage) early rather than later in the circuit. Refer also OSB 01/14 'Circuit and Landing Advice'.

Date	8-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0794
Level 1	Operational	Level 2	Airframe	Level 3	Landing gear/Indication

A/C Model 1		Astir CS		A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	71
After an uneventful flight, the pilot attempted to lower the undercarriage before joining circuit only to find that it was jammed in the retracted position. The pilots efforts to lower the undercarriage during the circuit proved unsuccessful and a safe landing was conducted on the grass runway with the wheel retracted. Apart from some cosmetic scratching, the glider was not damaged. Inspection revealed the mudguard on the main wheel engaged on the edge of the joint in the wheel housing fairing, effectively forming a latch preventing the wheel from being lowered. A new undercarriage and mudguard was fitted nine months earlier and the aircraft had flown on 20 occasions without incident. It was determined that there was little clearance between the mudguard and the top of the wheel housing, which allowed the mudguard to contact and distort the structure. Adjustments have been made to prevent recurrence.							

Date	8-Oct-2016	Region	VSA	SOAR Report Nbr	S-0796
Level 1	Operational	Level 2	Ground Operations	Level 3	Taxiing collision/near collision

A/C Model 1		Astir CS		A/C Model 2			
Injury	Nil	Damage	Substantial	Phase	Ground Ops	PIC Age	74
While being towed to the flight line at walking pace, the glider's left wing collided with a small tree. Although the driver stopped immediately, the tail of the glider had already jumped off the towing bar resulting in the tailplane crashing against the rear of the vehicle (SUV). The left aileron suffered damage from the collision with the tree, and the vertical stabiliser was substantially damaged by twisting forces when the tailplane hit the vehicle. It was later determined that the driver was towing down the airfield's narrow perimeter track, having moved off the runway to stay clear of a tractor mowing the runway. The driver did not pay adequate attention to obstacle clearance and may have been distracted by conversation with a passenger in the vehicle. This incident highlights the need to maintain situational awareness, even during the mundane task of towing a glider.							

Date	8-Oct-2016	Region	SAGA	SOAR Report Nbr	S-0811

Level 1	Operational	Level 2	Fuel Related		Level 3	Leaking or Venting	
A/C Model 1		HK 36 TTC		A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	50

The pilot commenced the take-off roll and upon applying full power observed the RPM and manifold pressure was within the boost range. Once the glider was airborne the engine began to run rough. The pilot lowered the nose and reduced the power while assessing options for landing straight ahead. When the power was reduced the engine ran smoothly and the pilot determined through experimentation that the engine only ran rough when in the boost range. As it is usual to only use the boost during the initial take-off, the pilot elected to continue the climb to 4,500 AGL, at which point the engine was shut down and the flight was conducted as a glider. Upon landing the engine started normally and the glider was taxied clear of the runway. Investigation revealed a major fuel leak from the left-hand carburettor whenever the boost range was used. The leak was at the gasket between the bowl and body of the carburettor. Fuel overflowed the carburettor tray and ran over the top of the metal exhaust shroud. The cause of the leak was determined to be from insufficient tightening of the lock wire that allowed a nut at the bottom of the carburettor to loosen approx. 1/4 turn. Retightening and lock wiring the nut resolved the problem.

Date	10-Oct-2016	Region	NSWGA		SOAR Report Nbr	S-0827	
Level 1	Operational	Level 2	Miscellaneous		Level 3	Other Miscellaneous	
A/C Model 1		Ventus-2c		A/C Model 2		Piper PA-25	
Injury	Nil	Damage	Nil	Phase	Outlanding	PIC Age	49

The pilot was competing in the 55th Australian Multiclass Nationals flying in 18M class. The flight was the first practice day and the task was an AAT with the last turn point being a 2km ring set approximately 10 kms south of the aerodrome to facilitate an orderly return. The pilot had been working between 2000ft AGL and 4300ft AGL with lift averaging just under 3 knots. Conditions became soft on the third leg and, after a total flight time of just under three hours an outlanding became inevitable. The flight logger trace shows that the pilot continued to work weak lift below 1,000ft AGL, and after about three minutes of circling broke off the flight at about 600ft AGL and entered the downwind leg of a circuit to a paddock at about 400ft AGL. The pilot completed a successful landing and called for an aerotow retrieve. The glider pilot informed the tow pilot that the paddock was 700M long, firm with a SWER line 1/4 into its length crossing at right angles to the approach path. Upon arrival at the paddock the tow pilot observed the paddock was much shorter, about 550M but deduced an aerotow retrieve could be accomplished safely. The tow pilot approached over the SWER line and had about 300M to bring the aircraft to a halt. After towing the glider back to the furthermost diagonal corner, the glider pilot admitted that he had since paced out the paddock and found it was only 550M. The glider was positioned under and beyond the power line and a successful take off and retrieve was accomplished. The GFA Aerotowing Manual has this to say about paddock retrieves: *"Glider pilots have little interest in a trailer retrieve if an aerotow is available. Retrieve crews feel much the same way. When you speak to the glider pilot on the phone or radio prior to setting out on the retrieve, you may find quite a lot of pressure applied to get you to come and pick up the glider. For this reason you should regard telephone or radio information about paddock quality as, at best optimistic and at worst downright misleading. Make sure the glider pilot understands that, should you agree to go and pick up the glider, it is your absolute right to refuse to land if you don't like what you see from the air when you arrive overhead. Do not feel pressured into attempting a task if you are not satisfied it is safe."*

Date	10-Oct-2016	Region	VSA	SOAR Report Nbr		S-0790	
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3	Aircraft preparation		
A/C Model 1		ASK-21Mi		A/C Model 2			
Injury	Minor	Damage	Minor	Phase	Ground Ops	PIC Age	63
While manoeuvring the port wing for rigging on the wing stand, the wing was caught by a sudden gust of wind. As a result the wing over balanced on the wing stand resulting in a controlled impact with the bitumen. The aircraft suffered superficial damage and first aid was administered to the crew. The aircraft was subsequently rigged and cleared for flight. The club has reviewed its rigging procedures and members involved were retrained.							

Date	10-Oct-2016	Region	NSWGA	SOAR Report Nbr		S-0799	
Level 1	Operational	Level 2	Crew and Cabin Safety	Level 3	Flight crew incapacitation		
A/C Model 1		LS8-18		A/C Model 2			
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	58
GFA Field Investigation. At around 15:30 Eastern Standard Time on 10 October 2016, while on final approach into a paddock and at a height of about 200ft AGL, the pilot blacked-out. The aircraft then commenced a gentle descending right-hand turn and collided with trees. The aircraft was substantially							

damaged and the pilot severely injured. The accident was witnessed by a local farmer, who immediately called emergency services and administered first aid. The pilot was airlifted to hospital suffering serious injuries.

Pilot Information

The command pilot was an experienced competition pilot and coach who was in current flying practice. At the time of the accident, the command pilot held a Glider Pilot Certificate endorsed for Independent Operations and the Carriage of Private Passengers. The pilot had accumulated 319 glider flights for over 600 hours, of which 150 hours were on type.

Medical information

The command pilot's medical declaration was dated 1 September 2016, in which he declared that he was not suffering from any physical condition that would preclude him from operating a glider as pilot in command. The declaration also included an undertaking that in the event of him contracting any physical condition precluding him from operating a glider as pilot in command, that he would cease flying in that capacity while the condition makes it unsafe for him to do so. The pilot advised that on the weekend prior to the flight they had been hospitalised after suffering from dehydration.

Flight data recorder

The pilot carried an LxNav Nano3 flight recorder with an integrated 56-channel GPS receiver and antenna. A valid log was downloaded from the device for analysis.

Video Recording Devices

The pilot had a GoPro type camera fitted to the coaming above the instrument panel facing outwards and recorded the flight in High Definition video with sound.

Meteorology

The weather at the time of the accident was good visual meteorological conditions (VMC), with blue skies and weak climbs to 4,500ft AMSL. The wind was light and variable. The pilot noted that conditions were hot and humid.

Wind

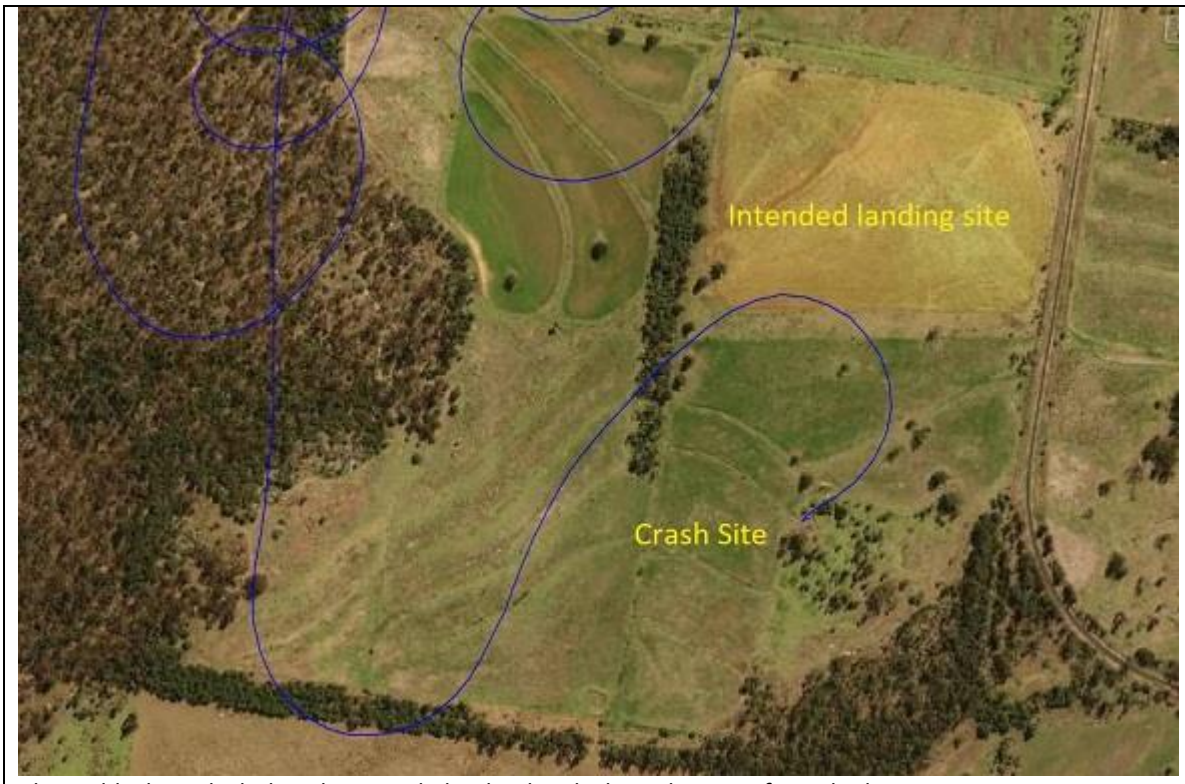
<2750	3000	3500	4000	4250>	[ft]
15.7	31.6	40.5	36.3	11.5	[min]
16°/6	27°/2	12°/3	346°/2	8°/2	[°/kts]

Wind profile with height. Taken from GPS flight recorder.

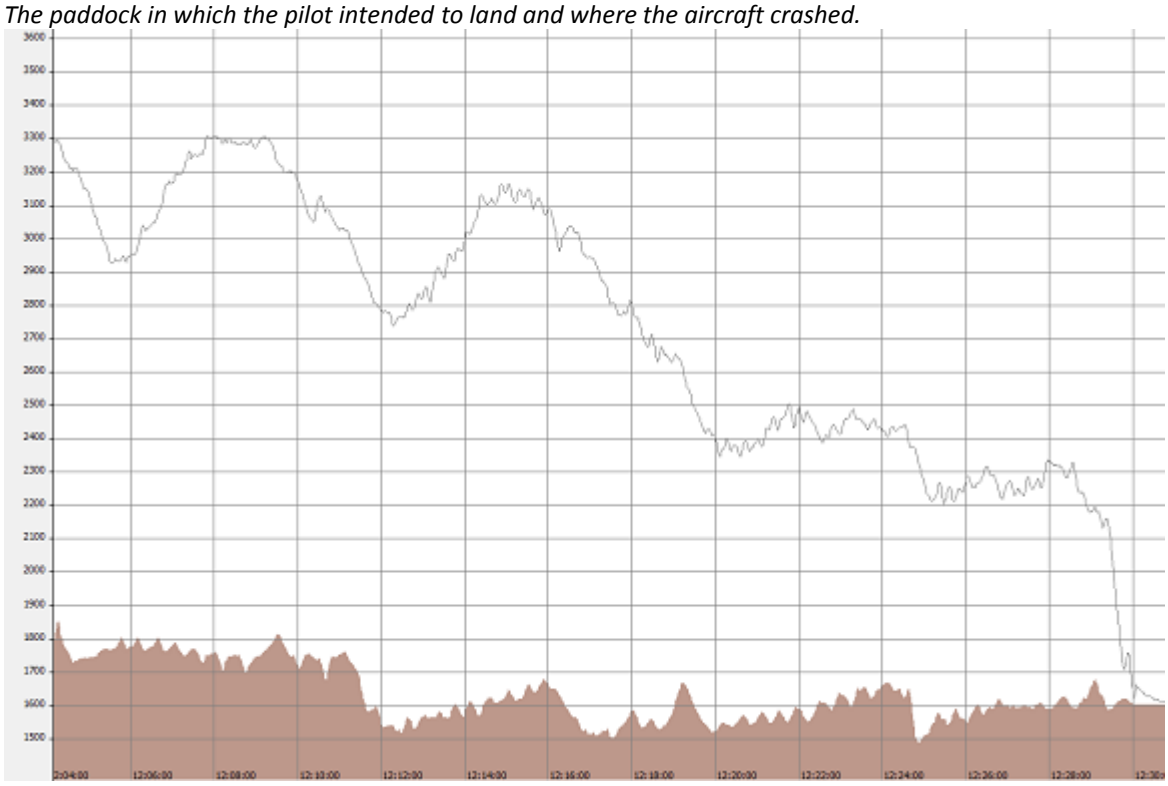
Analysis

Flight

The command pilot was competing in the 55th Australian Multiclass Nationals being held at Kingaroy, Qld during the period 10 to 21 October 2016 flying in 18 metre class. The accident occurred on the practice day before the competition started in earnest. The day's task was an Assigned Area Task1 with a 2-hour task time, comprising three cylinders – one of 20km radius, one of 15km radius and one of 10km radius. Task length varied between 157Km and 307km, subject to where the pilot flew within the assigned areas. Weather conditions were fine with blue skies. The pilot launched at 13:11 and released from tow at around 2,000ft AGL. About 30 minutes after launch, and after a couple of weak climbs, the glider attained a height of 3,000ft AGL (4,500 AMSL). The pilot started the task around 14:09 at about 2,500ft AGL, but 40 minutes later the glider had reached a low point of 730ft AGL ((2,500ft AMSL). After 10 minutes working weak lift the glider reached about 2,000ft AGL and the pilot headed on task. Over the next half an hour the pilot flew over some small hills and treed areas looking for lift. For the last 10 minutes of the flight the pilot was working weak lift between 700ft and 900ft AGL in close proximity to landable terrain. A decision to break off the flight was made at a height of about 600ft AGL and the pilot conducted a circuit towards a paddock.



The paddock in which the pilot intended to land and where the aircraft crashed.



Barograph trace of the last 30 minutes of flight.

The flight trace, footage from the video camera and recorded audio revealed the pilot established the glider onto a north-easterly heading to land in a recently cropped paddock. The undercarriage was lowered and

then airbrakes set to manage the glide path. At a height of approximately 200ft AGL the glider pitched-up momentarily and commenced a 30 to 40-degree bank to starboard and continued until the glider struck the upper branches of a tree. There was no attempt by the pilot to roll the wings level or avoid a collision.

Video footage from the cockpit showing the final approach to the selected outlanding paddock (foreground).

Video footage from the cockpit showing the bank angle at time of impact with the marked tree.

Pilot

The pilot was qualified to undertake the flight. While the pilot had been airborne that day for just over two and one-half hours in a high workload environment, they did not believe they were dehydrated of fatigued. However, the pilot had been working at low levels (less than 600ft AGL) for more than 45 minutes prior to the accident in a hot and humid climate with limited ventilation and had suffered a dehydration event the week earlier. Dehydration was identified as a probable causal factor. The pilot had no post-flight recollection

of events in the 10 minutes leading up to the accident.

Wreckage and impact information

The aircraft struck a 10-metre-high box tree at a 30 to 40-degree angle of bank at about 66 knots, breaking off the top third of the tree and coming to rest on the ground.

Examination of the wreckage in situ revealed all flight control surfaces were accounted for at the accident site. While there were multiple overload failures of the flight control system in the fuselage and cockpit areas, control continuity was established. The pilot subsequently confirmed the aircraft was airworthy up until the collision with terrain.

Medical Response

The first responder was the landowner, who was working the farm and saw the accident unfold. The landowner immediately drove to the accident site and observed “the cockpit was completely demolished; however, the rest of the glider was relatively intact with the pilot still strapped in”. The landowner observed that the pilot did not respond when spoken to, and that the pilot’s face was covered in blood and sweat. The landowner was unable to phone emergency services due to a lack of mobile phone coverage and drove home to use the landline. Once at home the landowner contacted emergency services and, together with his wife, returned to the accident site to administer first aid. Upon arrival back at the site the landowner noted “the pilot had got themselves out of the glider and was lying face down beside it”. The landowner’s wife provided comfort to the pilot while the landowner went to the road to direct the emergency services, which arrived shortly after. The pilot was airlifted to hospital approximately 75 minutes after the crash. The pilot suffered substantial and life-threatening injuries in the accident, including:

- 7 broken vertebrae (S3 – T12), muscle and facial damage;
- Broken tailbone;
- Crushed Pudendal nerve and damaged glutes;
- 11 bones cracked across both feet;

- Major degloving on right ankle/foot;
- Lower intestinal ilias; and
- Stressed ribs.

