



Soaring Safaris Information & Briefing for 2023-24 Season

1. Documentation

The following documentation is required before flying. We need this to be able to recognise the validity of your Glider Pilots Licence in terms of South Africa's regulations and more importantly, to confirm the competency and currency of the pilot:

- Completed booking form giving personal details, experience, currency and next of kin information this is required prior to acceptance of the booking.
- Completed & signed IGCSA membership application form – this will be completed on your arrival at Bloemfontein.
- If you are flying a ZS registered glider you have to apply to the South African CAA for a validation of your GPL. We will send you details of what you need to do to complete this validation.
- Copy of (valid) glider pilot licence
- Copy of (valid) pilot medical, Class 2 or equivalent
- Copy of last two pages of your glider pilot log book
- **Copy of accident and repatriation insurance**

Please ensure that all information is up to date at your arrival, particularly concerning experience and currency as the South African CAA are making increased demands regarding pilot checks.

2. Charges

Glider hire rates:	Weekly Rate
JS1c (18m)	€1700
Duo Discus	€1750
Janus c	€1650
LS6c-15/18wl	€1300
Nimbus 3	€1150
Ventus b 15/16.7	€1150
LS7wl	€1100
LS4	€1040

Individual days are charged pro-rata based on the weekly rate.

Please note that all hire fees must be paid before 6 weeks before your first flying day.

Aerotow costs: For the 2023/24 season the minimum aerotow cost will be €XX (to 6100ft amsl, 1600ft agl) and €XX per extra 100ft above 6100ft. These are little more than last seasons rates, however in the event that our input costs do change or that the R/€ exchange rate changes significantly we may have to adjust our prices.

Engine Use on ZB: For the 2023/24 season the costs for starting and running the Jet Engine on ZB are as follows:

Engine start: €50 per start after the first start, which is free.

Running costs: €10/min for all engine running time.

Facility fee: The facility fee covers the use of Bloemfontein Gliding Club facilities, including the clubhouse, swimming pool, shower/toilet block. In addition the facility fee covers the costs of using Soaring Safaris vehicles on the airfield and facilities such as the Wi-Fi internet, provision of weather forecast and oxygen refilling. The facility fee is a weekly rate of € 475, charged per day per glider. Pilots using the campsite will be charged an additional R150.00/day to cover the costs of hot water and cleaning.

SSSA Affiliation.: R1000 per pilot. In the case of two-seaters, only pilots flying as P1 require SSSA affiliation & GPL validation.

Shade netting fee: Privately owned gliders using the shade netting are charged daily at a weekly rate of €125 (open class, 20m & 18m gliders).

Other charges: Road retrieves using Soaring Safari vehicles are charged at ZAR 17.00 per km to cover fuel, wear and tear. There are no charges for: oxygen, badge or record claim validations, cross-country coaching, post-flight analysis, P-bags(!), etc ...

3. Soaring Safaris Glider Insurance

Soaring Safaris gliders are insured comprehensively with an excess of ZAR 20,000. The insurance excess can be reduced to zero by paying ZAR 3,500 (for each pilot), but the zeroing of the excess does not apply in cases of avoidable damage caused by negligence or carelessness, for example driving over a wing or failing to lower the gliders undercarriage for landing.

For ZB specifically the excess insurance is £2000 and there is no excess insurance

4. Bloemfontein Gliding Club

Soaring Safaris flies at New Tempe Airfield and shares facilities with the Bloemfontein Gliding Club.

BGC operates on an occasional basis any changes to the operational procedures will be covered in the daily briefing.

We operate a bar in the club on a daily basis and typically offer evening meals two or three times a week. The food and drink is run on a 'tab' system with weekly payment or payment at the end of the visit.

5. Glider Information

Included in this information pack is the key data for each Soaring Safaris glider, including placard speeds, weight limits, and an equipment & instrumentation list. The website references for manuals for variometer and navigation systems, radios, Flarm and MH oxygen systems are below. It is recommended that pilots familiarise themselves with their glider and instruments before arriving in South Africa, particularly with respect to Flarm and storing electronic task declarations for pilots attempting FAI badge flights. We have hard copies of all these manuals at Bloemfontein.

We want you to treat our gliders as if it were your own. We spend a lot of time and effort keeping them in "tip top" condition, and would appreciate it if you would help us maintain them this way. If you do have any problems with the gliders or their ancillary equipment please report them to Dick, Mannie, Riaan or Shaun.

All gliders must carry a valid 1:1000000 map. This is a legal requirement, though not particularly useful as the maps lack the revised airspace limits that are specially negotiated for us to be able to fly out of New Tempe. It is also a legal requirement that South African gliders carry a first aid kit and a valid Authority to Fly (or equivalent), Weight and Balance report and Certificate of Registration. All these documents will be in your glider.

Glider pockets have limited stowage capacity and should only be used for essentials such as mobile phone, tools and P-bags. A packed three-course lunch does not count as an essential! We suggest carrying a spare bottle of water in the fuselage baggage area in case of a landout.

Please Please Please do not carry chocolate or sweets that can melt and make a sticky mess in the cockpit. The local Spar supermarket has a good variety of food and drinks that are suitable to take in the glider. If you spill anything other than water in the cockpit please make sure that it is thoroughly cleaned up so that it doesn't leave a sticky residue. This may require you to remove the seat pan.

Do not remove equipment from the gliders with the exceptions of the Flight Recorder or SD card and the oxygen bottle if it needs refilling. If you want to install your own equipment in the glider please get advice from Dick, Mannie or Shaun before you do so.

All Soaring Safari gliders carry oxygen equipment. If you use the cannulas, please clean them after your visit (there is a box with cleaning fluid in the office). If the oxygen bottle needs refilling, please remove it in the evening after the flight and leave in the office on the table. We fill bottles either later on in the evening or at 07:00 the next morning, so please make sure that you give them to us in good time so that we can plan to fill them when we have time to do so.

Dusty canopies can cause refractive problems so we suggest regular cleaning of the canopies using the canopy cleaner, lots of water and one of the clean canopy cleaning leathers.

Website references for manuals

LX Navigation (inc. Colibri & Flarm Redbox): <http://www.lxnavigation.si/avionics/downloads/manuals.cfm>

Cambridge Aero Instruments: <http://www.cambridge-aero.com/manuals.htm>

Mountain High (oxygen systems): <http://www.mhoxxygen.com/> (look under the relevant system)