The pilot spent three months in hospital undergoing surgery and rehabilitation. At the time of writing this report the pilot was on the way to making a full recovery.

Findings

The pilot had been airborne for 2.3 hours, operating within a low height band under blue skies on a hot and humid day. The pilot is not certain but mentioned they may have closed the clear view vent to reduce the airflow noise in order to better concentrate on thermalling when at low levels. In such circumstances, the cockpit can become a very warm environment under the sun. It is likely the pilot suffered from heat exhaustion that led to unconsciousness. Heat exhaustion happens when someone becomes dehydrated due to loss of water from exercising or working in poorly ventilated conditions. The dehydration episode the prior weekend may have made the pilot more susceptible to a heat stroke event.

CONCLUSIONS

1. The command pilot was appropriately qualified and medically fit for the flight.
2. The aircraft had a valid Maintenance Release and had been maintained in accordance with relevant requirements.
3. The aircraft was capable of normal operation up until the time of impact with the tree.
4. The command pilot was operating in a high workload environment and while conducting a landing in a paddock fell unconscious.
5. It is likely the pilot suffered from heat exhaustion that led to unconsciousness.
6. As the unconscious pilot relaxed the controls, the glider banked and commenced a turn to the right, which was maintained until the moment of impact with terrain.
7. Video from the cockpit showed the pilot made no attempt to prevent the collision, which further supports the hypothesis that they were unconscious.

Date	11-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0797		
Level 1	Operational	Level 2	Terrain Collisions	Level 3	Ground strike		
A/C Model 1	Ventus-2c			A/C Model 2	N/A		
Injury	Nil	Damage	Substantial	Phase	Outlanding	PIC Age	49

The pilot was competing in the 55th Australian Multiclass Nationals flying in 18M class. The task was a 142.5km polygon, flown in challenging conditions of high winds and a low height band. After covering a task distance of around 80 kms and while working a thermal below four other gliders, an outlanding became inevitable. The aircraft was drifting downwind and the pilot noted several suitable paddocks within range. Another glider had already landed in a ploughed paddock below and when the pilot finally lost contact with the thermal, a decision was made to land in the same ploughed paddock. The pilot elected to land parallel to the contours with a quartering crosswind from the right. Due to high wind (~18 knots) and the potential for mechanical turbulence at low level, the pilot correctly flew the approach faster than normal (at around 75 knots). Touchdown was normal but as the glider slowed and aileron authority was lost, the port wingtip contacted the ground and the glider swung through 130 degrees to the left of the direction of landing. The force of the excursion resulted in the outer wing panel of the port wing breaking off, the outboard end of flaperon was split and the outboard control linkages were bent. The pilot noted that the contours were not as large as anticipated and a landing more into wind and across the contours would have been preferable. Review of the pilot's flight trace revealed the decision to break-off the flight was left late; with the pilot abandoning the thermal at about 700 ft AGL. The pilot joined circuit directly onto a base leg and opened the airbrakes just prior to turning final at about 250 ft AGL. The landing was witnessed by the pilot of the glider that had landed earlier. The witness noted that upon touch down the main wheel immediately sank into the soft surface of the paddock; and the glider pitched forward to slide on the lower forward fuselage. It was

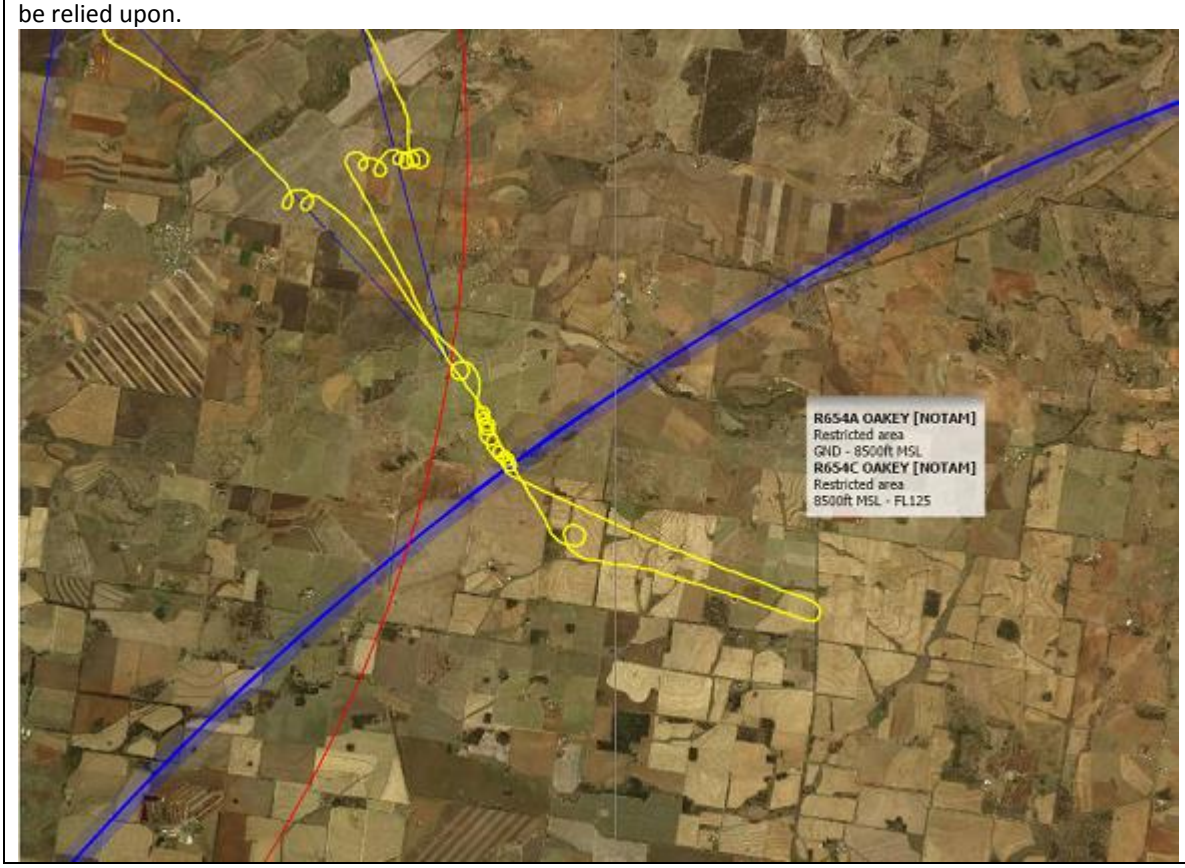
later disclosed that water ballast had not been dumped. While some gliders are designed to withstand a landing back at the airfield with water ballast on board it is always wise to land with empty water ballast tanks, especially when outlanding where surface conditions are unknown. Lateral control suffers when the wings are full of water and usually results in loss of aileron control on the ground run at a higher speed than would normally be the case. Landing with water ballast also places greater stress on the glider, and if the landing area is rough serious damage can be done as evidenced here. When a pilot is getting low and there is a prospect of having to land, then it is wise to dump the water ballast to avoid the higher rate of descent that comes with the glider being heavy. This will give the pilot the extra time needed to find a thermal and avoid the potential for damage during an outlanding. Causal factors include:

- Holding onto the water ballast for too long;
- Late decision to break-off the flight;
- Not configuring the aircraft for landing by dumping water ballast (OSB 01/14 'Circuit and Landing Advice' refers);
- Flying a modified circuit that prevented a more thorough inspection of the paddock;
- Strong crosswind component (~12 knots at 40 degrees);
- Soft surface of the paddock; and
- Landing with water ballast.

Date	11-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0803		
Level 1	Airspace	Level 2	Airspace Infringement	Level 3	Airspace Infringement		
A/C Model 1	Duo Discus	A/C Model 2					
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	50

The pilot was competing in the 55th Australian Multiclass Nationals flying in Open class and flying a three turn point Assigned Area Task. On the second leg of the task the pilot flew beyond the back of the 20KM circle and into restricted airspace by approximately 5 kms. The breach was identified during scoring and the pilot suffered a scoring penalty and was later counselled by the Competition Safety Officer. The pilot noted that the flight logger airspace file was outdated. The pilot was flying in the company of another glider that also infringed airspace while using outdated logger airspace files. When flying near airspace boundaries pilots must ensure they use sensible tolerances to airspace. AIP ENR 1.1, paragraph 19.12 states: *"For aircraft operating in close proximity to an airspace boundary where there is a risk of an airspace*

infringement, the pilot in command should consider obtaining a clearance to enter the airspace or altering track to remain well clear." Pilots should always navigate using CASA approved data and charts. Airspace files provided by competition organisers or downloadable from the internet are unapproved and should not be relied upon.



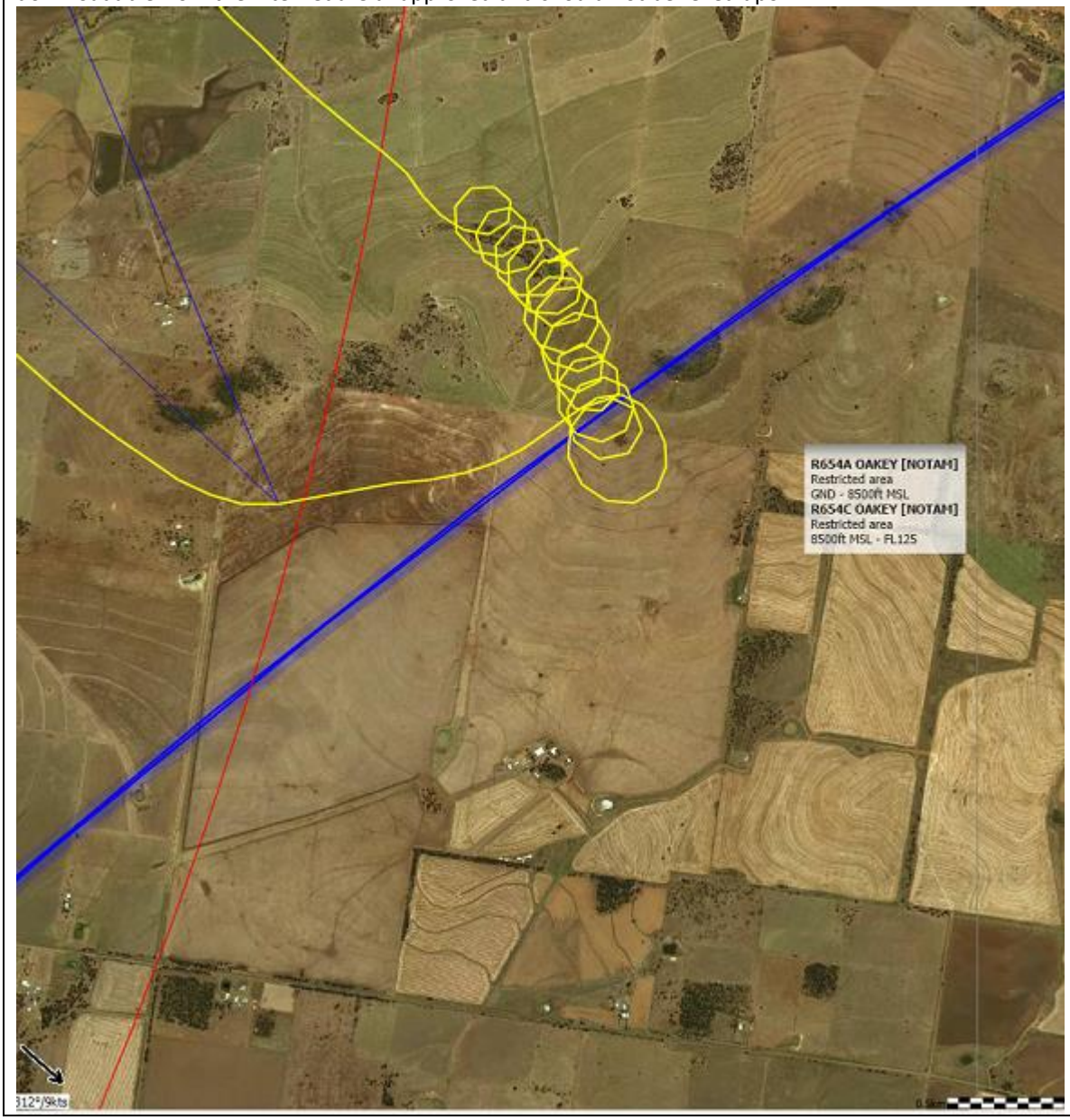
Date	12-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0798		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing		
A/C Model 1	Pilatus B4-PC11AF	A/C Model 2					
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	63

The experienced pilot had been soaring locally and after about 90 minutes was at circuit joining height. The pilot lowered the undercarriage for landing and joined the circuit. Shortly after entering downwind and at a height of about 1,000ft AGL the aircraft flew through lift and climbed away. Approximately 30 minutes later the pilot re-joined circuit and mistakenly retracted the undercarriage. The glider landed with the gear retracted and suffered minor damage to the undercarriage doors. A visual inspection to confirm the undercarriage was in the down position was not made. OSB 01/14 'Circuit & Landing Advice' confirms that the pre-landing checklist is a 'check' and not an 'action' list. The undercarriage check should verify the undercarriage lever is matched to the lowered position on the placard.

Date	12-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0800		
Level 1	Airspace	Level 2	Airspace Infringement	Level 3	Airspace Infringement		
A/C Model 1	JS1 B	A/C Model 2					
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	76

The pilot was competing in the 55th Australian Multiclass Nationals flying in 18M class and flying a three

turn point Assigned Area Task. On the second leg of the task the pilot flew to the back of the 20KM circle and in close proximity to restricted airspace. The pilot took a thermal about half a kilometre outside the airspace boundary but the glider drifted 300 metres into the restricted airspace. The breach was identified during scoring and the pilot suffered a scoring penalty and was later counselled by the Competition Safety Officer. The pilot noted that the airspace file he was using was out of date and so no warning was given by the navigational instrument. When flying near airspace boundaries pilots must ensure they use sensible tolerances to airspace. AIP ENR 1.1, paragraph 19.12 states: *"For aircraft operating in close proximity to an airspace boundary where there is a risk of an airspace infringement, the pilot in command should consider obtaining a clearance to enter the airspace or altering track to remain well clear."* Pilots should always navigate using CASA approved data and charts. Airspace files provided by competition organisers or downloadable from the internet are unapproved and should not be relied upon.



Date	12-Oct-2016	Region	WAGA	SOAR Report Nbr		S-0795	
Level 1	Environment	Level 2	Wildlife	Level 3		Birdstrike	
A/C Model 1		Hornet		A/C Model 2			
Injury	Minor	Damage	Substantial	Phase	In-Flight	PIC Age	68

During a cross-country flight, and while in the cruise at about 3,800ft some 50kms from home, the glider was hit by a Wedge-tailed Eagle from the 2 o'clock high position. The pilot did not sight the bird until immediately before impact. The eagle hit the windscreen frame and then rotated through starboard side of the canopy. The bird fell into the pilot's lap and was quickly jettisoned overboard through the gaping hole in the canopy (the pilot was unsure the bird was dead). The pilot, now bleeding from a cut above the right eye, gave a 'mayday' call on the gliding frequency that was acknowledged by the gliding base. With the blood flow stemmed by a handkerchief and the glider handling normally, the pilot took a climb in a thermal to ensure the aircraft could glide to a nearby aerodrome. The club implemented their Emergency Response Plan and alerted emergency services, who were immediately dispatched to the remote aerodrome. The police and ambulance arrived shortly after the pilot landed. The pilot was transported to the local hospital for clean-up, bandaging and observation. The pilot noted that he did not suffer from shock until after he landed. Although birds and glider pilots often share the same thermal and can operate near each other with relative safety, birds can and do occasionally come into contact with a glider. While it is uncommon that a bird strike causes any harm to aircraft crew, many result in damage to aircraft. Wedge-tailed Eagles are territorial and are known to defend around their nest sites from other Wedge-tailed Eagles and the occasional model airplane, hang glider, glider, fixed-wing aircraft and helicopter.

Date	15-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0801

Level 1	Operational	Level 2	Ground Operations	Level 3	Taxiing collision/near collision

A/C Model 1		RF 5B Sperber		A/C Model 2			
Injury	Nil	Damage	Substantial	Phase	Ground Ops	PIC Age	76

The owner towed the aircraft from its hangar to the tug hangar in order to clean oil residue from the bottom surfaces. The tow was paused when progress to desired point was blocked, and the owner got out of the vehicle to interact with other members. Sometime later after completing another task the owner got back into the car and drove off with the aircraft still attached. The aircraft wings collided with hangar door and suffered substantial damage. The pilot noted that the interruption and re-tasking led to a change in priorities, and upon completion of the secondary task the owner had forgotten that the aircraft was still attached to the car and that the primary task had not been completed. Interruptions and distractions are a significant threat facing pilots, and the omission of an action or an inappropriate action is the most frequent causal factor in incidents and accidents. Interruptions and distractions occur frequently, and while some cannot be avoided, most can be minimised or eliminated (through training, adoption of effective procedures, discipline and the use of good judgment). The following aspects should be considered to assess personal exposure, and to develop prevention strategies and lines-of-defence to lessen the effects of interruptions and distractions in all aspects of flying:

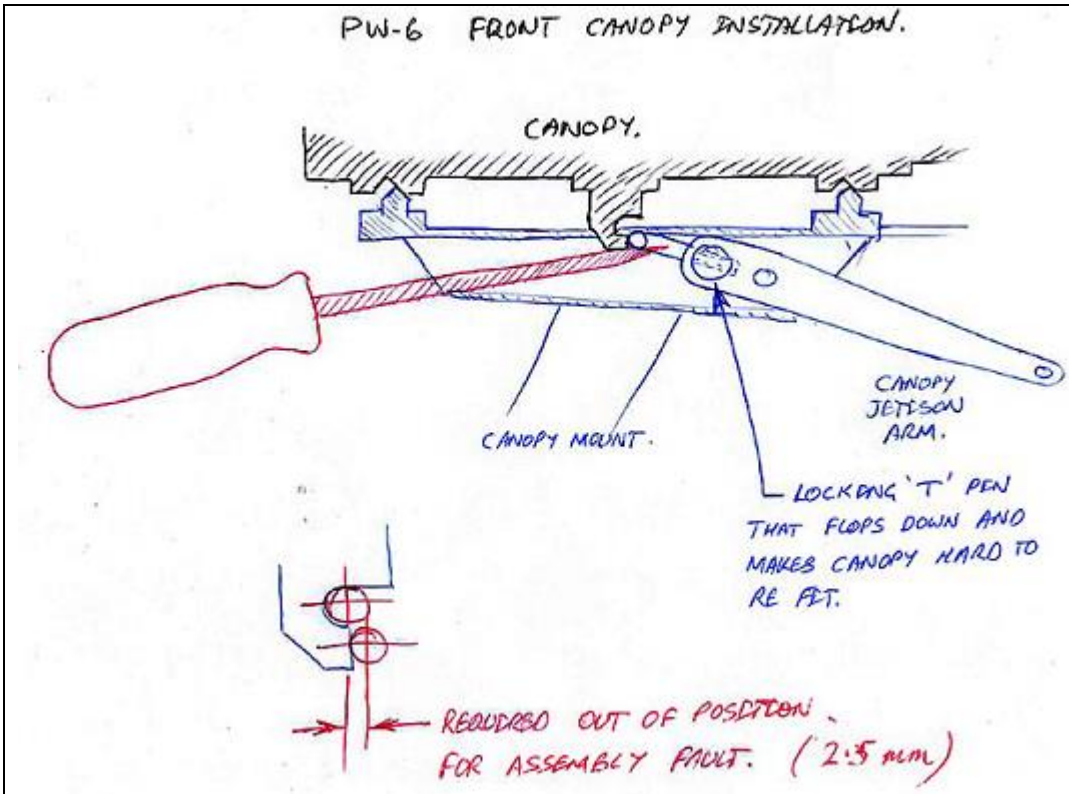
- Recognise the potential sources of interruptions and distractions;
- Understand their effect on the flow of duties;
- Reduce interruptions and distractions;
- Develop prevention strategies and lines-of-defence to minimise the exposure to interruptions and distractions; and
- Develop techniques to lessen the effects of interruptions and distractions.

Date	22-Oct-2016	Region	GQ	SOAR Report Nbr		S-0805	
Level 1	Operational	Level 2	Runway Events	Level 3		Runway incursion	
A/C Model 1	M 200 Foehn			A/C Model 2	Cessna U206G		
Injury	Nil	Damage	Nil	Phase	Ground Ops	PIC Age	69

A glider landed long and was being retrieved by a vehicle. While positioning to cross the operational runway the crew heard a garbled radio transmission but could not see any aircraft on the ground or in circuit. As the towing combination was crossing the runway the crew heard a pilot give radio call that take-off was being aborted due to a glider crossing the runway. Shortly afterwards a Cessna aircraft appeared over a ridge before the threshold of the runway. The pilot of the Cessna reduced power, and then continued the take-off once the glider had cleared the runway. Investigation revealed that the Cessna was conducting parachute operations and the pilot had taxied to the far end of the runway to maximise runway available for take-off. Aircraft positioned at the far end of the runway are not completely visible from the opposite end due a ridge in the runway surface near the threshold. This lack of visual identification and the absence of a clear radio call led the glider crew to believe there was no impending threat. The command pilot of the glider later spoke with the Cessna pilot. The Gliding Club CFI reinforced to the members the importance of effective lookout and radio procedures when traversing any part of the airfield.

Date	23-Oct-2016	Region	GQ	SOAR Report Nbr		S-0809	
Level 1	Operational	Level 2	Airframe	Level 3		Doors/Canopies	
A/C Model 1	PW-6U			A/C Model 2			
Injury	Nil	Damage	Substantial	Phase	In-Flight	PIC Age	61

While on short final the front canopy departed the aircraft. The landing was completed without further incident. The canopy was secured before takeoff and the emergency release handle was still in stowed position with safety wire intact after landing. Examination of the front canopy attach mechanism after the event led to two conclusions for the canopy departing in flight:
1. When the PW6 canopy is being replaced, the locking T pin may not engage its detent but may foul on the lip, thus displacing the canopy approx. 2.5 mm further aft than it should be. This will result in insufficient depth of engagement of the locking T thereafter (refer diagram).



2. If the three pins which support the canopy frame are not tight, there is a possibility they can move out of alignment if the canopy is rapidly opened or if the aircraft is subject to high frequency vibrations, such as when landing on a rough surface.

Date	23-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0807		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing		
A/C Model 1	Discus b	A/C Model 2					
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	43

The pilot launched with the intention of taking a high tow in order to meet up with a two-seat glider for a photo opportunity. The glider pilot asked the tow pilot to fly East of the airfield but was towed towards the West. The pilot elected to release in lift at about 4,200ft to allow the glider to drift towards the two-seat glider during the climb. Unfortunately, conditions were weak and by the time the aircraft was near the other glider it was at circuit height. There were approximately 5 gliders in the air and the pilot elected to join directly onto a base leg on another runway to avoid conflicting with the traffic. The pilot deployed airbrake to lose height and forgot to conduct the pre-landing checks. The aircraft touched down with the undercarriage retracted and suffered only superficial damage. The pilot noted that fatigue (previous late night), a lack of currency (only two flights in the preceding 90 days), and the non-standard circuit led to increased workload and the breakdown in procedures. For further information, refer to Operational Safety Bulletin 01/14 – Circuit and Landing advice.

Date	23-Oct-2016	Region	SAGA	SOAR Report Nbr	S-0808		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing		
A/C Model 1	Astir CS	A/C Model 2					
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	35

The pilot had just converted to a new glider type, which was the first glider the pilot had flown with a retractable undercarriage. Following a successful conversion flight the pilot embarked on a second flight. After a flight of nearly an hour, the pilot felt fatigued and broke off the flight to join circuit for a landing. The pilot did not configure the aircraft for landing, and during the downwind leg conducted a cursory pre-landing check but did not recognise the undercarriage was still retracted. When the airbrakes were opened during the final approach the undercarriage warning alert activated. Being unfamiliar with the sound of the undercarriage warning and due to radio chatter at the time, the pilot assumed the noise was coming from the radio. The aircraft touched down gently on the runway and suffered only superficial damage to the lower fuselage. The pilot cited fatigue and stress as potential causal factors, including the failure to configure the aircraft for landing and conducting the pre-landing checks superficially and without noticing the details. An additional factor was that the pilot had not been briefed on the undercarriage warning system. The Club CFI and Safety Officer will ensure pilots focus the transition from soaring pilot to landing pilot, and the proper use of check lists as per OSB 01/14 - 'Circuit and Landing advice'.

Date	23-Oct-2016	Region		NSWGA		SOAR Report Nbr		S-0848	
Level 1	Operational		Level 2	Airframe		Level 3		Doors/Canopies	
A/C Model 1		Piper PA-25-235/A1				A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	In-Flight		PIC Age		

Following release of the glider, the tow pilot commenced the descent procedure. While flying the descent at 95 knots, the starboard Perspex hatch unlatched and fell into the open position. The tow pilot reduced speed and conducted a normal circuit and landing. Upon inspection the Perspex hatch was shattered, and the fuselage fabric was punctured. The latch mechanism was inspected and found to be operating correctly. The likely casual factor was that the latch was not in the fully closed position at take-off. It was noted that, depending on the pilot's physical height, the pilot's view of the latch from the left-hand seat can be obstructed by the aircraft roof tubing. It is considered likely that the vibrations during flight allowed the latch to disengage. The club's tow pilots were re-briefed on the importance of pre-take off checks during high-paced towing operations. The window was replaced and the the hole in the fabric was patched, and the aircraft was returned to service.

Date	28-Oct-2016	Region		GQ		SOAR Report Nbr		S-0818	
Level 1	Operational		Level 2	Communications		Level 3		Other Communications Issues	
A/C Model 1		IS-30				A/C Model 2			
Injury	Nil	Damage	Nil	Phase	In-Flight		PIC Age	65	

Upon entering the downwind leg of the circuit the command pilot, who occupied the rear seat, asked the second pilot flying the glider to turn up the volume on the radio. Shortly afterwards a downwind radio call was made, immediately following which the glider was contacted by the pilot of another aircraft (presumed to be an overflying RPT) who advised *"Aircraft transmitting you're on guard".* The command pilot suspected that the frequency on the glider radio had inadvertently been switched to the emergency frequency of 121.5 MHz. Due to challenging conditions, the command pilot decided not to distract the second pilot from the task of flying the circuit by further adjusting the radio and decided not to make further radio calls. Upon landing the command pilot confirmed the active frequency was selected to the emergency frequency and determined that the second pilot had inadvertently toggled the 'Priority' switch located immediately adjacent to the ON/OFF Volume rotary switch when the student leant forward to adjust the volume.

Date	29-Oct-2016	Region		NSWGA		SOAR Report Nbr		S-0812	
Level 1	Operational		Level 2	Terrain Collisions		Level 3		Collision with terrain	

A/C Model 1		Janus B			A/C Model 2		
Injury	Nil	Damage	Nil	Phase	Outlanding	PIC Age	28

The pilot was returning to the home airfield after a cross-country flight from the South-South-East into a 10 knot headwind. The aircraft was below final glide but the pilot had maintained glide to a private airstrip approximately 10km east of the home airfield. No lift was found and the pilot subsequently joined circuit and landed on the private airstrip. The private airstrip was about 14 metres wide and was bounded by tall wheat crop grown to the very edge of the runway. As the glider's wingspan was 18.2 metres, the starboard wing caught a higher section of the crop towards the end of the landing roll resulting in a slow ground loop through 180 degrees. While the wings stayed level, the tail struck the ground before the end of rotation and the tailskid disbonded from the fuselage (as it is designed to do). A subsequent inspection of the airframe revealed no damage.

Date	29-Oct-2016	Region	GQ	SOAR Report Nbr	S-0825
Level 1	Operational	Level 2	Miscellaneous	Level 3	Other Miscellaneous

A/C Model 1		CESSNA 150M			A/C Model 2		
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	52

The tow rope struck a vehicle driving on a public road as the tow plane landed. The Club enacted its Safety Management System and implemented changes that now require tow planes to land further down the airfield to avoid trailing the rope in close proximity to persons, vehicles and gliders.

Date	29-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0826
Level 1	Operational	Level 2	Airframe	Level 3	Doors/Canopies
A/C Model 1	Astir CS	A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	74

During a winch launch and at about 300ft AGL the canopy opened. The pilot immediately released from the launch and landed after a modified circuit with the canopy held closed. The pilot recalled checking that the canopy was locked before the launch by pushing up on the canopy control knob but suspects the locking pin was not fully engaged despite it seeming so. The canopy latch in this aircraft does not always slide fully forward under spring load due to friction in the mechanism and must be firmly pushed forward to ensure it is fully locked. A witness mark has now been placed on the canopy locking mechanism to visually indicate the fully locked position.

Date	29-Oct-2016	Region	NSWGA	SOAR Report Nbr	S-0838
Level 1	Operational	Level 2	Ground Operations	Level 3	Taxiing collision/near collision
A/C Model 1	DG-400	A/C Model 2			
Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	68

A glider was being towed by a vehicle between a tow plane and petrol bowser. The driver was focussed on avoiding the tow plane with one wing when the other wing collided with the petrrol bowser.

Date	3-Nov-2016	Region	NSWGA	SOAR Report Nbr	S-0862
Level 1	Operational	Level 2	Aircraft Control	Level 3	Hard landing
A/C Model 1	Marianne 201B	A/C Model 2			
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	71

The student pilot flew too far downwind and angled back towards the runway to intercept the glideslope. He then flew past the centreline and had to turn more than 90 degrees to get back to and align with it. The pilot arrived on the centreline in an overshoot position and deployed airbrakes but allowed the speed to decay despite prompting by the instructor. The instructor assumed control and closed the airbrakes but was unable to arrest the descent during the round-out and the glider landed heavily. The instructor had not flown with this student for some weeks but had formed the view that the student would be capable of safely managing the flight given their level of experience (20 flights for 5 hours). So prior to flight the student was informed that they would be making all inflight decisions and to talk the instructor through the launch and circuit. However, during the flight it became obvious the student lacked appropriate decision making skills and the instructor had to prompt or provide confirmation. During the final approach the student became overloaded and failed to maintain safe airspeed after deploying the airbrakes. Despite this the instructor continued to prompt down to low level, and left the decision to assume control until too late to arrest the rate of descent and prevent a hard landing. As workload increases, attention cannot be devoted to several tasks at one time, and the student may begin to focus on one item. When the student becomes task saturated, there is no awareness of inputs from various sources so decisions may be made on incomplete information, and the possibility of error increases. Instructors need to recognise this and, if the situation is getting out of hand, take control in plenty of time. The CFI noted that the student pilot's training record lacked detail on some of the pilot's deficiencies and that the club's instructors had conducted very little ab-initio training for many years.

Date	3-Nov-2016	Region	WAGA	SOAR Report Nbr		S-0815	
Level 1	Operational	Level 2	Aircraft Control	Level 3		Wheels up landing	
A/C Model 1		DG-500 Elan Orion		A/C Model 2			
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	84

The flight was to be a short cross-country task where the low hours command pilot was being coached by an experienced pilot in thermal trigger point selection and thermalling techniques. The command pilot, who had an ankle injury, elected to fly from the more comfortable rear seat. When the glider was about 40km north of the home airfield, the command pilot informed the coach that they were feeling unwell and asked to return home. The coach flew most of the way back and asked the command pilot if they would like to conduct the circuit and landing. The command pilot was still unwell and declined. Upon arrival back at the home airfield the coach configured the aircraft for landing and lowered the undercarriage. During the downwind leg the coach conducted a pre-landing check and checked that the undercarriage was down and locked and that the speed was correct. The coach turned base somewhat higher than normal and, although half dive brakes were employed to lose height, the aircraft was still high at the turn onto final approach. The coach applied full airbrakes to bring the glider onto the aiming point, at which time the undercarriage alarm activated. As the coach was busy flying the approach, they asked the command pilot to confirm the undercarriage was down and locked while simultaneously pushing forward on the undercarriage lever. The glider touched down smoothly on the bitumen runway and as the wing lost lift the undercarriage retracted and the glider settled on its fuselage resulting in full thickness abrasion. Subsequent investigation revealed the undercarriage was not properly locked down and that the warning alarm worked as intended. The coach who flew the landing was not familiar with the type and, as they did not expect to do the landing, had not sought a briefing on the aircraft's characteristics. The command pilot was also unfamiliar with the type. This incident highlights the importance of pilots receiving a 'first of type' briefing regardless of their level of flying experience. It should also be noted that it is the responsibility of the pilot of any aircraft, before flight, to acquaint themselves and comply with, any limitations or restrictions imposed on it.

Date	3-Nov-2016	Region	NSWGA	SOAR Report Nbr	S-0813

Level 1	Airspace		Level 2	Aircraft Separation		Level 3	Near collision
A/C Model 1		PA-28			A/C Model 2	KR-03A Puchatek	
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	

A powered aircraft flew down the operational runway on a reciprocal heading at about 300ft AGL and passed about 100ft over a glider on final approach. Efforts by club members to make contact with the powered aircraft to alert it to the landing glider proved fruitless, and its pilot maintained heading as the aircraft flew into the distance. The incident was reported to the ATSB, who were unable to identify the powered aircraft. This airfield is a hot spot for low-level transiting aircraft and in late 2015 the GFA and Club CFI made representations through RAPAC to have the airfield depicted on the charts with appropriate symbology and a CTAF annotated. Changes to the ERC, VTC and VNC were published in the 10 November 2016 AIRAC update cycle.

Date	3-Nov-2016	Region	NSWGA		SOAR Report Nbr	S-0814	
Level 1	Operational	Level 2	Miscellaneous		Level 3	Other Miscellaneous	
A/C Model 1		Pilatus B4-PC11			A/C Model 2		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	73

A winch launch was commenced into a westerly crosswind and the glider pilot applied appropriate correction so as to offset the drift. During the launch the sea breeze came in and the wind changed from a westerly to an easterly. When the pilot released, a section of the rope came down outside the airfield boundary and the 'trace' struck power lines causing a momentary loss of power. As the protection and control systems on the high voltage network re-apply the power after a few seconds in case the fault has gone away (auto reclose), the loss of power was only short term. The Club informed the power company, AusGrid, and a technician subsequently confirmed that no action was necessary.

Date	4-Nov-2016	Region	WAGA		SOAR Report Nbr	S-0829	
Level 1	Operational	Level 2	Runway Events		Level 3	Runway incursion	
A/C Model 1		Piper PA-25-235			A/C Model 2	Jabiru J200	
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	64

The pilot of a RAAus registered powered aircraft occupied the runway for an unreasonable period of time resulting in the gliding club tow plane having to execute a ‘go-around’. Later in the day the same pilot allowed the aircraft to drift off the runway towards the gliding operation during landing. CAR 162 ‘Rules for prevention of collision’ states:
(5) An aircraft in flight, or operating on the ground or water, shall give way to other aircraft landing or on final approach to land.
(9) The pilot in command of an aircraft must give way to another aircraft that is compelled to land.
CAR 163 ‘Operating near other aircraft’ states:
(1) The pilot in command of an aircraft must not fly the aircraft so close to another aircraft as to create a collision hazard.
(2) The pilot in command of an aircraft must not operate the aircraft on the ground in such a manner as to create a hazard to itself or to another aircraft.
The matter was reported to RAAus and the pilot was counselled.