Dittel (VHF transceivers): <http://www.cumulus-soaring.com/dittel.htm>

Becker (VHF transceivers): <http://www.cumulus-soaring.com/becker.htm>

Clearnav(Navigation Screen):<http://www.clearnav.net>

Soaring Safaris Glider Key Information

	ASH25 162	Duo Discus UT	JS1b/c Revelation ZZ & ZB	ASH27b - VS VS	LS6c-15/18wl JCB
Vne (at sea level)	151 kts	151 kts	290 km/h	146 knots	151 kts
Vne (at 10000 - 16500 ft)	135 kts	130 kts	240 km/h	124 knots	122 kts
Rough air	100 kts	103 kts	203 km/h	99 knots	103 kts
Manoeuvre	100 kts	103 kts	203 km/h	99 knots	103 kts
Aerotow	100 kts	97 kts	180 km/h	86 knots	103 kts
U/C down	100 kts	97 kts	200 km/h	99 knots	103 kts
Flaps	P2 & 3 = 124 kts P4 & 5 = 86 kts L = 76 kts	n/a	P3 = 240 km/h P4 = 170 km/h P5 = 170 km/h L = 160 km/h	+4 flap = 86 knots +5 flap = 76 knots	-5 to 0 = 146 kts 0 to +10 = 103 kts +10 to +15 = 81 kts
Min.cockpit load	75 kg		70 kg		75 kg
Max.cockpit load	90 kg		110 kg		110 kg
Ballast weights	tail ballast		no	tail ballast	
Water ballast capacity			186 litres	100 litres	150 litres
Altimeter units	feet	feet	metres	feet	feet
Airspeed Indicator units	knots	knots	km/h	KPH	knots
Variometer & Navigation Systems	Cambridge 302 GPS-NAV	Cambridge 301 Cambridge 302 PDA iPaq 2940	LX8000	Cambridge 320, 303 and HP4700 Ipaq	Cambridge L-NAV
Radio				Becker AR620	
Flight Logger			(LX8000)	Cambridge 302	
Flarm	fitted	Fitted	Fitted	fitted	fitted
Oxygen System	MH Elect Demand	MH Elect Demand	MH Elect Demand	MH Elect Demand	fitted

	Nimbus 3 HS	Ventus b 15/16.7 GD	Discus B JMM	LS7wl PE	LS4a 98
Vne (at sea level)	270 km/h	250 km/h	135 kts	270 km/h	151 kts
Vne (at 10000 - 16500 ft)	230 km/h	250 km/h	131 kts	219 km/h	
Rough air	200 km/h	189 km/h	108 kts	191 km/h	103 kts
Manoeuvre	200 km/h	189 km/h	108 kts	191 km/h	103 kts
Aerotow	180 km/h	180 km/h	97 kts	191 km/h	103 kts
U/C down	180 km/h	180 km/h	97 kts	270 km/h	151 kts
Flaps	Positive flap 86 kts	0, +1, +2 & L 86 kts	n/a	n/a	n/a
Min.cockpit load	72 kg	75 kg	80 kg	70 kg	65 kg
Max.cockpit load	90 kg	110 kg	110 kg	120 kg	110 kg
Ballast weights	nose ballast			nose ballast	
Water ballast capacity					
Altimeter units	feet	feet	feet	feet	feet
Airspeed Indicator units	km/h	km/h	knots	km/h	knots
Variometer & Navigation Systems	Cambridge S-NAV	Cambridge 302	Cambridge L-NAV	Cambridge L-NAV	Cambridge L-NAV
Radio					
Flight Logger					
Flarm	fitted	fitted	fitted	fitted	fitted
Oxygen System	fitted	fitted	fitted	fitted	fitted

NB – These notes are supplied as a guide and are not a substitute for the gliders flight manual. Pilots should read the flight manual for the glider they are planning to fly and know the limiting airspeeds and any special handling

characteristics. In particular, if they plan to fly with water ballast, they should familiarise themselves with the change in characteristics associated with carrying ballast and the limits of ballast specified in the flight manual.

6. General Site Briefing

For first time visitors to New Tempe (and South Africa), there is a large amount of information to absorb and understand. These briefing notes are intended to allow visiting pilots to prepare before arriving at New Tempe Airfield. However a face-to-face site briefing from Dick, Mannie or Shaun is still required, even for pilots who have flown here before, to ensure that all critical information is fully comprehended, especially concerning the latest airspace restrictions and derogations. The Soaring Society have produced some helpful safety notes for visiting pilots that you will find on our notice board along with our Emergency Procedures and Emergency telephone numbers.

6.1 Heat & Sun

Most Soaring Safaris visitors arrive from a northern hemisphere winter and the change in altitude, temperature levels and sunshine can be quite dramatic. Avoid over-exertion in the heat, especially in the first few days while still acclimatising. Remember that density altitude affects humans as much as machines! Liberal and frequent use of Factor 30+ sunscreen helps prevent sunburn spoiling your visit. Avoid being in the full sunshine for too long, and wear a hat when outside to guard against sunstroke. Morning sunshine is particularly dangerous as the cool temperatures are deceptive. If you wear open sandals be careful to protect the sensitive skin on the top of your feet; burnt feet are very painful.

You will become dehydrated if you don't drink enough. The climate is not only hot, but can be very dry, so you may be sweating profusely, but you don't realise it, because the sweat evaporates almost immediately giving the perception that you are not sweating. The early part of the day can be particularly deceptive as it feels cool, but water loss is occurring. If you feel at all thirsty, then you are already dehydrated. Generally assume that three litres of water need to be drunk during the day. Water is the best hydrating agent, cold drinks, alcoholic beverages (in the evening of course!) don't do the job and in some instances may have some dehydrating effects - especially red wine - so additional water should be taken to compensate.

(The attached article from Dr Mike Pascoe gives more information on dehydration.)

6.2 Effects of Density Altitude

New Tempe Airfield (like most of the flying area) is at 4500ft amsl. The high density altitude has physiological effects on pilots and performance effects on gliders.

At the altitudes you may be flying at, the decrease in oxygen levels and reduced partial pressure can cause mild hypoxia with the possible symptoms being lack of mental and visual acuity, headaches, shortness of breath and fatigue. The onset of these symptoms are insidious and you will not be aware of the debilitating effect they will have on your performance. Acclimatisation through increased red blood cell mass takes days or even weeks. When flying, we suggest that you use oxygen systems below 10,000ft during first one or two days.

Concerning the glider, there is good news and bad news. The good news is that the True Air Speed (TAS) at altitude is 10-15% higher than the Indicated Air Speed (IAS) so cross-country speeds are boosted significantly. It's like having a permanent tailwind. The bad news is that indicated limiting airspeeds such as Vne, need to be reduced as flutter effects are linked to TAS, not IAS, but the glider should still be flown according to the other placarded manoeuvring speeds. Be aware that ground speeds are higher than for the same indicated airspeed at sea level. So touchdown ground speeds are higher and the landing run proportionately longer. Whether flying a familiar glider or a new type, care is required to ensure limiting airspeeds are not exceeded. It is for this reason that missed approaches should be flown with especial care to ensure that the Vne (for the high density altitude) is not exceeded due to a gust or other wind effects. We suggest using the Vne at 10000 feet as the limit for missed approaches as on a hot day the density altitude at ground level at New Tempe can be as high as 8000 feet!

6.3 Polaroid Sunglasses

Don't wear them. The dust in the air can have a polarising effect, especially near sunset which combined with polarising sunglasses can cause a black out. Soaring Safaris recommends Mile High sunglasses.

6.4 Airfield Radio Frequency

The airfield radio frequency is 131.30. Please keep the radio on this frequency while within 25km of the airfield – up to Krugersdrift Dam - in order to maintain general situational awareness of both glider and powered traffic. Prefix any calls with the word "Glider". This is an airfield frequency shared with the powered traffic so do not use it like a chat frequency.