Date	4-Nov-2016	Region	WAGA		SOAR Report Nbr	S-0925	
Level 1	Operational	Level 2	Fuel Related		Level 3	Starvation	
A/C Model 1		Astir CS 77			A/C Model 2	PA-235	
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	65

The tow plane lost power during launch resulting in the glider pilot releasing and taking avoiding action.

Initially the launch proceeded normally and after separation the glider pilot positioned the glider in the normal 'high tow' position. When the glider reached a height of about fifty feet the glider pilot noticed the tow rope slacken slightly and then the tow plane rapidly lost height. The glider pilot immediately released from tow and, sighting the tow plane on the runway directly below the cockpit and slightly to the right, the glider pilot moved well to the right and landed on grass verge. During the landing roll the glider pilot observed the tow plane accelerate past on the left and take off. This launch was the tow pilot's eleventh for the day. During the proceeding launches the tow pilot had been changing the wing fuel tanks from left to right as required to maintain correct fuel balance. Just prior to take-off on the incident flight the tow pilot pushed the fuel select lever to the right-wing fuel tank. Full power was then applied and the tow plane became airborne with the glider on tow. At approximately 30 feet above the ground the tow plane lost power and the tow pilot elected to land on the left-hand grass verge to allow the glider to pass to the right. The tow pilot pushed the fuel select lever to the left-wing tank and the engine surged into life and the tow plane took off and completed a circuit and safe landing. Subsequent inspection revealed the fuel selector mechanism was found to be seized, resulting in the fuel actuator not fully opening when the right-wing tank was selected. The mechanism was cleaned and lubricated, and the aircraft was returned to service.

Date	4-Nov-2016	Region	GQ	SOAR Report Nbr	S-0819		
Level 1	Operational	Level 2	Ground Operations	Level 3	Foreign Object Damage/Debris		
A/C Model 1	Blanik L13 A1	A/C Model 2					
Injury	Nil	Damage	Nil	Phase	Ground Ops	PIC Age	65

During the Daily Inspection a number of coins were discovered on the front cockpit floor. A thorough inspection of the entire cockpit revealed no other foreign objects and that the aircraft was safe for flight. This incident highlights how a good Daily Inspection helps in avoiding incidents and accidents, by finding faults in or issues with the glider before it flies.

Date	5-Nov-2016	Region	SAGA	SOAR Report Nbr	S-0831		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Hard landing		
A/C Model 1	Grob G 109	A/C Model 2					
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	47

The command pilot had flown 3 circuits solo, all with engine off landings. There was a steady 15 knot wind straight down the runway at the time with a defined wind gradient resulting in a 6-8 knot loss of airspeed during the approach. The CFI suggested that the pilot should approach with at least 70 knots airspeed, and that 75 knots would be safer (the usual approach speed is 65 knots). On the fourth flight the pilot flew locally for approximately 45 minutes. The pilot was flying from right hand seat, which required left hand operation of stick and right hand operation of airbrake. The pilot elected an approach speed of 80 knots but by the time of rounding out for the flare the airspeed had reduced to 70 knots. The aircraft touched down at speed and rebounded into the air, and thereafter pilot induced oscillations resulting in three bounces, with probably the third bounce being the hardest, and resulting in serious damage to the undercarriage and the associated fuselage mounting points. The major cause of this accident was an incorrect recovery technique applied after a ballooned landing. The pilot stated that when the aircraft ballooned the stick was pushed forward to get the nose down, rather than lowering the nose to the normal landing attitude and closing the airbrakes as necessary. This mishandling of the controls led to the pilot over-correcting at each bounce until the aircraft came to rest. Compounding matters, the pilot was flying from the right-hand seat and was not in current practice. The pilot stated that although they have about 15-20 hours flying from the right-hand seat as an instructor, fine motor skills and control manipulation are better when flying from the left hand seat. Also, the pilot had only flown a little over two hours in the previous 90 days that included a 54 minute check flight with the CFI two weeks previously. During this flight the pilot flew from the right hand seat and did three landings. The CFI noted that this was obviously insufficient flight time to maintain proficiency. It is also

noted that the Aircraft Flight Manual states that solo flights should be conducted from the left-hand seat. The Pilot will undertake remedial training with the CFI before flying solo.

Date	5-Nov-2016	Region	GQ	SOAR Report Nbr	S-0821		
Level 1	Operational	Level 2	Miscellaneous	Level 3	Other Miscellaneous		
A/C Model 1	Piper PA-25	A/C Model 2	ASK-21				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	73
The tow pilot lost sight of the glider at about 1,500 ft AGL during the launch and noticed the rope was 'slack'. Presuming the glider had released, the tow pilot began a descent. The glider pilot, noticing the tow plane descending, immediately released from tow. When the matter was later raised with the tow pilot it was discovered that the tow plane's mirror needed to be readjusted in order to show a glider that was lower than normal during the tow.							

Date	6-Nov-2016	Region	VSA	SOAR Report Nbr	S-0822		
Level 1	Operational	Level 2	Aircraft Control	Level 3	Loss of control		
A/C Model 1	Piper PA-25-260	A/C Model 2	DG-1000S				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	58
The command pilot allowed the glider to fly too low during the aerotow launch. At about 500ft AGL the tow pilot waved the glider off when control difficulties were experienced. The command pilot stated that they flew the aerotow by reference of the tow plane to the canopy frame. On this occasion the pilot's seat was set too low, resulting in the pilot flying the glider lower than normal. Pilots should use the slipstream as the primary reference for towing position.							

Date	6-Nov-2016	Region	GQ	SOAR Report Nbr	S-0824		
Level 1	Operational	Level 2	Miscellaneous	Level 3	Other Miscellaneous		
A/C Model 1	ASK-21	A/C Model 2	Piper PA-25				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	49

During aerotow launch and while the glider pilot was undertaking the 'boxing the slipstream' exercise, the rope released from the tow plane uncommanded. The glider pilot released the rope near the airfield. When the rope was retrieved the rings and weak link were found to be still attached. The tow plane release was inspected, tested and found to be in order. It is believed the small ring may have not been inserted all the way and fell out due to forces applied by the glider during the slipstream boxing exercise.

Date	10-Nov-2016	Region	NSWGA	SOAR Report Nbr		S-0835	
Level 1	Operational	Level 2	Terrain Collisions	Level 3		Collision with terrain	
A/C Model 1	DG-300 Elan			A/C Model 2			
Injury	Nil	Damage	Minor	Phase	Outlanding	PIC Age	59
During a well-planned and well-executed outlanding the port wingtip collided with a concealed rock resulting in minor damage.							

Date	11-Nov-2016	Region	SAGA	SOAR Report Nbr		S-0836	
Level 1	Technical	Level 2	Systems	Level 3		Other Systems Issues	
A/C Model 1	Stemme S10-VT			A/C Model 2			
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	50
The pilot was undertaking a positioning flight from Waikerie to Parafield in a powered sailplane. During the climb the pilot selected the undercarriage up. The undercarriage position indicator lights flashed red for a longer than normal period and the climb rate did not improve as expected. Shortly after the circuit breaker popped. The pilot climbed to 1500ft AGL, reset the circuit breaker and then lowered and raised the undercarriage but the circuit breaker again triggered. The circuit breaker was reset and this time the pilot received two green lights indicating the undercarriage was down and locked. Another glider in circuit confirmed the undercarriage was down, as did members on the ground when the sailplane passed over the gliding control van. The pilot elected to continue the fight to Parafield with the undercarriage down. Upon arrival at Parafield the command pilot informed the control tower that the sailplane may have an unsafe undercarriage condition, and a local helicopter with a high definition camera flew alongside and also confirmed the gear was down. As the command pilot was concerned the undercarriage was not overcentre, the emergency undercarriage deployment handles (which disconnect spindle drives) were pulled to allow full weight of undercarriage to assist the over centre, and the engine was shut down. An uneventful landing ensued and the undercarriage remained down and locked. The Tower controller offered the command pilot the opportunity to inspect the overcentre mechanism while on the runway. After a satisfactory inspection, the command pilot restarted the engine and taxied back to the hangar. The Tower sent a ground vehicle to meet with the command pilot to obtain a statement for a report. Investigation revealed a retaining spring had weakened over time and was not pushing down on the plate hard enough to reliably lock the latch hook at the bottom of the spindle drive. New Parts were fitted and the aircraft was returned to service.								

Date	11-Nov-2016	Region	GQ	SOAR Report Nbr	S-0841

Level 1	Technical	Level 2	Systems	Level 3	Avionics/Flight instruments
A/C Model 1	IS-30	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	56

The glider was being flown by two mutually qualified pilots in benign weather conditions. After a short flight the command pilot joined circuit and established safe speed near the ground, which for this aircraft was 55 knots. After touching down from a stabilised approach the aircraft bounced several times and both occupants felt the landing was very fast. It was reported that in recent times, in this same aircraft, there had been other bounced landings, several pilots had landed longer than normal, and towing speeds appeared to be low. However, these events had been attributed to operations in windy conditions. Immediately after landing the command pilot asked a qualified inspector to verify the ASI calibration and subsequent inspection found the pitot pressure line was split, resulting in the ASI under-reading by about 15 knots. Both the CFI and Club President expressed concern that other pilots had earlier suspected there was a problem and despite the matter being discussed privately, nobody had thought to raise the matter formally. This incident highlights the importance of pilots reporting anomalies in accordance with their Club's SMS so that problems can be managed and assessed for any potential impacts on safety. It also demonstrates how pilots can become accustomed to errant behaviour to the point where they don't consider in to be a deviation from what is normal. This is commonly known as 'Normalisation of Deviance' and if allowed to remain unchecked can result in an accident.

Date	11-Nov-2016	Region	VSA	SOAR Report Nbr	S-0837
Level 1	Operational	Level 2	Airframe	Level 3	Doors/Canopies
A/C Model 1	Duo Discus	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	40

At the start of an instructional flight the one-piece canopy was closed but the cord that supports the canopy when open got caught between the canopy frame and the fuselage. The canopy locking mechanism comprises of a front and rear latch, and while the front latch was fully engaged, the rear latch did not engage. The instructor, who was sitting in the rear seat had only flown the type on two previous occasions and didn't recognize the canopy wasn't latched properly before take-off. The launch was uneventful and control was passed to the student at about 500 ft AGL. At about 1,200 ft AGL the instructor noticed a slight vibration of the canopy frame and identified that the canopy latch was not engaged. The instructor informed the student of the problem, took control of the glider and released from the tow. The instructor correctly decided against opening the canopy in flight to free the cord and conducted a safe and uneventful precautionary landing back at the airfield. The CFI noted that due to the deep seating position in the aircraft it is sometimes difficult to see that the canopy locking pins are fully engaged, and experienced pilots check by feel. The CFI has reinforced the need for pilots to properly ensure the canopy is closed and locked, and ground crew have been asked to visually confirm the locking pins are engaged when connecting the tow rope to the glider.

Date	18-Nov-2016	Region	WAGA	SOAR Report Nbr	S-0842
Level 1	Operational	Level 2	Aircraft Control	Level 3	Control issues
A/C Model 1	Discus CS	A/C Model 2	PA-25-235/A6		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	47

The glider was fully loaded with water ballast for a cross-country flight. During the aerotow launch the glider pilot noticed that it was taking a long time to lift off but continued the ground run. The tow plane then became airborne prior to the glider, at which time the glider pilot made a radio call asking the tow pilot for more speed. The tow pilot reduced his climb angle and the glider became airborne as the speed increased. The glider pilot noted the remaining runway length was about 300m by the time the glider was airborne. All

gliders have a minimum speed for towing, and this is usually governed by the wing-loading and not the weight or size of the glider. Gliders with a heavy wing-loading (e.g. carrying water ballast) will need to be towed much faster than lightly loaded gliders and tow pilots need to get used to the range of minimum speeds of the gliders they tow, and above all to ask if they don't know. As in the case reported here, heavy gliders may not leave the ground before the tow plane. If the tow plane climbs too early while the glider is still on the ground, the glider will either not have flying speed and will have to release before it collides with the upwind fence, or it may have marginal flying speed and get dragged into the air barely above its stall speed and virtually uncontrollable. Neither of these options is attractive. The solution is for the tow pilot to keep the tow plane in ground effect until the known/agreed climb speed has been achieved, then allow the tow plane to separate and enter the initial climb with sufficient speed to give the glider pilot good control. It is therefore obvious that the tow pilot must know the characteristics of the glider about to be towed, especially its weight and safe tow speed. Glider Flight Manuals are a good source of information or, if unsure, ask the glider pilot. Once this is known, the exact technique to be used may be pre-planned and put into practice. It is necessary to go through this exercise prior to every tow.

Date	19-Nov-2016	Region	WAGA	SOAR Report Nbr		S-0844	
Level 1	Operational	Level 2	Aircraft Control	Level 3		Wheels up landing	
A/C Model 1		Pilatus B4-PC11		A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	58

The low hour's pilot, on his fourth flight on type, lowered the undercarriage in circuit but did not lock it. Upon touchdown, the undercarriage retracted and the glider came to rest on its lower fuselage, causing minor damage. Investigation revealed the undercarriage lever was not fully locked. The Pilatus undercarriage relies on an over-centre locking mechanism, and the pilot must push the undercarriage lever fully forward and rotate the handle so that it is flush with the cockpit wall to ensure the lock is engaged. If the lever is not fully forward, the undercarriage can stick 'dead centre' and will retract when jolted, such as on landing. The Club has attached an addendum to aircraft's Pilot Operating Handbook on using the undercarriage and pilots will be given a thorough briefing on the undercarriage system prior to conversion to type.

Date	19-Nov-2016	Region	NSWGA	SOAR Report Nbr		S-0847	
Level 1	Operational	Level 2	Fire Fumes and Smoke	Level 3		Fumes	
A/C Model 1		Piper PA-25-235/A1		A/C Model 2	N/A		
Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	

During aerotow operations and just prior to conducting a launch, the tow pilot noticed a heavy acrid burning smell in the cockpit. The pilot carried out shut down procedures and determined the smell was isolated to cockpit area. Inspection revealed electrical burning at the battery terminal. A dry chemical fire extinguisher was discharged onto the battery and the fire was extinguished. The aircraft was relocated to more remote area and an onsite Maintenance Engineer removed the damaged battery and examined the airframe. Damage was confined to a small hole burned in the fabric near the battery. It was concluded that the battery had failed due to the collapse of an internal wall causing a thermal runaway. The battery was replaced, fabric repaired, and aircraft returned to service. No further faults found, and the engineer confirmed the aircraft's electrical system was sound.

Date	20-Nov-2016	Region	WAGA	SOAR Report Nbr	S-0843
Level 1	Operational	Level 2	Aircraft Control	Level 3	Pilot Induced Oscillations

A/C Model 1		Astir CS		A/C Model 2			
Injury	Minor	Damage	Substantial	Phase	Landing	PIC Age	64

After flying a normal circuit the pilot turned onto the final approach path a little high. Full airbrake was deployed to steepen the approach but the pilot failed to manage the round-out and the aircraft touched down heavily (one witness reported seeing both wingtips touch the ground) and became airborne again. Upon touching down the second time the glider turned through 90 degrees to the left with the forward fuselage touching the runway. As the aircraft came to rest the right wing struck the ground. The pilot recalled pitching forward on the control column after the initial bounce but was slow to close the airbrakes, and the aircraft struck the ground the second time on the forward fuselage. Subsequent inspection of the glider revealed substantial damage to the mainwheel and undercarriage bulkhead. Causal factors include low experience overall and on type, mishandled flare and recovery from bounce, and a high workload. The pilot's CFI noted that the pilot was not entirely confident flying the aircraft and that peer pressure may also have been a factor.

Date	21-Nov-2016	Region	VSA	SOAR Report Nbr	S-0846
Level 1	Operational	Level 2	Aircraft Control	Level 3	Hard landing

A/C Model 1		Astir CS		A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Outlanding	PIC Age	17

The pilot originally decided to attempt a short cross-country task of about 80km. However, as the conditions appeared to be softening the pilot decided to launch and fly locally within sight of the airfield. After a successful winch launch the pilot struggled to find lift and landed back on the airfield for a relight. The pilot and the Club CFI discussed the possibility that the weather was deteriorating but felt the prospects of contacting good lift to the West of the rain cells was good. The pilot was again launched by winch into a cumulus filled sky with virga falling from cloud cells some 2 or 3 kilometres away. The glider was launched to a height of 1,700ft and the pilot immediately headed to the west to avoid the virga but the wind picked up and dark rain clouds were not far away. The pilot found a thermal just ahead of what was now a moving front and commenced to turn. After about 6 minutes had elapsed from the time of launch and while the glider was gaining height in a thermal, the airfield was struck by strong and gusting winds with heavy rain. The nearby Regional Airport weather data recorded wind speed up to 43knots. The pilot was struggling to work the strong and gusty thermal and, as the glider was drifting rapidly away from the airfield the pilot decided to push into wind towards the airfield, Despite increasing speed to 80 knots the pilot found progress over the ground to be slow, and height was rapidly being lost. At 700ft AGL the pilot gave a downwind radio call for a modified circuit onto the into wind runway and lowered the undercarriage. Although the glider turned onto the base leg with adequate height the pilot did not appreciate the strength of the wind and the angle to the aiming point rapidly decreasing. In the pilot's own words: *"I decided to cut the corner and turned onto final. At this point panic set in, I was undershooting the strip. No matter how far forward I pushed the stick I wasn't moving forward fast enough, only down vertically. I quickly came to the realisation that I was not going to make the strip, so I began to look at other options. The area around the gliding club is Mallee scrub; mostly trees, and small shrubs. I picked a bare patch of ground and landed in between two trees. I touched down and began to roll along the ground. After about 20 metres the left wing either hit a small shrub, I let the wing touch the ground, or I was caught by a sudden side gust of wind resulting in a ground loop. As the glider came to an abrupt halt, I just sat there completely in shock and disbelief of what had just happened. With my fingers shaking I undid my harness and parachute and got out of the glider. It was raining steadily as I ran around the glider to look for damage, but realising that I couldn't really do anything and that I was getting completely soaked, I got back in the glider and waited for the dust storm squall to pass."* During the approach and landing the pilot correctly flew the glider all the way to the ground while maintaining 'safe speed near the ground'. The glider had come to rest 150 metres short of the airfield boundary and suffered no apparent damage. Both the pilot and CFI recognised in hindsight that they should not have launched when a storm front was close by. The pilot also learned not to fly downwind of the airfield boundary in strong wind conditions.

Significant Factors

1. Wind strength was high and gusting;
2. A strong wind gradient existed at the time of the incident;
3. The pilot underestimated the strength of the headwind;
4. The pilot commenced his final approach from too far behind the runway perimeter for the prevailing conditions and performance of the glider being flown.
5. The glider was unable to penetrate the wind in order to complete a landing on the aerodrome; and
6. The pilot's options of a suitable landing place were limited by the unsuitability of terrain within gliding distance.Pilots should be aware that virga can significantly influence weather conditions. As rain changes from liquid to vapour form, it removes heat from the air due to the high heat of vaporisation of water. Precipitation falling into these cooling down drafts may eventually reach the ground. In some instances, these pockets of colder air can descend rapidly, creating a microburst which can be extremely hazardous to flight.

Date	22-Nov-2016	Region	NSWGA		SOAR Report Nbr		S-0850		
Level 1	Operational		Level 2	Terrain Collisions		Level 3	Collision with terrain		
A/C Model 1		Discus-2b			A/C Model 2				
Injury	Nil	Damage	Substantial	Phase	Outlanding		PIC Age	70	

The experienced pilot was undertaking a declared cross-country flight of 335 kms. Conditions were good with average thermal strength of 6 knots and regular climbs above 8,000ft, peaking at 11,000ft by mid-afternoon. The pilot's working height band was between 6,500ft and 11,000ft. The pilot was flying cautiously and covering ground slowly. After three hours of flying and covering 214 kms the pilot was on the last leg when contact with the lift was lost. The glider flew from 10,000ft to 3,000ft before the pilot contacted further lift but despite 16 minutes of thermalling the glider had not gained any height. The pilot elected to break off the flight and commit to an outlanding. The pilot selected a large flat paddock and conducted a successful landing. Unfortunately, late in the ground roll the underside of the port wing hit rocks hidden in the grass causing minor damage. While the pilot had outlanded previously, this is the first time it was into a paddock and not an airfield.

Date	24-Nov-2016	Region	VSA	SOAR Report Nbr	S-0856
Level 1	Operational	Level 2	Runway Events	Level 3	Runway excursion
A/C Model 1	LS6-C	A/C Model 2	ASK-21		
Injury	Nil	Damage	Minor	Phase	Launch	PIC Age	67

The LS6 was at the back of the grid on RWY 17 and the ASK 21 was positioned to its left near the front of the grid. A quartering tail wind of 10 to 15 knots was blowing from the South West. The LS6 was carrying half its water ballast load. As the gliders on the grid were launched the ASK 21 remained in situ while awaiting a vehicle to tow it to the more into wind RWY 26. The LS6 was launched from the belly release as a nose release was not fitted. During the initial stages of the launch its left hand wing dropped and remained on the ground. The pilot released from tow as the glider commenced a slow turn through 90 degrees to the left and came to rest under the right hand wing of the ASK 21. The ASK 21 sustained impact damage and slight delamination just above and to the left of the undercarriage from the LS6 wing, and the starboard wing underside was scratched by the LS6 canopy. There are a number of factors that led to this accident, namely: the LS6 was being towed from the belly release, with a quartering tailwind and half ballasted; and the grid line did not move forward as the leading gliders were launched, leaving the ASK 21 in a vulnerable position.

Date	26-Nov-2016	Region	SAGA	SOAR Report Nbr	S-0870
Level 1	Technical	Level 2	Systems	Level 3	Flight controls
A/C Model 1	HK 36 TTC	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	59

The motor glider was being used as a tow plane during a Regional Competition. On the incident flight the tow pilot had completed a launch and joined circuit for an engine-on landing. Upon completion of the pre-landing check list, the pilot opened the air brakes to the first detent to increase the decent rate and trimmed for speed. On base leg the pilot set the approach speed and again trimmed for the speed. The pilot turned onto final and commenced a stable approach using half airbrakes. During the final stages of the flare, at a height of about 6 feet and just before the stall, the spring-loaded trim lever disengaged from the detent and immediately moved to the full aft position. The aircraft momentarily pitched up as the pilot eased the stick forward against the trim-spring pressure to maintain landing attitude and completed a safe landing. The trim lever on this type of aircraft is located in the middle console between the seats and behind the power-plant control unit. To trim the aeroplane the pilot unlocks the lever by pulling it up, then by moving it to the desired position. Since the lever is spring-loaded, it catches when it is released. The pilot noted that during the tow several trim adjustments were made and discovered that while the spring for the trim detent would happily slide the lever into the slot, on some occasions it would not fully engage the detent. The pilot found that pressing down on the knob ensured it locked in place. Subsequent investigation could not find anything wrong with the system but re-lubricating the trim mechanism appears to have resolved the issue.

Date	26-Nov-2016	Region	VSA	SOAR Report Nbr	S-0854
Level 1	Operational	Level 2	Aircraft Control	Level 3	Pilot Induced Oscillations
A/C Model 1	Janus B	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	72

While landing in strong wind conditions the student pilot flew the glider onto the ground and the aircraft bounced back into the air. The pilot mishandled the controls during recovery from the bounce resulting in the glider rebounding into the air a number of times before coming to rest. The instructor failed to take over in time. The pilot flying is no longer solo due to a history of inconsistent landings and was flying with a Level 1 Instructor. The pilot conducted a normal circuit and approach but mishandled the flare and bounced the landing. The instructor was late to take over and the glider touched down a number of times before coming safely to rest. The pilot induced oscillations were not severe and no damage was done to the glider. The

instructor was debriefed by the CFI, who highlighted the need to adopt a defensive position during critical stages of flight so as to be ready to intervene if all isn't going as planned. Early intervention was also stressed, since leaving critical decision too late results in a much higher workload.

Date	26-Nov-2016	Region	SAGA	SOAR Report Nbr	S-0855
Level 1	Operational	Level 2	Aircraft Loading	Level 3	Loading related
A/C Model 1	ASW 27-18	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	49
Glider landed with asymmetric ballast due to blocked vent tubing and ground-looped at the end of the landing roll. Investigation revealed the port tank vent was blocked. The outer wing panel was removed and vent tube realigned. It is thought the silicone tube was misaligned with the matching tube in the outer panel during rigging on the previous day causing the vent tube to kink. The outer panel was re-rigged and water dump rate tested equal in both wings.					

Date	26-Nov-2016	Region	SAGA	SOAR Report Nbr	S-0851
Level 1	Operational	Level 2	Aircraft Control	Level 3	Hard landing
A/C Model 1	Standard Libelle 201 B	A/C Model 2			
Injury	Minor	Damage	Substantial	Phase	Launch	PIC Age	58
Just as a winch launch was commenced a club member noticed the trace had been overrun and had wrapped around the main wheel of the glider. A stop signal was given but the glider was about 30 to 40 feet in the air by the time the winch driver cut power. The glider then descended and landed heavily in a wheat crop approximately 5 meters from the runway edge. The pilot suffered back pain and was conveyed to hospital for observations. Investigation revealed that the aircraft over ran the rope as the slack was being taken up, and the rings back-released and flicked up into the main wheel becoming trapped in the under carriage. This was not noticed by the launch crew who then gave the "All Out" signal. Another member close by observed the cable being overrun and called for the launch to be stopped. The glider was launched from the main wheel, resulting in the glider rotating early into the climb, and it had reached a height of between 40ft and 100ft AGL before the winch driver cut the power. The pilot managed to get the glider into a nose-down position but opened the airbrakes before safe speed had been attained, and the glider 'pancaked' heavily into a crop alongside the runway some 200 metres from the launch point. Although the pilot had recently come back to gliding after a 40-year break he was in current practice. The launch failure caught the pilot by surprise, and while the nose of the glider was correctly lowered, the pilot inexplicably opened the airbrakes prior to allowing the speed to build up. This accident could also have had much more serious consequences had one member not noticed the problem and stopped the launch early. Being launched from the mainwheel allowed the glider to pitch up due to a low and aft CG position. In such cases it is possible for the elevator to be ineffective, thereby causing the glider to pitch up uncontrollably. Had this been allowed to develop a stall/spin event was likely.					

Date	28-Nov-2016	Region	VSA	SOAR Report Nbr		S-0860	
Level 1	Airspace	Level 2	Aircraft Separation	Level 3		Near collision	
A/C Model 1	Standard Libelle 201 B			A/C Model 2	PA-28-180 Archer		
Injury	Nil	Damage	Nil	Phase	Thermalling	PIC Age	

While thermalling 1 kilometre north of this Regional airfield and at a height of about 4,500ft, the glider pilot heard a radio call from a powered aircraft tracking to a nearby uncontrolled airport at the same height. The powered aircraft then passed about 300ft below the thermalling glider. The glider pilot attempted to contact the pilot of the powered aircraft to no avail. The Gliding Club CFI made contact with the Operations Manager of a nearby Flying Training School. The Training School agreed to alert their pilots to the risks when flying in the vicinity of the gliding site, and changed their navigational waypoint to ensure future flights avoided the Regional airfield when tracking to the nearby uncontrolled airport.

Date	29-Nov-2016	Region	NSWGA	SOAR Report Nbr		S-0864	
Level 1	Operational	Level 2	Terrain Collisions	Level 3		Wirestrike	
A/C Model 1	ASW 20B			A/C Model 2			
Injury	Minor	Damage	Substantial	Phase	Outlanding	PIC Age	73

The pilot experienced strong sink after releasing from aerotow for a competition flight and turned towards another aircraft circling in lift nearby. The high sink rate persisted so the pilot increased speed to pass through it quickly. With no improvement in the rate of descent, the pilot elected to head for a paddock but soon realized the glider would not reach it. The pilot headed for an alternative paddock with another suitable paddock to the left. The pilot noted: *"I was falling short. The glider was heavy and sinking rapidly and I realised I could not complete a turn to the left. I decided to go straight ahead and hope to clear the fence"*. While attempting to land in the paddock the glider struck a power line above the fence line, and the aircraft fell to the ground and was substantially damaged. The pilot suffered minor injuries and spent a short time in hospital for observation. Inspection of the glider at the accident site revealed the undercarriage was retracted, the airbrakes were unlocked, the flaps were in negative and the aircraft was still carrying full water ballast. The high rate of descent from tow coupled with the aircraft configuration at the crash site

suggests that the pilot omitted to lock the airbrakes prior to launch. The pilot may also have been using negative flap for aileron control during the ground roll and forgot to put them into neutral once control had been established. When then pilot released from tow and experienced a heavy rate of descent, this was initially attributed to strong sink and the pilot did not think to check the aircraft configuration. When the sink rate persisted, the pilot became overloaded to the point where the ability to troubleshoot potential problems had diminished (cognitive tunnelling). The pilot reported: *"I was current in out-landings, having made an outlanding two days earlier and another two weeks before that. In those outlandings I had time to choose a suitable paddock, go through my checks and complete a circuit. In retrospect, as soon as I realised the sink rate was not reducing I should have reduced my speed, checked the airbrake and flap settings and started dumping water."*

Date	29-Nov-2016	Region	NSWGA	SOAR Report Nbr	S-0865		
Level 1	Operational	Level 2	Terrain Collisions	Level 3	Wirestrike		
A/C Model 1	Ventus c	A/C Model 2					
Injury	Serious	Damage	Substantial	Phase	Outlanding	PIC Age	62

The pilot was competing in the NSW State Gliding Championships. It was Day 3 and the glider was on the final leg of a 510km flight. The pilot had been airborne for nearly four hours, and had spent most of the flight on oxygen while operating between 6,000ft and 12,000ft when the last turnpoint was rounded. With just over 160kms to run conditions began to soften, with high Cirrus casting a shadow across the ground. Upon rounding the turnpoint the pilot noticed that the aircraft's navigational GPS had not automatically changed to the next point. The pilot manually adjusted the navigational computer but mistakenly set its heading to the airfield and not to the assigned control point just to the North of the airfield. About halfway home and on final glide, the pilot realised the navigational error and reset the navigation computer to head for the control point. It was then the pilot realised the glider was under the glideslope. The pilot noted *"I think this rattled me as I had wasted height thinking I was home".* The pilot took a climb over a sunny spot on the ground as the cirrus shadow moved in. However, the climb was weak so the pilot pushed on towards some other sunny areas in the hope of a better climb rate. About 20kms from the control point the ground was in shadow, and the pilot realised there was little prospect of getting a climb. The pilot noted: *"I was indecisive; go to control point and outland? Back track to farmer harvesting? Turn toward (the airfield)?"* The pilot decided to back track but did not find lift so headed towards the airfield. The pilot made reasonable progress

into the 14-knot headwind and at about 7 kms of the airfield was at about 800ft AGL. Although the glide computer showed the glider to be below final glide and the pilot was not optimistic of landing on the airfield. There were two suitable outlanding paddocks in view, one just below and one ahead but nothing beyond, so the pilot opted not to push on. The pilot had a good view of the paddock below but thought it to be less suitable than the paddock ahead (it appeared wet and may have had a fence across it). The pilot continued to the paddock ahead but with only sufficient height to conduct a straight-in approach. *"On short finals, I saw a pole but no wires and then I hit the wires. A wire cut into the right wing, slowed the aircraft down and then speared it straight into the ground nose first. After impact, I found I was .... trapped under the plane. I managed to get out of the parachute and slide out. I called (the competition organisers) and gave them my co-ordinates. Fifteen minutes later a farmer drove past, so I asked him to take me to the local Hospital. Injuries are a broken forearm and cut over left eye. The accident was all my fault for not properly assessing the paddock. There are no other external factors."* When flying cross-country it is important that pilots plan and think ahead so that they are always in a position to make a safe landing. At low levels a pilot's priority will change from searching for lift to finding a suitable area in which to land. This requires good flight management and discipline because flying at low level is unsafe:

- there are more obstacles to avoid, many of which are hard to see until it is too late (e.g. power lines);
- pilots have a higher workload because there are more hazards to negotiate in the environment;
- there may be turbulence and wind shear that pilots do not encounter at higher levels; and
- there is very little time to recover control of the aircraft if something goes wrong (e.g. consider a low level spin).For competition pilots the race to the finish is a high workload and dynamic situation. In such circumstances, being near the ground at a height where it is not possible to assess and check an available landing paddock is a high risk situation that must be avoided. Human factors including decision biases, goal fixation and cognitive tunnelling in competition may lead to pilots eroding safety margins more than in normal non-competition flying. Being aware of the dangers of continuing into marginal circumstances, setting boundaries, having a sound knowledge of rules and procedures, disciplined adherence to minima and performance requirements, prioritisation of options, and planning to deal with potential situations will act as defences against unsafe conditions.

In a later communication to Club members, the pilot made the following observations:

- *For some crazy reason, I opted to land straight ahead. I was low and tried to get to (the airfield) or as close as possible.*
- I *failed to properly assess the paddock before landing in it. I sacrificed my safety and assessment height for distance, just to get closer to home or in the hope of picking up some lift on the way that would get me home. It was a very poor gamble; the stakes were high and the reward was minor. I have never done that before and I will never do that again.*
- *Please, when you are cross country flying and look like outlanding, always do a proper assessment of the paddock from a reasonable height. Your number one priority is to get on the ground safely. Forget about convenience or getting closer to home. Do not make a last-minute decision, do not land near the farm house because it is convenient, (farm houses use electricity).*
- i*f you find you are indecisive, you are probably getting overloaded and prone to a bad decision. Try to recognise that and concentrate on a safe landing only.*
- *Gliding is a safe sport so long as you obey the rules. I didn't obey* the rules and paid dearly.

Date	29-Nov-2016	Region	GQ	SOAR Report Nbr		S-0859	
Level 1	Airspace	Level 2	Airspace Infringement	Level 3		Airspace Infringement	
A/C Model 1	Piper PA-25-235			A/C Model 2	ASK-21		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	66
At briefing prior to operations commencing, the Duty Instructor mistakenly read the prior day's NOTAMS. As a consequence, pilots at the briefing were not aware that the nearby Military airspace was active and an aerotowing combination flew 1000 metres into restricted airspace during launch. The gliding club has a Memorandum of Understanding with the local Military base that allows access to the restricted airbase with prior permission. On this occasion the military did not deactivate the airspace as was intended and the gliding club failed to realise this when the wrong day's NOTAM was read.							

Date	30-Nov-2016	Region	GQ	SOAR Report Nbr		S-0861	
Level 1	Operational	Level 2	Flight Preparation/Navigation	Level 3		Aircraft preparation	
A/C Model 1	Astir CS Jeans			A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	16
The low hours pilot was about to launch when it was noticed that the tail dolly was still fitted. This incident highlights the importance of pilots diligently performing their pre-boarding checks and doing a thorough walk-around inspection. A contributing factor was the tail dolly fits into a hole in the lower fuselage and was not as obvious as a traditional wrap around dolly.							

Date	3-Dec-2016	Region	VSA	SOAR Report Nbr		S-0867	
Level 1	Technical	Level 2	Systems	Level 3		Other Systems Issues	
A/C Model 1	PW-6U			A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	
During the landing roll and as the instructor applied the wheel brake from the rear seat, the brake cable							

pulled free from the brake lever. Effective braking was still capable from the front seat. Investigation revealed that the brake cable had pulled free from the soldered ferrule. The reason why the cable pulled free was not identified but this can occur if the wires are not clean or adequately splayed, or if the wrong solder is used for the cable (silver solder and the proper flux should be used with stainless cable). A replacement cable was made and terminated using a Nicopress swage.