6.5 Parachuting

Occasionally there is parachuting on the west side of the airfield, either by sports parachutists (using Cessna-sized aircraft), or by the SA Army (using C130 Hercules). Any parachuting activity will typically be mentioned during the morning briefing, but if there is any unforeseen activity, then this will be advised on the airfield frequency. When parachuting is in progress do not overfly the airfield and remain clear of the drop zone to the northwest and north. If you wish to land, plan a circuit well to the east of the airfield to avoid any conflict with the drop zone on the west side.

6.6 Airfield Layout

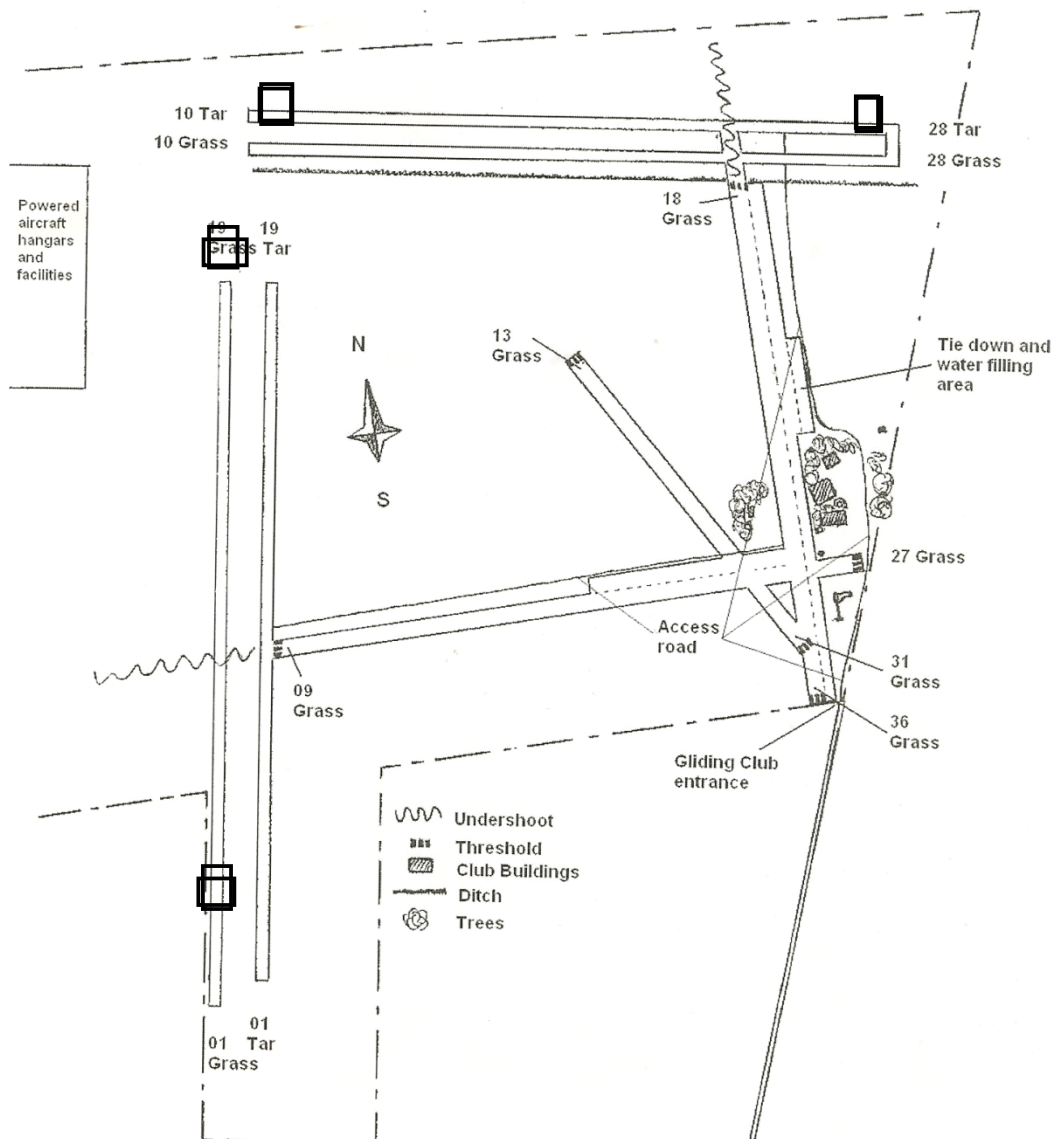
A diagram of the airfield layout is shown below. There are three grass (dirt) runways: 18/36, 09/27 and 31 (landing only), and two tar runways 10/28 and 01/19. The areas marked as grass runways 10/28 and 01/19 parallel to the tar runways are dirt track NOT RUNWAYS. As a general rule, the tar runways are for powered aircraft movements and the grass runways for gliding operations, but there is no prohibition on using the tar runways if necessary.

Gliding operations usually use 18/36 with 31 as an additional landing option. 27 is used in strong westerly winds. There has never been any need to use 18 for take-offs, nor to use 09 for take-off or landing. The tar runways are available for landing gliders if required provided that an advisory radio call is made beforehand to avoid conflict with powered aircraft.

On landing do not use the paved section of 36, but land on the grass area to the right of it. On all other grass runways land on centre line and do not taxi off the centre line unless you are certain that the area is free from any holes that may damage the glider.

There are two windsocks, one near the intersection of 27 & 31, and one to the west of 01/19.

The airfield is home to meerkats, aardvarks and spring hares (all of which dig holes of various sizes), ants (who build concrete-hard anthills up to a metre high), and jackals and steenbok (who occasionally wander across the runway while gliders are landing). Every day Soaring Safaris checks and fills new holes on the runways likely to be used for glider operations, but care must be taken, especially when towing out. If you find a new hole – hopefully before putting a foot/glider/car into it – please tell us and we will mark it and fill it when convenient. It is not recommended to put your hand into any of the holes, as some species of snake like to hide in them and the meerkats, while cute, are rabies carriers.



6.7 Airfield General

The central Free State is situated in an area of very cold and dry winters. The grass surface is very fragile and we have to take special care of our runways as damage caused during the busy summer season is aggravated by the very dry and sometimes windy winters. In order to minimise wear and tear of the surface we expect all our visitors to obey the following common sense rules when using the airfield.

Please drive slowly everywhere on the airfield and only use the designated roads and parking areas. Cars are allowed on runways only for the purpose of moving gliders. When driving on the airfield, please do not drive in tracks of previous cars, but rather use an area where damage to grass is not evident.

If you see other users not obeying these guidelines please stop them and politely ask them to comply.

6.8 Briefing

Briefing is held every morning at 10:00, please be prompt and avoid being part-way through towing out the glider or filling with water when briefing starts. Typically the briefing includes a review of the previous day's flights, safety information, an extensive weather briefing followed by task setting. The weather briefing includes predicted tephigrams over the potential flying area. The attached sheet indicates the location of the ascent predictions. When appropriate we will have discussions on any gliding related subjects, such as outlandings, cross country performance, flying near thunderstorms etc.

6.9 Towing Out

All gliders have tow-out gear and there are three Soaring Safaris vehicles available for towing the gliders to the launch point, but in the event that these are all in use, there are tow-out ropes in the hangar that you can use with a car without a hook.