Date	3-Dec-2016	Region	WAGA	SOAR Report Nbr		S-0863	
Level 1	Operational	Level 2	Aircraft Control	Level 3		Pilot Induced Oscillations	
A/C Model 1		DG-1000S		A/C Model 2			
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	58

The solo pilot under instruction was landing in gusty conditions with wind speed estimated at 27 knots. The aircraft bounced on landing and the pilot mishandled the controls during recovery from the bounce resulting in the glider rebounding into the air a number of times before coming to rest. The instructor was caught by surprise and did not take-over. The most common instructing accident is 'instructor failed to take-over in time'. These accidents usually involve the trainee responding in an unforeseen way or failing to respond at all (e.g. not rounding out). While the overall idea is to let the trainee do as much as possible within their level of skill, the instructor should never wait until the last moment - which can rapidly become 'too late' - before responding to a situation that is going awry. This is particularly true of any manoeuvres close to the ground. Instructors must always maintain a defensive stance with hands near relevant controls in order to react quickly.

Date	3-Dec-2016	Region	NSWGA	SOAR Report Nbr		S-0902	
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3		Engine failure or malfunction	
A/C Model 1		Piper PA-25-235		A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	

After releasing the glider at 5000 AMSL, the tow pilot went to reduce power to descend but got no response from the throttle. The pilot then used the mixture control to manage power for the descent and a glide approach was conducted resulting in a normal landing. Subsequent investigation determined that the throttle cable broke in flight. The component was not time expired and had been inspected and passed as serviceable during the previous Annual Inspection.

Date	5-Dec-2016	Region	NSWGA	SOAR Report Nbr		S-0866	
Level 1	Environment	Level 2	Weather	Level 3		Other Weather Events	
A/C Model 1		Piper PA25-235/A1		A/C Model 2			
Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	70

While taxying from the fuel bowser to the glider hangar the tow plane was struck by a squall causing it to roll onto its left wing tip and come to rest sideways across the edge of the taxiway. The gliding operation had ceased due to an approaching squall and the gliders had been returned to the hangar. The tow pilot, in the belief that the storm front was still some distance away, elected to refuel the tug. However, the storm developed much more rapidly than anticipated and, as the tow pilot was taxying back from the refuelling point to the hangar the tow plane was suddenly engulfed by torrential rain and, more significantly, a 50 knot gust of wind which tipped the tug onto its left wing causing moderate damage to several ribs and the left aileron. A gust of this magnitude is outside the limits of controllability of any aircraft. The CFI noted the primary cause of this accident was an incorrect assessment of the rate of development of the storm and its subsequent severity. This was coupled with the well intentioned decision to refuel the tug before putting it

away which, with the benefit of hindsight, was not appropriate. This accident highlights that storm cells can be totally unpredictable and that getting everything safely away sooner rather than later is always the wisest course of action.

Date	6-Dec-2016	Region	WAGA		SOAR Report Nbr		S-0868		
Level 1	Operational		Level 2	Miscellaneous		Level 3	Rope/Rings Airframe Strike		
A/C Model 1		Piper PA-25-235			A/C Model 2		Ventus-2b		
Injury	Nil	Damage	Substantial	Phase	Landing		PIC Age	63	

Each soaring season, to foster cross-country and performance flying, the gliding club conducts operations from a remote airfield some three hours to the East of the home airfield. The Registered airfield has two runways, with the main bitumen runway 1400 metres in length with wide gravel verges either side. In keeping with past practice, the gliders were gridded on the bitumen runway and the tow planes landed on either gravel verge subject to wind conditions; dropping the ropes as they passed the gliders awaiting launch. On the day of the accident the tow planes were landing on the left-hand grass verge due to the wind direction. Several launches were conducted without mishap. Around midday as the tow plane was landing a gust of wind from the left caused the trailing tow rope to drift over the wings of gliders awaiting a launch. The rope caught one glider cutting the port flap in two, glanced off two other gliders without damage and narrowly missed two people standing nearby. Following this accident a review of the operation was conducted and the gliders were moved to the right-hand gravel verge for launch to provide additional separation from the landing tow planes.

Date	9-Dec-2016	Region	WAGA	SOAR Report Nbr	S-0871		
Level 1	Operational	Level 2	Terrain Collisions	Level 3	Collision with terrain		
A/C Model 1	ASH 26 E	A/C Model 2					
Injury	Nil	Damage	Substantial	Phase	Outlanding	PIC Age	62

The pilot was attempting a 750km FAI triangle during a club camp at a remote site. After completing about 450km of the task and during the final leg of the task the pilot took a climb to 6,500 feet and headed off across some scrub land; a distance of about 30 kms from high point to the nearest landable paddock. While crossing the scrub the glider flew through consistent heavy sink and the pilot decided to deploy the sustainer motor. However, when the motor was raised it did not lock as the glider was flying too fast. Running out of height and options, the pilot stowed the motor, picked the most suitable spot in the scrub to land, completed the pre-landing checks and landed in in scrub where the glider ground looped and came to a stop. The pilot activated the SPOT for a trailer retrieve but after about an hour the pilot realised the glider was in the middle of very rough terrain with no possible vehicle access. As it was approaching sunset, the pilot activated the 911 alarm on the SPOT. Whilst waiting for the Rescue Helicopter to arrive the pilot was in contact with a commercial flight, which was later replaced by a dedicated high orbiting King Air. When the Rescue Helicopter arrived the pilot was air-lifted out.

The pilot reported that the first leg of the task went as expected, working a height band of between 4,500 ft and 6,500 ft, and after about 2½ hours the first turn point was rounded. During the second leg, and after a low point of 3,100 ft, the pilot worked a height band of between 8,000 ft and 5,000 ft, with the occasional climb to 9,000ft. Communication with another pilot up ahead confirmed conditions on the third leg were similar to those on the second leg. Shortly after rounding the second turn point, the pilot got a strong climb to 10,000 ft on the edge of a forest and decided to track direct over about 20 kms of unlandable terrain. The pilot did not find any lift over the forest and lost 4,000ft by the time the aircraft was over landable paddocks. After a further 15 kms and at a height of about 3,700 ft, the pilot finally encountered a thermal near a salt lake and took a climb to 6,500ft. Three other pilots who had also set out on this task had, at this point, decided to cut short the task and head home. However, the pilot headed off into a blue sky confident of finding a good thermal to 10,000ft at the edge of another forested area ahead on track, and passing up the

opportunity to deviate a few kilometres towards a line of cumulus clouds that had formed over a treed area to the left of track. The pilot later commented, *"Poor decision number one was to assume that just because I had got a good thermal to 10,000ft at the edge of the first forest area I would automatically get a similar thermal at the next forested area. Poor decision number two was not recognising that the previous run from 10,000ft to 3,600ft had a lot of sink. I should have recognised this and conserved height, and deviated to the right along the landable paddocks…."* The pilot proceeded to cross about 30 kms of forest and scrub, buoyed by the prospect of finding another thermal to 10,000 ft and in the knowledge that the glider was fitted with a sustainer engine that would enable the pilot to self-retrieve if necessary. Unfortunately, no workable lift was encountered during the crossing and, the pilot's failed attempt to start the motor for a self-retrieve resulted in a landing in a semi-cleared area of scrub approximately three kilometres short of landable terrain. In the words of the pilot: *"Poor decision number three was not to turn back and fly to landable paddocks once I encountered the strong sink over the second forest region. I had ample opportunity to fly back or even deviate but I kept hearing in my head the words 'Never go back'. Poor decision number four was to be totally goal focused. I saw the end paddocks, I saw the Cu's and I thought I had the height. As a consequence I forged straight ahead, not noticing or worse, dismissing the passing of each of the safety options one by one, until the only option I had left was the engine option. Poor decision number five is the one upon which hangs this tale. I was flying a glider with an engine. The point is I was flying a glider first and foremost which has an auxiliary propulsion system for occasional use. I was thinking, 'No worries, come what may, the engine will save me.' What could go wrong with that? Poor decision number six is the one which really hurts in every way. I simply 'screwed the pooch.' At the right height AGL I started to deploy the engine. I have done aerial self-recovery lots of times with no previous problems. I followed the procedures, except for one, and the consequences of that were catastrophic. On raising the propeller, the mast light blinked red instead of that beautiful green. I would like to say the engine failed but... ultimately it was my fault, straight and simple pilot error. Who else's fault could it possibly be?"*

Following the safe arrival in the scrub, albeit with a damaged glider, the pilot was able to take stock of the situation. The aircraft was in a remote area surrounded by dense scrub, some 200 kilometres from the home airfield with no mobile phone coverage. The pilot had ample water and some food, and an out-landing survival kit with strobe lights and a portable aerial for the radio. A call over the radio to provide any listening

station with an update did not elicit a response. After about an hour, the pilot decided to activate the 'SOS' button on the SPOT tracking device to alert the Emergency Response Coordination Centre. Within ten minutes of activation a commercial twin turbo prop enroute from a FIFO mine to Perth radioed the pilot, and then conducted a high orbit above relaying information between Melbourne Central and the Gliding Club base. Upon reaching its fuel limit, the turbo prop headed to Perth after informing the pilot that another aircraft would arrive in about thirty minutes. A King Air arrived and confirmed the pilot's exact location and health status, and advised that a helicopter was on the way to extract the pilot. As night approached the pilot set-up the strobe lights to make it easy for the rescue helicopter. The King Air orbited overhead until the Search and Rescue helicopter landed and extricated the pilot, who was given a medical exam on the way to Jandakot airport. While the pilot acknowledged some poor decision making processes led to the outlanding, some good decisions were also made; such as configuring for landing and maintaining control of the glider at the critical times, carrying appropriate survival gear, location beacons and adequate food and water. As the pilot summed-up:

- *Hold sacrosanct your options to land safely no matter what, no matter where.*
- *A glider with an engine is first and foremost a glider. Fly it at all times as if it has no functioning engine. If the engine works, it's a bonus.*
- *Examine each decision point and mentally critique the last decision and take corrective actions before the next decision point is reached.*
- *Don't blindly follow any mantra, such as "Never go back". A possible alternative could be retreat, re-evaluate and re-engage.*
- *Reliable and constant communication in a crisis is essential. I will be purchasing a satellite phone for the glider so that never again will I be out of constant communication.*

Date	13-Dec-2016	Region	VSA	SOAR Report Nbr	S-0872
Level 1	Operational	Level 2	Ground Operations	Level 3	Taxiing collision/near collision
A/C Model 1	LS10-st	A/C Model 2	ASW 27-18		
Injury	Nil	Damage	Minor	Phase	Ground Ops	PIC Age	60

The pilot was competing in the Sailplane Grand Prix and was towing an ASG29 back to the tie-down area with a vehicle after the aircraft had been weighed. As the pilot manoeuvred the towing vehicle to ensure the wing walker did not collide with the taxiway lighting, the starboard wingtip of the glider under tow collided with the rudder of an LS10 that was parked just off to the side of the taxiway. The vehicle driver had been concentrating on avoiding the lights to the vehicle's right and had not noticed the LS10 parked to the vehicle's left. The driver did not feel the impact but noticed the glider under tow was no longer following the vehicle but turning to the left. The pilot immediately stopped the vehicle to investigate and saw the ASG29 had impacted the LS10 rudder fin post. It was noticed that the tail dolly of the LS10 had dislodged from the tow-out gear allowing the LS10 to rotate about 40 degrees around the main wheel. The LS10 suffered minor damage that did not affect its airworthiness, however the aileron of the ASG29 was torn and had to be repaired before further flight. Contributing factors included inattention/fixation by vehicle driver, and close proximity of the LS10 to the taxiway.

Date	13-Dec-2016	Region	NSWGA	SOAR Report Nbr	S-0874
Level 1	Consequential Events	Level 2	Low Circuit	Level 3	Low Circuit
A/C Model 1	PW-5 "Smyk"	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	Landing	PIC Age	69

The pilot misread the altimeter (3000' per revolution type) and failed to visually identify actual height above ground while in the circuit, resulting in very low and dangerous turn onto final. The pilot is experienced and current but only flies locally. The pilot has a history of flying lower than normal circuits at unfamiliar sites,

and the CFI and other instructors have conducted a number of check flights with the pilot. While the pilot's manipulation skills are good, more attention needs to be paid to referencing height without the use of an altimeter. The CFI noted that the pilot usually flies aircraft fitted with standard (1000 ft per revolution type) altimeters and may have become confused about what height they had with the PW5 altimeter when entering the circuit. Following this incident, the CFI requested the committee replace the 3000' per revolution type altimeter with a standard altimeter.

Date	14-Dec-2016	Region	GQ		SOAR Report Nbr	S-0875	
Level 1	Operational	Level 2	Airframe		Level 3	Landing gear/Indication	
A/C Model 1		KR-03A Puchatek			A/C Model 2		
Injury	Nil	Damage	Substantial	Phase	Landing	PIC Age	58

The sortie was a check flight for conversion of an early solo pilot to the aircraft. After a successful flight the pilot under assessment joined and flew a standard circuit. Following a normal final approach the pilot initiated an early round-out and allowed the speed to decay. The pilot did not properly hold-off during the flare and the glider touched down faster than normal but not heavily. Within seconds of touching down the glider decelerated quickly and pitched forward onto the nose skid as the fixed undercarriage collapsed. Investigation revealed an undercarriage strut had an undetected crack that fatigued as the glider ran across the rough landing surface at an excess touchdown speed.

Date	16-Dec-2016	Region	GQ	SOAR Report Nbr	S-0886		
Level 1	Airspace	Level 2	Aircraft Separation	Level 3	Near collision		
A/C Model 1	Piper PA-25-235	A/C Model 2	Cessna 172M				
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	62

This airfield has cross runways 12/30 and 06/24. As the Gliding Club's hangar is located close to the fence at the extreme end of RWY06, it is the club's practice to make initial launches from this point (if safe) prior to basing gliders at the launch point appropriate to the day's conditions. Two gliders had been launched from the cross-strip across the operational runway between 0900 and 1000, and a third launch was about to commence when the pilot of a Cessna called downwind for RWY30. The tow pilot responded that the combination would hold and, after observing an aircraft roll through the intersection the tow pilot made a

rolling call. The Cessna pilot alerted the tow pilot that he was on final approach. Although the tow pilot aborted the launch, the Cessna pilot elected to conduct a go-around procedure. Following the occurrence, the CFI reiterated to all club members the responsibly of each member involved in the launching of a glider to ensure a safe and clear environment at all times, noting that anyone has the right to stop a launch if necessary. During periods of constant cross-traffic, gliders will be relocated by car-tow.

Date	17-Dec-2016	Region	GQ	SOAR Report Nbr	S-0877
Level 1	Operational	Level 2	Ground Operations	Level 3	Taxiing collision/near collision
A/C Model 1	SZD-51-1 Junior	A/C Model 2	N/A		
Injury	Nil	Damage	Substantial	Phase	Ground Ops	PIC Age	56

The glider was being towed back to the hangar at the end of the day. An inexperienced member was driving the retrieve vehicle with an experienced club member in the passenger seat when it struck the windsock post. Contributing factors included inattention/distraction of both the vehicle driver and the supervising member. When taxying gliders, drivers need to pay particular attention to obstacle clearance. Keep a good look out and take things slowly.

Date	17-Dec-2016	Region	WAGA	SOAR Report Nbr	S-0882
Level 1	Operational	Level 2	Communications	Level 3	Other Communications Issues
A/C Model 1	SZD-50-3 "Puchacz"	A/C Model 2	GROB - BURKHAART FLUGZEUGBAU G-115C2		
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	62

In an email to the resident gliding club the Safety Officer of a Regional flight training organisation (RFTO)

reported that one of their Instructors was concerned about operational safety at this regional airfield. On a navigation sortie the powered aircraft operated by the RFTO established on downwind for a left-hand circuit on the operational runway of this regional ALA and a glider reported downwind on a 'right hand' circuit for the same runway. The instructor in the powered aircraft alleged the glider tow plane took off during this time without a radio call and that gliders were descending very close to the corner of the crosswind and downwind legs. The Safety Officer stated that previous experience suggested gliders tend to operate to different radio telephony and circuit standards. The Safety Officer was concerned that this airfield is used for very early solo navigation exercises, and that they have inexperienced students trying to negotiate a gauntlet of gliders that, it is alleged, are not making the expected radio calls or conforming to normal circuits. The Gliding Club's Chief Flying instructor responded that gliders will usually conform to a left-hand circuit but will generally be closer to the runway and may need to modify their circuit as circumstances dictate. The CFI further noted that gliding operations use standard radio procedures and that it would be unusual that the tow pilot did not make a radio call as the launch was about to commence. There are a number of CASA/AirServices publications available to all pilots detailing information relating to gliding operations, such as the AIP and CAAP 166-1(3). Particular references are:

- ENR 1.1 - Paragraphs 42.2 'Separation Minima' and 50.2 'Separation Minima for Landing'.
- ENR 5.5 - Paragraph 1 'Gliding Operations'; and
- CAAP 166-1(3) - Paragraph 4.3 'Glider Operations'.

Date	18-Dec-2016	Region	VSA		SOAR Report Nbr		S-0876		
Level 1	Operational		Level 2	Runway Events		Level 3	Depart/App/Land wrong runway		
A/C Model 1		Beech B200 King Air			A/C Model 2				
Injury	Nil	Damage	Nil	Phase	Ground Ops		PIC Age		

ATSB investigation.