Extra care must be taken if towing out after glider launching has started. Runway 36 has restricted width outside the hangar so a glider pulled out from the hangar paved area, or emerging around the corner from the shade netting area will block launching. Procedures will be given in the morning briefing, but the usual technique is to wait until there is a gap between launches (and landing tugs), to tow through the 'pinch point' outside the hangar, and then turn right on to 09/27 and then left on to 31 to reach the 36 launch grid area. This can be done with minimal impact on the launching.

6.10 Gridding

As 36 is used most often for take-offs, grid with the first (or first & second) gliders on the tar strip, if in use, else the adjacent grass runway, then queue the other gliders in a U-shape formation back around the open area on the west corner of 36 & 31. If the winds are light, the tugs will land on 18, but if the wind is strong northerly or north-westerly, then the tugs may need to land on 31, in which case a gap must be left in the grid U-shape so that gliders in the queue are not at risk from the trailing tow rope during the tugs landing. (This will be usually covered in the morning briefing if necessary.)

6.11 Canopies, canopy covers, and tail dollies

Whenever possible, keep canopies shut and locked – especially when towing out – with the canopy cover in place. Tail dollies must be removed whenever the glider is parked. The wing-walker can be left in position. Without the canopy cover in place, cockpits will overheat - this can cause the canopy to stick on the cockpit frame or even crack the canopy - and the strap buckles can become dangerously hot. Upward hinging canopies can act like lenses in some sun conditions, causing hotspots in the cockpit that can melt plastic or even start a fire. Dust devils can cause dramatic changes in the wind direction and strength that may swing the glider into other gliders or cars unless the tail dolly is removed when the glider is parked.

6.12a Aero Tow currency.

The launch method used is aero tow using powerful C182 tugs and conditions on tow can be very turbulent. Therefore it's important that you are current on aero towing and proficient in maintaining position behind the towplane bearing in mind the turbulence associated with the slip stream and also the effects of strong thermal activity. This may be particularly noticeable in the lighter unballasted gliders. As we don't always have the capacity to offer familiarisation flights if you are doubtful about your aero tow currency you should arrange a check flight before you arrive in South Africa.

6.12b Launching Procedure

Normal pre- take-off cockpit checks except it is recommended to leave the canopy open until the last moment.

Radio check with tug, e.g. "Charlie Golf Yankee Papa Echo radio check", "Papa Echo Golf Yankee reading you fives", "Golf Yankee fives also", "Papa Echo call take-up slack when ready"

Hook on cable. Release checks, if required, should be done before the tug arrives.

When ready to launch, close and lock the canopy, check that it is "all clear above and behind", ask for the wings to be levelled, and radio call, e.g. "Golf Yankee take-up slack". Radio communication between glider and tug are vital so keep the DV panel closed to eliminate wind noise during the launch so radio calls from tow pilot can be heard clearly, If your glider is ballasted brief your wingman to make sure that the wings are balanced. If they are not, dump water from the overweight wing before commencing the launch.

When the rope is about to tighten, radio, e.g. "Golf Yankee all out".

Usual techniques and precautions apply. If a wing drops and cannot be immediately recovered, then release the rope. (A few minutes delayed launch is much better than an uncontrolled ground loop.) In a crosswind, most gliders are more controllable if the initial ground run is made with airbrakes open – but do remember to shut them!

6.12c Aerotow Procedure

Once rolling, the tug pilot will call on the airfield frequency advising of the take-off, so checking for any conflicting traffic. Use the normal tow position, just above the tug slipstream. After takeoff the tug may make a gentle partial turn to the northeast of the airfield before flying north to northwest or make a safety orbit to the east before going to the northwest. This tow pattern goes over landable fields in the earliest part of the launch and runways 28 tar, 18 grass or 27 grass are available in case of a problem. The tug pilot will aim to take you into good lift at a sensible height and safe distance from the airfield.

There is no set direction for the glider to turn after release, turning into the lift and avoiding the strong sink nearby is strongly advisable, but please do not release with the tow rope under excessive tension or pull up until you are sure the cable has been released. Once you have released give the tug a call to say that you are "off tow". If the tug has found a thermal and is turning in it carry on turning in the same direction after release

Standard emergency signals apply, that is, if the tug waggles its wings vigorously, then the glider must release immediately, and if the tug waggles its rudder the glider should check that the airbrakes are closed and locked. If the tug pilots suspects that your airbrakes are out he will make a safety call on the radio rather than waggling rudder. If the glider pilot is unable to release from the tug and unable to contact the tug pilot by radio, he should fly out to the left of the tug to attract the attention of the tug pilot.

6.13 Circuit & Landing Procedure

On returning towards New Tempe the radio frequency must be set to 131.30 once you have crossed the Krugersdrift dam and you should make a call to advise other traffic of your presence in the area and your intentions. Always prefix the call sign with the word "glider" so there is no ambiguity about what sort of aircraft you are. Make another radio call five or ten minutes before landing, giving approximate position and time to landing. There will normally be an acknowledgement call from the Soaring Safaris ground station, advising wind speed and direction and runway in use. New Tempe is not a controlled airfield, so the choice of landing runway is ultimately at the pilot's discretion, but please listen out for other traffic to ensure that there are no unnecessary circuit conflicts.

Glider circuits are flown on the east side of the airfield (right hand circuits for 36, 31 and 27; left hand circuits for 18), generally the opposite side to the power traffic. Pilots should position themselves in the circuit to give adequate space for other gliders about to land and for them to clear the runway.

If you have decided to use either of the two main tar runways make a clear call to announce which runway you will be using and the circuit direction and land long so that you don't block the runway for other traffic.

When landing on 36 we suggest that you land on the grass area to the right of the of the paved strip and after landing, try and move to the side on the runway (18/36 and 31) but only taxi off the runway if you are certain that the area is smooth enough and free of holes. Runway 27 is too rough to move off the centreline so you may need to land long to provide room for other gliders landing on that runway. If using 27 after 17:30 hrs you will be landing directly into the setting sun and visibility may be minimal; unless the wind is very strong we would recommend 31 as an alternative.

Congestion in the circuit: When you get back to the airfield after your "10 minutes to landing" call and there is no other traffic, please land without delay, so that the circuit and runways are clear for other inbound gliders. If you are on a final glide and hear that there are other gliders in the circuit, please don't arrive back without enough height to be able to plan the circuit and to give time for earlier arrivals to land ahead of you. Also bear in mind the experience level of other pilots and that they may not be comfortable with high levels of congestion.

If there are storms in the vicinity, be aware that the wind direction may change radically as a result of outflow from the storms. There may be dust fronts associated with these outflows which give a clear indication of the strength and direction of the outflow. If there is rain associated with the storm, the rain curtain is usually clearly visible. Generally these systems develop in the west and track in on a north easterly or easterly heading. If rain is threatening the airfield please try to plan the landing to give yourself time to get the glider into its hangar or tie down area and secured before it starts to rain. There is usually lightning associated with these storms and it is really dangerous to be out on the airfield when the storms arrive. The gust front can be moving as quickly as 40kph, so make certain you land before it reaches the airfield.

Be aware, that if you are on a marginal final glide from the northwest that there are no safe out landing fields in the last 2km's immediately north of the airfield boundary. Unless you can return to the airfield with enough height reserve to fly a circuit you should find a thermal to gain more height, else look for a safe field to use for an out landing while you have enough height to find a good option. Remember, convenience does not trump safety, and hope is not a strategy!

6.14 Post-Landing

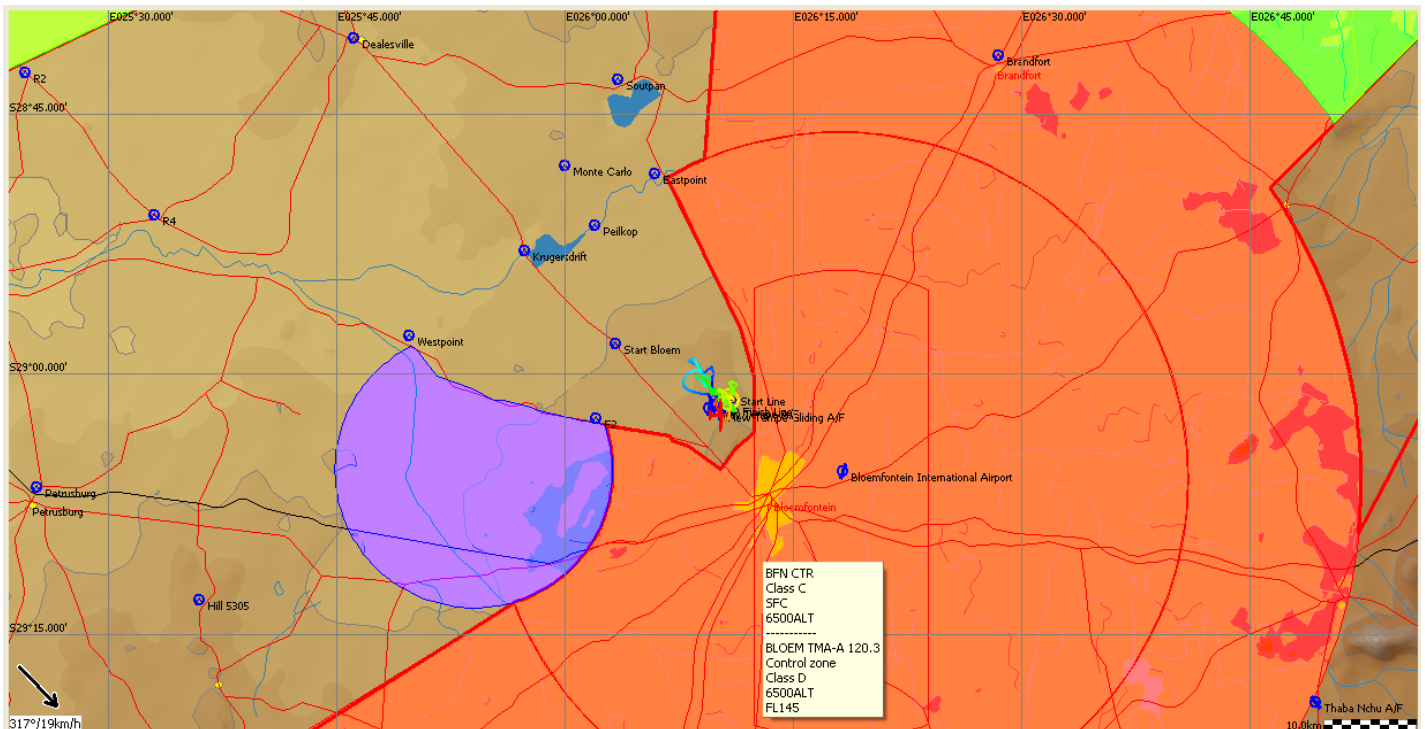
If the glider is still on the runway or partially obstructing it, please make every effort to turn the glider and push it clear – and do not attempt to fit the tow-out gear and tow it clear of the runway. Do not take vehicles onto the active runway.

When the glider is safely secured near the hangar or under the shade netting, then:

- Note your landing time on the launch log which is kept on the shelf outside the storeroom.
- Put the batteries and PDA on charge as soon as possible. Long flights every day places a heavy demand upon the batteries so maximise the charging time. PDAs are notorious for drawing high currents from external batteries and a discharged PDA battery will flatten the main batteries during flight.
- Hand in the flight recorder or SD card (box in the briefing room). This is necessary in order to refute any spurious accusations of airspace infringements or to address real airspace infringements. Plus we want to share your flight with the other pilots during the morning briefing and to post flights on OLC.
- If you wish to make an FAI badge or record claim, please advise Dick, Mannie or Shaun, Mannie or Shaun, who will print out the relevant form and assist in completing the claim.
- If you want a post-flight debrief and analysis using SeeYou, then please ask Dick, Mannie or Shaun, Mannie or Shaun.
- If there are any problems with the glider, please advise Dick, Mannie or Shaun, Mannie or Shaun.
- Go and have a cold drink ...

7. Airspace

New Tempe is very close to the edge of Bloemfontein International Airport CTR and under its TMA and CTA. To be able to glide at New Tempe we have negotiated a window in these airspaces and it is essential for our continued operation that we do not violate the boundaries of the window. The lateral boundaries of the window are clearly defined by easy-to-see geographic features and the vertical limit is FL145. In order to fly at New Tempe it is critical that you observe the airspace boundaries.



All flights in Soaring Safaris operations are required to be logged, using the flight recorder or SD card provided in the glider. We try to download all flight logs and check them on a daily basis. We do this so that we can confirm that there haven't been any infringements and to be able to refute false allegations, should they be made.

7.1 Bloemfontein CTR/TMA

Bloemfontein International Airport (BIA) is not a busy airport by international standards, with up to twenty scheduled flights each day, some military flights and some GA movements. BIA is just 15 km south east of New Tempe.