On 18 December 2016, at about 1047 Eastern Daylight-saving Time (EDT), a Beech Aircraft Corporation B200 aircraft, registered VH-ZOK (ZOK), was on descent to Horsham Airport, Victoria. The pilot, copilot, and six passengers were on board the charter flight. Horsham Airport was hosting a gliding competition from the 12-20 December 2016 and a notice to airmen (NOTAM) (a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations) had been published with information on the event (see NOTAM section below). At about 1000 that morning, the director of the gliding competition conducted a briefing for the glider pilots and other people involved in the event. At the briefing, the selected take-off point for the conditions on the day and the schedule for marshalling the gliders out to the take-off point were discussed. After the briefing, two ground personnel associated with the event went out to the take-off point for the gliders on runway 17 and began to lay out the 14 ropes that would be attached to the gliders and the launch aircraft. Seven ropes were placed lengthwise on the grass within the runway strip (a runway strip, for a runway without an instrument approach, includes a graded area around the runway, in this case a grass area, and stopway, intended to: (1) to reduce the risk of damage to aircraft running off a runway; and (2) to protect aircraft flying over it during take-off or landing operations) on each side of the bitumen runway (The runway is a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft), where it was planned the gliders would launch from. Later in the day, the ropes were to be attached to each glider and their respective tow aircraft to launch the gliders. At the time when the event ground personnel were laying out the ropes, a powered aircraft was conducting circuits on runway 08 (Figure 1).

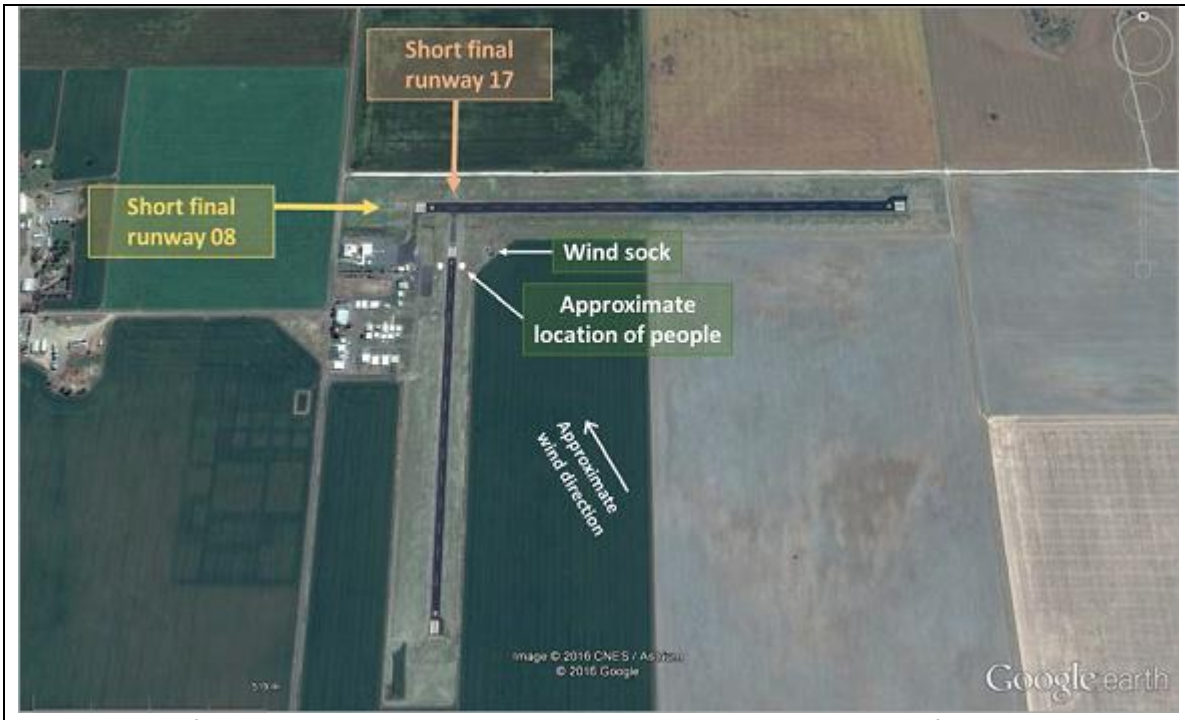


Figure 1: Map of airport showing runways 08 and 17 and the approximate location of the ground personnel

As ZOK approached the circuit, the pilot was aware of one other aircraft on the common terminal advisory frequency (CTAF) that was on the downwind circuit leg for runway 08. The other aircraft was significantly slower than ZOK and the wind direction was about 140 degrees, and the wind speed was about 7 kts (maximum wind gusts recorded was 15 kts). The pilot of ZOK elected to land on runway 17. The pilot gave an inbound broadcast on the CTAF and another as they joined downwind for runway 17. As ZOK turned onto the base circuit leg, the aircraft on runway 08 had just landed and was backtracking to vacate the runway. A broadcast on the CTAF was made alerting the pilot of ZOK to the NOTAM. The pilot of ZOK believed the voice was that of the pilot that had just landed. The pilot of ZOK was not able to identify any gliders in the air so continued with the approach. ZOK turned onto the final approach and the pilot was able to see the bitumen part of the runway was clear. The ground personnel noticed the sound of another powered aircraft and looked up to see the landing lights of an aircraft on final approach for runway 17. The ground personnel were located on the grass on both sides of the runway and each moved back about 10 to 15 m within the runway white gable markers (Runway 17 was 24 m wide, total width of the runway strip to the white gable markers was 80 m). As ZOK was on short final, again a radio communication was broadcast on the CTAF indicating that runway 17 was closed that there was ground based activity on the runway and that ZOK should go around. Again, the pilot of ZOK believed the voice was that of the pilot that had just landed. The pilot and copilot double-checked the bitumen runway and did not identify any person on the runway. As the pilot believed that the runway was not closed, given the height of the aircraft above the ground and the risks associated with going around at this height, the pilot continued with the landing. The aircraft landed just past the threshold and taxied the full length of the runway, turned around and back tracked runway 17 to access the aircraft parking bay near the airport terminal. While backtracking, the pilot noticed two people either side of the runway on the grass about 50 m from the runway 17 threshold. The pilot, copilot, six passengers, and two ground personnel were not injured and the aircraft was not damaged.

Pilot comment

The pilot had received a copy of the NOTAM during their preparation for the flight. Their understanding of the NOTAM was that there was a gliding competition at the airport and that runway 17/35 was available by prior arrangement. The critical hours for the competition were from 1200 to 1400. The preferred runway for

the gliding competition was runway 17/35 but they could change to runway 08/26 if required. The pilot indicated that although their arrival time was outside 1200 to 1400 they contacted the competition director on the phone number provided in the NOTAM to discuss their arrival and departure. The pilot reported that they rang on the Saturday, the day prior to the flight. The discussion with the acting competition director concerned the glider flying and their subsequent departure time from Horsham, as that may have posed a conflict with returning gliders and how that separation would be arranged. The pilot indicated that at no stage in the conversation was it mentioned that runway 17/35 was closed to powered aircraft or that there would be people on the runway setting up for the gliders to depart. The pilot indicated that the conversation ended with the pilot believing that there was no problem with the arrival as it was outside the critical time. At the time of their departure from Horsham, the pilot planned to contact the competition director if there was any glider activity. The pilot indicated that runway 17 was selected for landing as it was the runway that was most appropriate for the wind conditions. Another aircraft was landing on 08, which was significantly slower than ZOK and this could result in a potential conflict as the other aircraft back tracked to clear runway 08, as well as catching up to it in the circuit. The pilot was aware that there may be glider activity and had briefed the copilot to be extra vigilant. They both ensured that there were no gliders in the area at the time. They were not aware that there might be people working on the runway and at no stage noticed any people or vehicle on the runway. The pilot commented that it would be hard to see a person against the grass section of the runway when travelling at about 200 km/h and that it was the bitumen part of the runway that they physically landing on. The pilot also commented that they have not experienced a situation where people were on the runway and had not communicated their intentions on the CTAF to arriving or departing aircraft.

Event ground personnel comment

The event ground personnel believed that runway 17/35 was closed for the gliding competition. They reported that the active runway for powered aircraft was runway 08 and a powered aircraft was operating on that runway. There was no traffic expected and generally, at that time of the morning there is not much wind. A radio to communicate on the CTAF was located in the vehicle that was used by the ground personnel. As they were setting up on runway 17, near where the equipment was stored, the ground vehicle had not been used to transport the ropes and was not located on or near the runway. They did not feel that the radio was needed at this time. At the time of the incident, the ground personnel were reported to be wearing bright yellow high visibility vests. The ground personnel reported that the NOTAM had been written the same way for many years.

Acting competition director (16 December 2016 NOTAM contact)

The acting competition director remembered speaking to the pilot two days prior to the expected arrival of ZOK (the pilot of ZOK reported that this conversation occurred the day prior to the flight, on the Saturday. The ATSB was not able to locate a gliding event official that remembered talking to the pilot on the Saturday. The official that was the main contact for every day except the 16 December does not remember talking to the pilot). The acting director's understanding of the conversation was that:

- the arrival time would not conflict with the launching of the gliders
- the pilot was aware the NOTAM was in force and that the pilot did not want to interfere with the glider traffic
- the pilot mentioned that they would be able to land in a 15 kt crosswind, which further indicated that they were happy to land on runway 08/26.

The acting director believed that the pilot understood that runway 17/35 was 'closed' to powered traffic (not available without prior approval – The convention in Australian NOTAM is to use the phrase 'NOT AVBL' rather than 'CLOSED' - Airservices Australia) and that the pilot would use 08/26, which was the active runway for all powered aircraft, however this was not specifically discussed. The pilot of ZOK rang two days prior to their arrival and in that time the weather conditions can change. The acting directors understanding of the NOTAM was that:

- 17/35 was 'closed' to all powered traffic
- there was high glider activity in the area

- if anyone wanted to use 17/35 they had to ring the competition director up to 30 minutes before using that runway, but this was not specified in the NOTAM.

The vehicle that the ground personnel had available included a rotating flashing beacon (the vehicle was not used at the time of the incident). The grass on the runway strip had been specially mowed for the event.

Competition director

The competition director indicated that the airport operator issued the NOTAM and they understood that the NOTAM closed runway 17/35 to non-glider related traffic during daylight hours. The NOTAM had been written this way for about 3 to 4 years. The wording of the NOTAM had evolved over 10 years. About 3 to 4 years ago, the wording changed from 'closing' runway 17/35 to powered aircraft for a short period, to 'closing' it to powered aircraft for the entire day to give powered pilots better notice. The competition director indicated that they did not believe a general discussion of potential operations at unspecified times constituted either a request for or a granting of permission to use runway 17/35. The director reported that generally at that time of the year the wind favours runway 17 and it could not be determined which runway would be the most suitable for the glider operations more than 2 hours ahead of time. The director indicated that similar incidents have happened over the years but on this occasion, there were people and equipment on the runway strip. A search of the ATSB occurrence database did not find any reported events involving landing powered aircraft (*see Previous incidents below*). The director indicated that permission for an aircraft to land or take off on runway 17/35 would need to be discussed at the time as it depends on the:

- operational situation
- wind
- if gliders are on the strip waiting to be launched.

Notice to airmen (NOTAM)

The NOTAM for the glider flying competition was issued and applicable from 1000 on the 12 December 2016 to 2100 on the 20 December 2016 during sunrise to sunset (Figure 2). The NOTAM indicated that:

- there was intensive glider flying confined to runway 17/35
- the use of runway 17/35 during sunrise to sunset by other aircraft was only by prior arrangement with the competition director
- runway 08/26 may be used for glider flying if runway 17/35 was not suitable
- glider traffic information was available on the CTAF 118.8 and visiting aircraft should plan to arrive or depart outside the hours of 1200 to 1400 local time if possible
- phone numbers were provided to contact the director for further details. On 16 December, a different mobile number was provided to contact the director.

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                                                              C19/16
INTENSIVE GFY CONFINED TO RWY 17/35
USE OF RWY 17/35 DURING HJ BY OTHER ACFT ONLY BY PRIOR ARRANGEMENT
WITH COMPETITION DIRECTOR.
RWY 08/26 MAY BE USED FOR GFY IF RWY 17/35 NOT SUITABLE.
GLIDER TRAFFIC INFORMATION IS AVBL ON CTAF 118.8 VISITING ACFT SHOULD
PLAN ARRIVE OR DEPART OUTSIDE HRS 0100 - 0300 UTC IF POSS.
CTC DIRECTOR XX XXXX XXXX MOBILE XXXX XXX XXX FOR FURTHER DETAILS
EXCEPT ON 16 DEC (AEDT) MOBILE IS XXXX XXX XXX
FROM 12 112300 TO 12 201000
HJ
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Figure 2: NOTAM

The Horsham airport operator forwarded a copy of the NOTAM wording to CASA prior to submitting the NOTAM to Airservices Australia to be issued. CASA provided a response to the airport operator that based on the information provided they had no objection to the proposed NOTAM.

Previous incidents

A search of the ATSB database identified one other notification in the last ten years that involved a glider event and a powered aircraft at Horsham Airport. In 2016, during final approach, three gliders were required to manoeuvre to ensure separation from a single-engine aircraft that was taxiing up and down the

runway at high speed before taking off. No radio calls were heard from the single-engine aircraft.

Safety analysis

The pilot of ZOK had received a copy of the NOTAM while conducting their preparation for the flight. After reading the NOTAM, they assessed that if they contacted the competition director prior to the flight, they could use runway 17/35. They believed that by ringing the competition director before the flight, they had made a prior arrangement to use runway 17 and, as the intended arrival time was outside the 'critical' hours of 1200 to 1400 specified in the NOTAM, their arrival would not interfere with the competition. As neither party specifically talked about runway 17/35, a connection was not made that there was a different understanding of what the NOTAM meant and that permission was not nor could it have been granted to use runway 17/35 when the weather conditions for the launch day were not known. The gliding club believed that the NOTAM 'closed' the runway to all aircraft during daylight hours, apart from the gliders and tow aircraft taking part in the competition. Due to this interpretation, the ground handlers for the event did not make any radio calls before they entered the runway strip to prepare for the competition. Nor did they carry the radio that was available in their vehicle. The NOTAM is also not clear when permission is need to use runway 17. The pilot assessed that as they had contacted the director and discussed the flight, they had made an arrangement to use the runway. The competition director believed that there was a requirement for the pilot of an aircraft intending to use runway 17/35 to contact them on the day of the flight. An opportunity to alert the pilot that there was ground activity on the runway was missed, as the ground vehicle, which had a rotating beacon, was not used (located near or on the runway) due to the close proximity of the equipment to the launch site. In addition, the ground personnel did not have a radio with them to communicate on the CTAF.

Findings

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

- Landing on runway 17, the pilot of ZOK was not aware that two people were located inside the white gable markers denoting the runway strip and that ropes were located beside the runway in preparation for launching gliders.
- The NOTAM for gliding operations was open to misinterpretation.

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

Airport operator

As a result of this occurrence, the airport operator has advised the ATSB that they are taking the following safety actions:

- Improved wording to the NOTAM issued for future gliding events will be developed with gliding event officials and CASA so prior approval would need to be obtained within two hours of the intended use of the runway, to ensure that current weather conditions and gliding operations could be considered at the time.

Safety message

This incident highlights the critical importance of communications and as discussed in the CASA Flight Safety Australia magazine September-October 2012, 'Mind your language', the importance of what you say and how you say it for both the written and spoken word. The article identifies three ways that NOTAMs fail in relevance, ambiguity, and readability. NOTAMs should always be clear and concise and leave no room for misinterpretation. For copy fo the article, go to: (http://pandora.nla.gov.au/pan/140978/20130530-1146/fsep12.pdf)..

Date	18-Dec-2016	Region	WAGA	SOAR Report Nbr	S-0878
Level 1	Technical	Level 2	Powerplant/Propulsion	Level 3	Engine failure or malfunction

A/C Model 1		Stemme S10			A/C Model 2	N/A	
Injury	Nil	Damage	Minor	Phase	In-Flight	PIC Age	58
During an air start of the powered sailplane motor the number 3 spark plug ejected from the engine causing the engine to run rough. The command pilot managed to contact a thermal, turned off the motor and returned home as a glider. Investigation revealed the number 3 spark plug thread had been damaged by cross-threading. This spark plug is located behind an airframe member, which makes it difficult screw it in straight. The head was removed and a helicoil inserted.							

Date	18-Dec-2016	Region	NSWGA	SOAR Report Nbr	S-0903
Level 1	Operational	Level 2	Aircraft Control	Level 3	Control issues
A/C Model 1	Piper PA-25-235/A1		A/C Model 2	N/A	
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	
The pilot was flying solo a dual controlled Piper PA-25-235/A1 Pawnee from the left-hand seat. At approximately 1,200ft on aerotow the tow pilot briefly removed his right foot from the right rudder pedal. Upon re-application of the right foot, the pilot mistakenly applied his right foot to the left-hand pedal on the second set of rudder pedals. This resulted in the pilot having one foot on each of the left rudder pedals. Shortly thereafter, the tow plane yawed through an estimated 60-70 degrees to the left, with a slight to moderate nose down pitch (estimated 15 degrees nose down from climb attitude). The tow pilot believed the glider had moved out of station and, conscious of a tug upset, released the tow rope from the tug end. Immediately after doing so, the tow pilot realised his error and recovered the tow plane to straight and level flight. The glider landed safely still carrying the rope. There was no damage to either aircraft. The tow pilot noted a significant difference in the rudder pedal spacing between single seat Pawnees and two seat Pawnees, and noted that the rudder trim in this particular aircraft was ineffective and required constant right rudder pressure during glider towing operations.					

Date	21-Dec-2016	Region	NSWGA	SOAR Report Nbr	S-0934
Level 1	Environment	Level 2	Weather	Level 3	Turbulence/Windshear /Microburst
A/C Model 1	PW-5 "Smyk"		A/C Model 2	Grob G 103 Twin II	
Injury	Nil	Damage	Write-off	Phase	Ground Ops	PIC Age	70
The weather was thermic and there were storms visible on the high ground to the east. Clouds close to the club were cumulus with a fair amount of vertical development. A street to the south-west began to emit showers, with one shower close to the launch point. The shower crossed the end of the airfield and the wind increased from around 5-10kts to 76kts (measured on the weather station) within a few seconds. A Discus glider was picked up by the wind, bounced off the canopy of a Twin Astir, and came to rest inverted. Most surfaces were damaged and the Twin Astir canopies and cockpit were damaged. Once the wind abated all aircraft were removed to hangars/trailer to prevent further damage.					