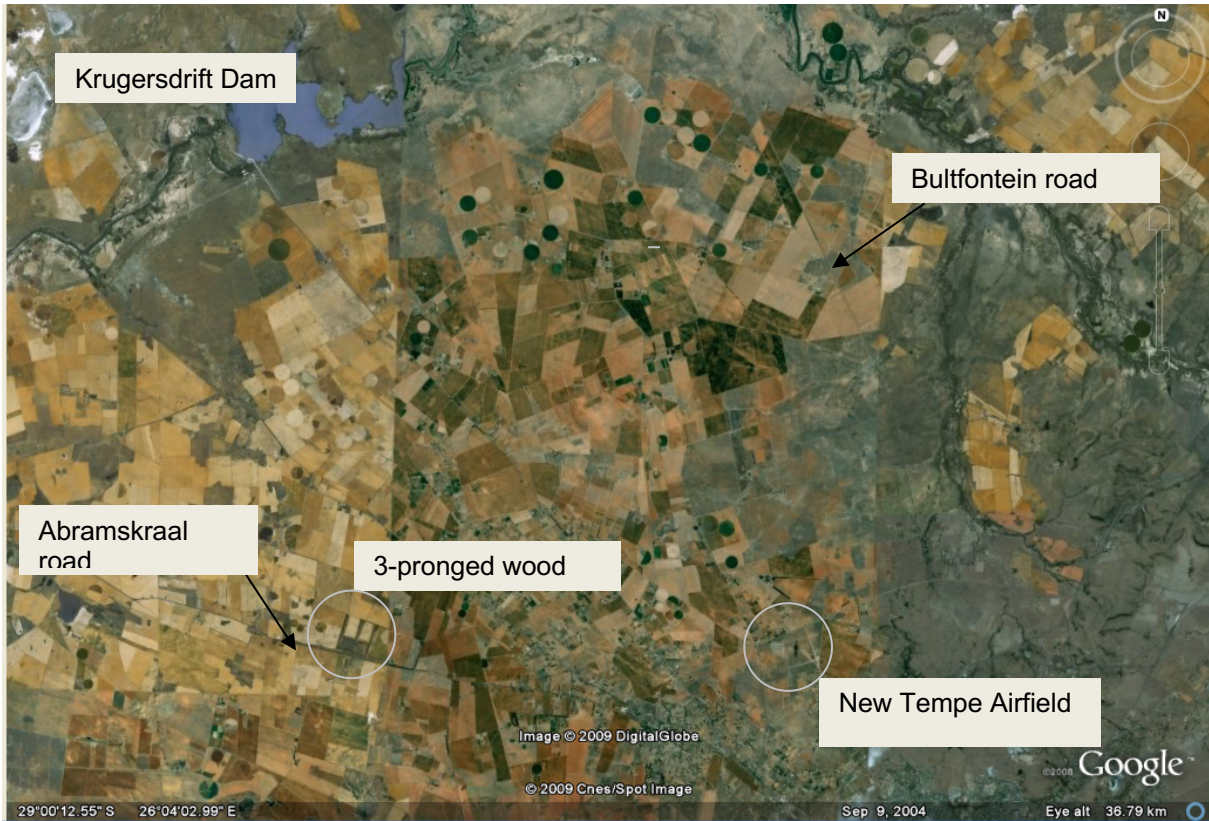
BIA's airspace is protected by its CTR, TMAs and CTA that connect it to the upper airway network. To allow gliding activities to take place at New Tempe we have a window in this complex of airspaces that allows gliders access to the unrestricted or less restricted airspace to the north, west and south. The boundaries of the New Tempe Gliding Window (NTGW) are mostly defined by clearly visible ground features being the Bultfontein Road on the eastern boundary, the N1 Highway on the south eastern side, and the Dealesville road and then the Abramskraal on the southern side. These will be shown to you on a photograph at our face to face briefing, but the general layout can be seen on the following schematic.

7.2 FAR29

This is a military training area that is used for ballistic training and for army-air force cooperation training. Military helicopters may fly in this area and occasionally large calibre artillery weapons are fired. These activities take place in the south east corner of this area. The remainder of the area is used for domestic farming activities.

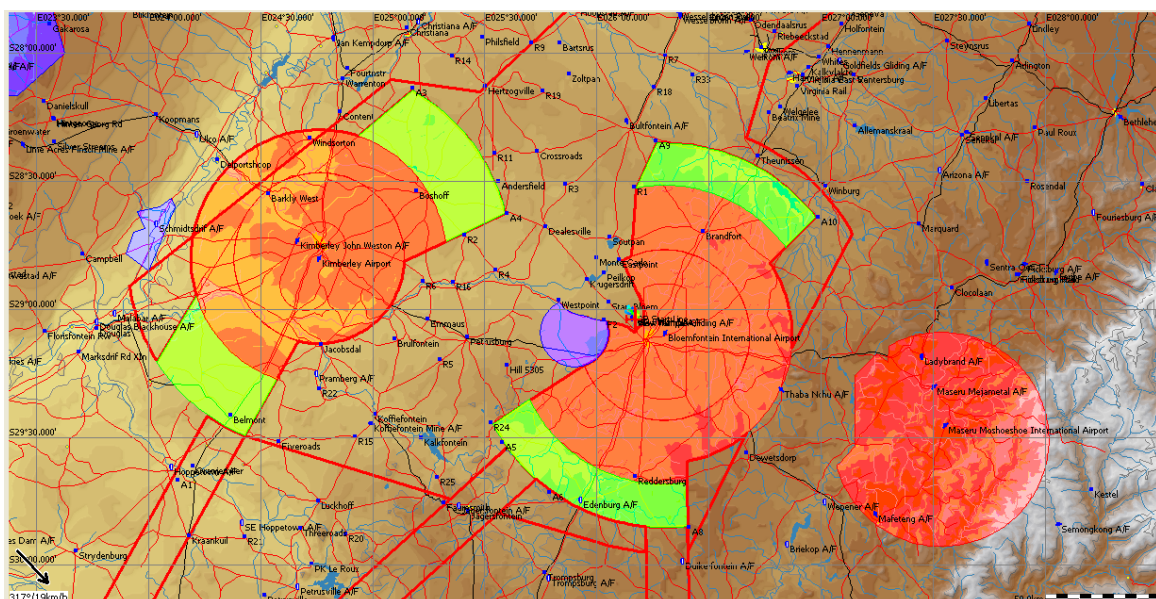
The waypoints of Westpoint and F2 define the northern limit of FAR29 for gliders, essentially the Abramskraal road. Gliders returning from tasks to the southwest or south should use Westpoint as a control point to avoid infringing FAR29. During the December and January holidays the military sometimes allow gliders to use this area

New Tempe



7.3 Kimberley

Like Bloemfontein, Kimberley has a Class C CTR and various Class D TMA segments. The only potential issue is when tasking to the northwest, and in such cases the waypoints A3, Andersfield, A4 and R2 should be used as control points.



7.4 General Flying Area

The area between Bloemfontein and Kimberley airspace is unrestricted up to FL145. Northwest of a line running SW-NE through Hertzogville the upper limit increases to FL195. Similarly, south of a line joining the southern limits of the Bloemfontein and Kimberley airspace stubs, approximately 25km south of Koffiefontein, the upper limit increases to FL195. In addition there are airways above FL145 running through Bloemfontein to Cape Town, Kimberley to Cape Town, and Bloemfontein to Port Elizabeth.

With very high cloudbases, it is very easy to inadvertently climb through FL145 into airspace. If the forecast is for such high cloudbases, normally a caution will be given during the morning briefing.

8. Cross-Country Briefing

This is only an outline briefing to give some indication of the conditions and issues with cross-country flying from New Tempe.

8.1 Landing Out - Fields

The general flying area within 150km of New Tempe is predominantly arable agricultural and consequently there are many fields that are suitable for landing out. The fields are generally large and flat therefore the main selection criteria are surface type and condition, obstructions and access.

Stubble fields would be first choice, followed by ploughed fields, and salt pans. Green fields are rarely pasture and tend to be scrubland, likely to be full of holes and anthills (similar to the centre of New Tempe Airfield). Treat them as mine fields and definitely best avoided. There are also many circular fields - these are fields that are irrigated with a centre point irrigation system. Such fields may be as much as 800m in radius and if clear of standing crops can be used for landings. However beware and plan the landing run so not to roll across the wheel tracks of the irrigation system as these may be like ditches and could seriously damage the landing gear.

Fields with a uniform brown surface are probably ploughed fields. The plough rows tend not to be deep, but the earth can be very soft and fine so a fully flared landing is essential. Do not fly the glider onto the ground. As you flare, providing that you have enough space ahead, bleed off the airbrakes so that you touch down at the minimum possible speed. Be prepared for a sudden deceleration on touchdown, ensure straps are tight and that any loose objects are secured before landing.

Fields with the brown surface visible between crops rows are generally acceptable if there are no other options, but the farmer may not appreciate you landing in his juvenile crop. If the surface is not visible, then the crop is mature. Summer crops in this area are mielies (maize) and sunflowers which can be up to 1.8m high – not landable.

Salt pans are dry lakes which in some cases may be used to harvest salt. However if there is no obvious evidence of workings the surface will be flat but may not be strong enough to support the glider. The edges will be firmer than the centre and if there has been recent rain then care should be exercised. Vehicle tracks would confirm the integrity of the surface and show an unobstructed run. On some pans there are fences and they can be difficult to spot. Access to salt pans can be difficult and many are now within a game reserve created by the farmers.

Obstructions are limited to electricity wires, telephone wires, and fences. If landing close to a farm or other substantial habitation, be aware that there somewhere there will be an electricity line running to the housing. Fences in fields are usually indicated by a change in colour in the surface.

Access to fields can be a major issue but must be treated as secondary to a safe landing. There are relatively few tar roads in the general flying area and the dirt roads can become heavily rutted or corrugated, limited driving speeds to less than 20kph. Fields are generally large, and access into the field may not be obvious from the air. As guidelines:

- When get below your comfort level, ½ to 2/3 of the cloud base and finding another thermal is not a certainty, start routing towards, towns, tar roads, farm houses, things that will make a retrieve easier if you don't find a thermal.
- As you get lower look for areas where there are landable fields and fly towards them also, call on the radio advising your position and altitude.
- When getting really low, start down-selecting landing fields to a few options and try and spot the access into the field itself, the route from a tarred road to the field access, and the nearest farmhouse or equivalent.
- Try and stop near the side of the field and close to the access point. Bear in mind that if landing in a soft field you will stop in a short distance. Also bear in mind that in the flare your head is only a metre or so above ground level and it becomes very difficult to judge distance at this low height.

8.2 Landing Out - Airfields & Airstrips

There are landable airfields or airstrips at:

- | | |
|---|--|
| ▪ Bultfontein - 86km N of New Tempe | ▪ Vryburg – 270km NW of New Tempe |
| ▪ Welkom - 125km NNE of New Tempe | ▪ Reivilo – 255km NW of New Tempe |
| ▪ Bothaville – 190km NNE of New Tempe | ▪ Kuruman – 320km NW of New Tempe |
| ▪ Wesselsbron – 135km N of New Tempe | ▪ Harmony (Virginia) – 125km NE of New Tempe |
| ▪ Philsfield – 140km NW of New Tempe | ▪ Koffiefontein – 125km SW of New Tempe |
| ▪ Bloemhof – 170km NNW of New Tempe | ▪ Gariep Dam – 180km SSW of New Tempe |
| ▪ Christiana – 160km NW of New Tempe | ▪ Philoppolis – 160km SW of New Tempe |
| ▪ Delareyville – 270km NNW of New Tempe | ▪ Petrusville – 185km SW of New Tempe |
| ▪ Jan Kempdorp – 180km NW of New Tempe | ▪ De Aar – 275km SW of New Tempe |

The waypoint called Andersfield is a derelict airstrip at a mine and is NOT landable.

The airfield at Schweizer-Reneke may not be maintained and it is probably best to consider it unlandable.

You may see other farm strips during your cross country flights. These may be used by microlights, cropsprayers, or private light aircraft and may not be suitable for use by gliders. Unless you are absolutely certain that the strip is wide enough for the glider then use a field, given of course that there is one available.

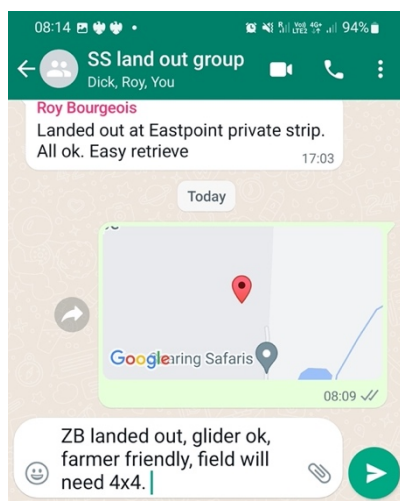
8.3 Landing Out Procedure

- Before landing out, make a final call over the radio giving your approximate position and stating that you are landing out.
- If you manage to scrape away after making the radio call, advise over the radio cancelling the land out call.
- After landing, make a radio call saying that you have landed safely.
- Write down the GPS latitude and longitude of the glider.
- Telephone in or SMS in your GPS position or our preferred method is for you to send us a “pin” using whatsapp to the SS land out group. Please ask Shaun or Dick to add you to the group before your first launch. Instructions on how to send a “pin” using WhatsApp can be found further down. The mobile phone coverage in our flying area is very good, and it is unusual not to have coverage. In the event that the signal strength is not good, try moving around or if possible move to higher ground to find an improved signal. If there is no coverage, try contacting another glider on the radio, and if that is unsuccessful try frequency 120.30, the area information frequency for other traffic, and get other passing aircraft to pass a message to the control tower at BIA. They will then forward the message to us. If that doesn't work try the emergency frequency 121.50. Bear in mind that if we don't have confirmation that you have landed safely by sunset we will alert search and rescue and initiate a search.
- If it is near sunset and there is no obvious sign of human activity, stay with the glider. It's too easy to get disorientated when it is pitch dark and you might not be able to find the glider again until daylight. In this situation you might have to spend the night in the glider.
- If before sunset, go and find how to get into the field, and if possible find a farmer to give road directions for the retrieve crew.
- Pilots can be proactive and make the retrieve quick and painless. Alternatively, pilots can make little effort, resulting in carry-out retrieves getting back to the airfield at 02:00 or later ...

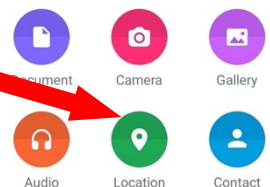
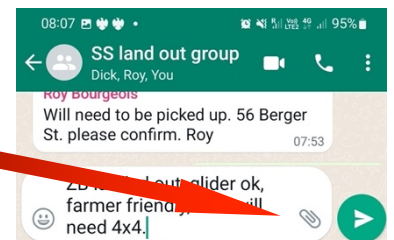
8.3a How to send or drop a “pin” using WattsApp.

Make sure you have the WattsApp application on your phone and then ask Shaun or Dick to add you to the “SS land out group”. Your mobile phone will need to have data enabled in SA for this to work.

From the WattsApp application, search for the SS land out group and then compose a message, let us know if you are ok and any relevant details (farmer contacted, condition of the field, any damage etc.) and then click on the paperclip on the right of the message box.



Select “Location”, and then select “send current location” (if next to the glider or the entrance to the gate). Only use share live location if you have plenty of battery and data! To send the location, you should then see a screen similar to that bellow. Don't forget to press the green arrow to send the message!