Date	21-Dec-2016	Region	NSWGA	SOAR Report Nbr	S-0933		
Level 1	Environment	Level 2	Weather	Level 3	Turbulence/Windshear /Microburst		
A/C Model 1	PW-5 "Smyk"			A/C Model 2	IMC A-9A Callair		
Injury	Nil	Damage	Write-off	Phase	Ground Ops	PIC Age	63

The weather was thermic and there were storms visible on the high ground to the east. Clouds close to the club were cumulus with a fair amount of vertical development. A street to the south-west began to emit showers, with one shower close to the launch point. The shower crossed the end of the airfield and the wind increased from around 5-10kts to 76kts (measured on the weather station) within a few seconds. The unoccupied tow plane was blown backwards into a PW5 glider. The tow plane sustained minor damage to the elevator and rudder and the glider sustained damage to fuselage and wing. Once the wind abated all aircraft were removed to hangars/trailer to prevent further damage.

Date	21-Dec-2016	Region	NSWGA	SOAR Report Nbr		S-0904	
Level 1	Operational	Level 2	Aircraft Control	Level 3		Incorrect configuration	
A/C Model 1		ASK-21Mi		A/C Model 2	N/A		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	

The low hours pilot was undertaking a solo flight and being launched by aerotow. Just after the slack had been taken out of the rope and as the glider was moving forward, an issue in ground signalling caused the launch to be halted. The glider pilot deployed the airbrakes to apply wheel brake to prevent the glider from over-running the rope. The airbrakes were subsequently closed but not properly locked and the airbrakes briefly opened during the take-off shortly after ground separation. The glider pilot closed and locked the airbrakes with no further issues. This type of incident is not uncommon but can be prevented if pilots recommence their pre take-off checks whenever a launch is delayed or interrupted.

Date	23-Dec-2016	Region	GQ	SOAR Report Nbr		S-0928	
Level 1	Operational	Level 2	Runway Events	Level 3		Runway incursion	
A/C Model 1		AMT-200 S		A/C Model 2	Robinson R22 BETA		
Injury	Nil	Damage	Nil	Phase	Launch	PIC Age	72

A Robinson Helicopter R22 BETA was operating at Camden airport on the glider strips 06/24 and 10/28 conducting low level helicopter training. A Motor Glider called ready for a departure from Glider strip 10. The Duty Controller tried to contact the helicopter pilot several times with no response. The motor glider pilot was offered the "Powered" Runway 10 as opposed to Glider 10 to avoid further delay. The Controller continued to contact the helicopter pilot for a further 5 minutes before contact was established.

Date	24-Dec-2016	Region	VSA	SOAR Report Nbr	S-0923
Level 1	Airspace	Level 2	Airspace Infringement	Level 3	Airspace Infringement
A/C Model 1	Mini-Nimbus C	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	50

During a cross-country flight the experienced pilot flew into controlled airspace on three separate occasions without a clearance. The infringement was identified by the pilot's CFI following a review of the pilot's OLC trace. The infringement occurred despite the pilot carrying appropriate maps and GPS navigation device and may have been caused by inattention. The pilot was counselled.

Date	28-Dec-2016	Region	WAGA	SOAR Report Nbr	S-0883
Level 1	Operational	Level 2	Communications	Level 3	Other Communications Issues
A/C Model 1	GROB - BURKHAART FLUGZEUGBAU G-115C2	A/C Model 2			
Injury	Nil	Damage	Nil	Phase	In-Flight	PIC Age	

A Grob 115 aircraft from a Regional flight training organisation arrived at this regional airfield without making an inbound radio call on the published CTAF, and proceeded to plan an approach for the non-active runway 28. Glider operations were using runway 18, which was the most into wind runway. Due to the strong crosswind component on runway 28, the pilot of the Grob 115 aborted the landing and proceeded to join circuit for a landing on the operational runway. Upon landing the pilot taxied off the runway and was approached by the gliding club's tow pilot. The Grob 115 pilot stated that he had forgotten to change the radio frequency to the CTAF but did not explain his runway choice.

Date	29-Dec-2016	Region	WAGA	SOAR Report Nbr	S-0888
Level 1	Operational	Level 2	Aircraft Control	Level 3	Wheels up landing
A/C Model 1	Grob Astir CS	A/C Model 2			
Injury	Nil	Damage	Minor	Phase	Landing	PIC Age	

On entering the circuit area at about 1,000' AGL the pilot noticed a glider that had landed previously was blocking the cross strip and that there was a vehicle with the glider to assist with the retrieve. The pilot decided to hold in a thermal while the glider was being removed from the strip. After a couple of minutes the glider had been pushed clear of the runway, so the pilot gave a radio call that the glider was entered

circuit and then completed the pre-landing checks. The pilot carried out minimum energy landing and the aircraft settled on its belly with the main wheel retracted. The pilot immediately recognised the undercarriage had not been lowered. The pilot recalled conducting the pre landing checklist but did not perceive the lever was in the retracted position. The pilot believed the undercarriage had been lowered earlier and saw what was expected to be seen. This is a form of confirmation bias that can be brought on by stress in a high workload environment, such as landing.

Date	30-Dec-2016	Region	GQ		SOAR Report Nbr		S-0884		
Level 1	Operational		Level 2	Miscellaneous		Level 3	Rope/Rings Airframe Strike		
A/C Model 1		ASK-21			A/C Model 2		Cessna 150M		
Injury	Nil	Damage	Substantial	Phase	Landing		PIC Age		
As the tow plane was landing but still airborne, its tow rope and tow rings impacted the left-hand aileron of a glider at the launch site. The Club enacted its Safety Management System and implemented changes that now require tow planes to land further down the airfield to avoid trailing the rope in close proximity to persons, vehicles and gliders (also refer report S-0825).									

Level 1	Level 2	Level 3	Definition
Airspace	Aircraft Separation	Collision	An aircraft collides with another aircraft either airborne or on the runway strip, or a vehicle or person on the runway strip.
Airspace	Aircraft Separation	Issues	Airspace - Aircraft separation occurrences not specifically covered elsewhere.
Airspace	Aircraft Separation	Near collision	An aircraft comes into such close proximity with another aircraft either airborne or on the runway strip, or a vehicle or person on the runway strip, where immediate evasive action was required or should have been taken. (a) En-route (b) Thermalling (c) Circuit
Airspace	Airspace Infringement	Airspace Infringement	Where there is an unauthorised entry of an aircraft into airspace for which a clearance is required.
Airspace	Other	Other Airspace Events	Airspace occurrences not specifically covered elsewhere.
Consequential Events	Ditching	Ditching	When an aircraft is forced to land on water.
Consequential Events	Diversion / Return	Diversion / Return	When an aircraft does not continue to its intended destination, but either returns to the departure aerodrome or lands at an alternative aerodrome.
Consequential Events	Emergency / Precautionary descent	Emergency / Precautionary descent	**Emergency descent** - Circumstances that require the flight crew to initiate an immediate high rate descent to ensure the continued safety of the aircraft and its occupants.
Consequential Events	Emergency evacuation	Emergency evacuation	When crew and/or passengers vacate an aircraft in situations other than normal and usually under the direction of the operational crew.
Consequential Events	Forced / Precautionary landing	Forced / Precautionary landing	**Forced landing** – Circumstances under which an aircraft can no longer sustain normal flight and must land regardless of the terrain. **Precautionary landing** - A landing made as a precaution when, in the judgement of flight crew, a hazard exists with continued flight.
Consequential Events	Low Circuit	Low Circuit	Any occasion where a pilot flies a Low Circuit that was potentially hazardous.
Consequential Events	Other	Other Consequential Events	Consequential events not specifically covered elsewhere.
Environment	Weather	Icing	Any icing issue that affects the performance of an aircraft.
Environment	Weather	Lightning strike	The aircraft is struck by lightning.
Environment	Weather	Other Weather Events	Weather occurrences not specifically covered elsewhere.
Environment	Weather	Turbulence/Windshear/Microburst	Aircraft performance and/or characteristics are affected by turbulence, windshear or a microburst.
Environment	Weather	Unforecast weather	Operations affected by weather conditions that were not forecast or not considered by the flight crew.
Environment	Wildlife	Animal strike	A collision between an aircraft and an animal.
Environment	Wildlife	Birdstrike	A collision between an aircraft and a bird.
Environment	Wildlife	Other Wildlife Events	Wildlife related occurrences not specifically covered elsewhere.
Operational	Aircraft Control	Airframe overspeed	The airspeed limit has been exceeded for the current aircraft configuration as published in the aircraft manual.
Operational	Aircraft Control	Control issues	The flight crew encounter minor aircraft control difficulties while airborne or on the ground.
Operational	Aircraft Control	Hard landing	Damage occurs during the landing.
Operational	Aircraft Control	Incorrect configuration	An aircraft system is incorrectly set for the current and/or intended phase of flight.
Operational	Aircraft Control	In-flight break-up	The aircraft sustained an airborne structural failure or damage to the airframe, to the extent that continued flight is no longer possible.
Operational	Aircraft Control	Loss of control	When control of the aircraft is lost or there are significant difficulties controlling the aircraft either airborne or on the ground.
Operational	Aircraft Control	Other Control Issues	Aircraft control occurrences not specifically covered elsewhere.
Operational	Aircraft Control	Pilot Induced Oscillations	Any PIO occurrence occassioning damage.
Operational	Aircraft Control	Stall warnings	Any cockpit warning or alert that indicates the aircraft is approaching an aerodynamic stall.
Operational	Aircraft Control	Wheels up landing	An aircraft contacts the intended landing area with the landing gear retracted.

Operational	Aircraft Loading	Loading related	The incorrect loading of an aircraft that has the potential to adversely affect any of the following: a) the aircraft's weight; b) the aircraft's balance; c) the aircraft's structural integrity; d) the aircraft's performance; e) the aircraft's flight characteristics.
Operational	Aircraft Loading	Other Loading Issues	Aircraft loading occurrences not specifically covered elsewhere.
Operational	Airframe	Doors/Canopies	When a door or canopy, or its component parts, has failed or exhibited damage.
Operational	Airframe	Furnishings & fittings	An internal aircraft furnishing or fitting, including its component parts, has failed or exhibited damage.
Operational	Airframe	Fuselage/Wings/Empennage	Damage to the fuselage, wings, or empennage not caused through collision or ground contact.
Operational	Airframe	Landing gear/Indication	When the landing gear or its component parts (including indications), has failed or exhibited damage.
Operational	Airframe	Objects falling from aircraft	Objects inadvertently falling from or detaching from an aircraft.
Operational	Airframe	Other Airframe Issues	Technical - Airframe occurrences not specifically covered elsewhere.
Operational	Airframe	Windows	A window or a component part has failed or exhibited damage.
Operational	Communications	Other Communications Issues	Communications occurrences not specifically covered elsewhere.
Operational	Communications	Transponder related	The incorrect setting of a code and/or usage of transponder equipment.
Operational	Crew and Cabin Safety	Cabin injuries	A cabin crew member or passenger has suffered an illness or injury.
Operational	Crew and Cabin Safety	Flight crew incapacitation	A Flight Crew member is restricted to nil or limited duties as a result of illness or injury.
Operational	Crew and Cabin Safety	Inter-crew communications	Relates specifically to a loss, or breakdown, of communication between flight crew or associated ground staff.
Operational	Crew and Cabin Safety	Other Crew and Cabin Safety Issues	Cabin safety occurrences not specifically covered elsewhere.
Operational	Crew and Cabin Safety	Passenger related	Where the actions of a passenger adversely or potentially affects the safety of the aircraft.
Operational	Crew and Cabin Safety	Unrestrained objects	When objects are not appropriately restrained for the aircraft operation or phase of flight.
Operational	Fire Fumes and Smoke	Fire	Any fire that has been detected and confirmed in relation to an aircraft operation.
Operational	Fire Fumes and Smoke	Fumes	When abnormal fumes or smells are reported on board the aircraft.
Operational	Fire Fumes and Smoke	Smoke	When smoke is reported to be emanating from: a) inside the aircraft; or b) an external component of the aircraft.
Operational	Flight Preparation/Navigation	Aircraft preparation	Errors or omissions during the planning and/or pre-flight phase that affect or may affect aircraft safety in relation to: a) the aircraft's weight; b) the aircraft's balance; c) the aircraft's structural integrity; d) the aircraft's performance; e) the aircraft's flight characteristics.
Operational	Flight Preparation/Navigation	Lost / Unsure of position	When flight crew are uncertain of the aircraft's position and/or request assistance from an external source.
Operational	Flight Preparation/Navigation	Other Flight Preparation/Navigation Issues	Navigation - Flight planning occurrences not specifically covered elsewhere.
Operational	Flight Preparation/Navigation	VFR into IMC	An aircraft operating under the Visual Flight Rules enters Instrument Meteorological Conditions.
Operational	Fuel Related	Contamination	When the presence of a foreign substance is found in fuel.
Operational	Fuel Related	Exhaustion	When the aircraft has become completely devoid of useable fuel.
Operational	Fuel Related	Leaking or Venting	Relates specifically to the unplanned loss of fuel from a fuel tank or fuel system.
Operational	Fuel Related	Low fuel	The aircraft's supply of fuel becoming so low (whether or not the result of a technical issue) that the safety of the aircraft is compromised.
Operational	Fuel Related	Other Fuel Related Issues	Fuel related occurrences not specifically covered elsewhere.

Operational	Fuel Related	Starvation	When the fuel supply to the engine(s) is interrupted, but there is still usable fuel on board the aircraft.
Operational	Ground Operations	Foreign Object Damage/Debris	Any loose objects on an aerodrome have caused, or have the potential to cause, damage to an aircraft.
Operational	Ground Operations	Ground handling	Any ground handling and aircraft servicing that caused, or has the potential to cause injury or damage to a stationary aircraft.
Operational	Ground Operations	Jet blast/Prop/Rotor wash	Any air disturbance from a ground-running aircraft propeller, rotor or jet engine that has caused, or has the potential to cause, injury or damage to property.
Operational	Ground Operations	Other Ground Ops Issues	Ground operation occurrences not specifically covered elsewhere.
Operational	Ground Operations	Taxiing collision/near collision	An aircraft collides, or has a near collision, with another aircraft, terrain, person or object on the ground or on water during taxi.
Operational	Miscellaneous	Missing aircraft	The aircraft is reported as missing.
Operational	Miscellaneous	Other Miscellaneous	Miscellaneous occurrences not specifically covered elsewhere in this manual.
Operational	Miscellaneous	Rope break/Weak link failure	Towplane separation incident necessitating a modified circuit.
Operational	Miscellaneous	Rope/Rings airframe strike	Airframe struck by launch cable or rings. Includes entanglemt with rope.
Operational	Miscellaneous	Warning devices	Situations in which an aural or visual aircraft warning device activates to alert the flight crew to a situation requiring immediate or prompt corrective action.
Operational	Miscellaneous	Winch Performance Issue	Any incident caused by poor winch performance, such as power failure, or mechanical reasosn.
Operational	Runway Events	Depart/App/Land wrong runway	An aircraft that: a) takes off b) lands, c) attempts to land from final approach d) operates in the circuit at, to or from an area other than that authorised or intended for landing or departure
Operational	Runway Events	Other Runway Events	Runway event occurrences not specifically covered elsewhere.
Operational	Runway Events	Runway excursion	An aircraft that veers off the side of the runway or overruns the runway threshold.
Operational	Runway Events	Runway incursion	The incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.
Operational	Runway Events	Runway undershoot	Any aircraft attempting a landing and touches down prior to the threshold.
Operational	Terrain Collisions	Collision with terrain	Any collision between an airborne aircraft and the ground, water or an object, where the flight crew were aware of the terrain prior to the collision.
Operational	Terrain Collisions	Controlled flight into terrain (CFIT)	When a serviceable aircraft, under flight crew control, is inadvertently flown into terrain, obstacles or water without either sufficient or timely awareness by the flight crew to prevent the collision.
Operational	Terrain Collisions	Ground strike	When part of the aircraft drags on, or strikes, the ground or water.
Operational	Terrain Collisions	Wirestrike	When an aircraft strikes a wire, such as a powerline, telephone wire, or guy wire, during normal operations.
Technical	Powerplant/Propulsion	Abnormal Engine Indications	A visual or cockpit warning that indicates an engine is malfunctioning or operating outside normal parameters.
Technical	Powerplant/Propulsion	Engine failure or malfunction	An engine malfunction that results in a total engine failure, a loss of engine power or is rough running.
Technical	Powerplant/Propulsion	Other Powerplant/Propulsion Issues	Powerplant / Propulsion occurrences not specifically covered elsewhere.
Technical	Powerplant/Propulsion	Propeller malfunction	The failure or malfunction of an aircraft propeller or its associated components.
Technical	Powerplant/Propulsion	Transmission & Gearboxes	The failure or malfunction of an aircraft transmission/gearbox and/or its associated components.

Technical	Systems	Avionics/Flight instruments	The partial or complete loss of normal functioning of the avionics system or its components.
Technical	Systems	Electrical	The partial or complete loss of normal functioning of the aircraft electrical system.
Technical	Systems	Flight controls	The partial or complete loss of normal functioning of a primary or secondary flight control system.
Technical	Systems	Fuel	The partial or complete loss of normal functioning of the fuel system.
Technical	Systems	Hydraulic	The partial or complete loss of the hydraulic system.
Technical	Systems	Other Systems Issues	Technical - Systems occurrences not specifically covered elsewhere.