Make sure you get an acknowledgement, we will send a note when we are leaving to collect you and we will give you an estimated time of arrival and probably an update on the way.

8.4 Farms and Communications

If you are able to make contact with the farmer, then they are almost invariably helpful. Having a glider land on the farm is an unusual event and often a pilot may be the first person from off the farm that they have seen for days or even weeks. Some farmers may have a limited command of English and only speak Afrikaans.

If possible, ask the farmer to provide directions for getting to the glider as the most obvious route may not be the best one. Some dirt roads get heavily corrugated and a round-about route using tar roads can be a better option.

Mobile telephone coverage is excellent within 300km of Bloemfontein. Further away it may be intermittent – but then a landout more than 300km away will be a major enterprise anyway.

8.5 Land out Equipment

We strongly recommend that you carry in the glider:

- A bottle of water, at least one litre
- A torch (with a working battery)
- Insect repellent

8.6 Soaring Guidelines

The soaring conditions in South Africa can be the best in the world. A few guidelines to make the best use of the weather:

- Large clouds often have several thermal cores and it can be worthwhile searching around to find the best lift. Often the strongest lift is under the darkest part of the cloud with the flattest or concave base. There is little relation between the ground level trigger points and the clouds on days when we have very high cloudbase – there can be 4km between ground and cloudbase.
- Generally the lift is smoother and stronger higher up, and getting below the halfway point between cloudbase and the ground is rarely beneficial. Staying high also means you stay cooler, more comfortable and therefore able to make better decisions and in the cruise your true airspeed can significantly higher.
- Dust devils are a good indication of areas of lift, though you have to be quite low to rely upon them to mark thermal cores. Also bear in mind that dust devils have a life and ones more than a few km's away are likely to lose their contact with the ground before you get to them, and thus be difficult to locate.

The keys to fast cross-country speeds are, (1) maximising the average rate of climb in thermals, and (2) routing along lines of energy to minimise inter-thermal height loss.

- Maximise the average rate of climb by: centring quickly, stay centred, leave before the climb rate decays significantly; leave the thermal in the right direction and at a cruising speed; don't stop for every thermal, try to be selective and take only the good ones.
- Energy efficient routing takes experience but generally it is better to fly a little slower to avoid having to stop for weak climbs, and it can be worthwhile diverting up to 30° off track if the energy lines look good.

SeeYou is a very effective tool for post-flight analysis and helping identify opportunities for increasing cross-country speeds. If you want to have a thorough analysis, please ask Reb or Dick, Mannie or Shaun. But be warned – SeeYou analysis is uncompromising and is embarrassingly efficient at showing all errors!

8.7 Storms

The summer is the rainy season in South Africa and from January onwards it is not uncommon to have thunderstorms in the late afternoon on some days. Gliding in South Africa requires getting (a little bit) comfortable with storms, though how far you learn to 'cuddle up' to the storms can be a matter of personal preference.

Typically storms do not suddenly develop as they are a consequence of low level moisture and instability in the mid to upper levels that are associated with trough lines. South African storms can be related to passage of a frontal system or to convergence. The development is usually:

- Early towering cumulus.
- Isolated rain showers
- Rain becomes more intense and clouds show rapidly growing vertical development
- Blow off from the top of the storm to form the anvil of the cumulonimbus.
- Lightning and possibly hail (rain appears greener)

At this stage the thunderstorm is fully developed as a storm cell. Because of the prevailing strong westerly winds in the stratosphere the blow-off can be extensive, cutting off the sun's heating over wide area to the east of the storm cell. Given the strong upper winds the blow off can move very quickly. Under the blow-off the lift will be weaker.

It is possible for storm cells to combine and create a super storm with massive squall lines. If these are aligned with the direction that you are going they can provide some really exciting flying and may extend over 100kms. They are

however bad news if you need to cross through them to get home! Like isolated storms, squall lines will generally move in a north easterly direction. If you are unable to by pass them you should fly away from them to find a safe place to land.

The dangers of storms are:

- Squall lines or dust fronts, caused where the rain-cooled air descends to ground level rapidly and there is an outflow at ground level. The wind in dust fronts can be very strong and totally unrelated to the forecast wind for the day.
- Lightning, though there has been no recorded lightning strike on a glider in South Africa for many years.
- Hail that can reach the size of golf balls or larger.

The golden rules are:

Don't fly into rain

Don't fly into dust

Land well before and well clear of dust fronts or squall lines

Remember: "It's always better to be on the ground wishing you were in the air, than in the air, wishing you were on the ground".

9. General Information

Telephone numbers:

Dick Bradley: (+27) 083 280 1028

Tempe office: 051 451 1514

Radio frequencies:

New Tempe Airfield 131.30

Gliding Area 123.60

Inter Glider comms 123.40

Emergency 121.50/120.30

Wi-Fi password "soaring9845"

10. Road directions to New Tempe Airfield

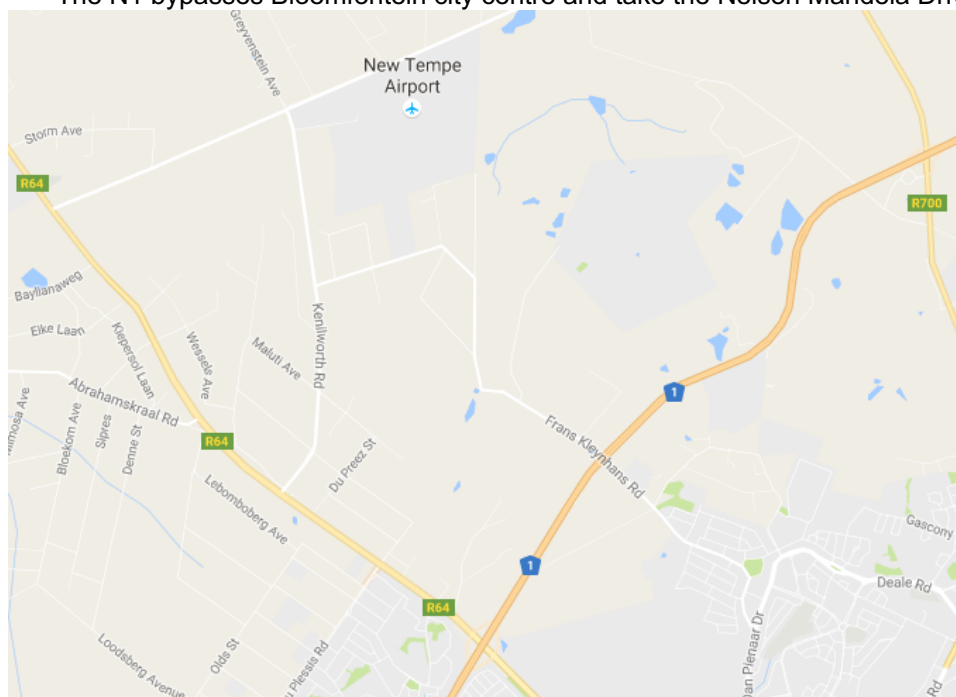
In South Africa we drive on the left hand side of the road, which is very convenient for our UK visitors and a nuisance for our visitors from the continent.

The speed limit on motorways and major roads is 120kph, 100kph on secondary roads and 60kph in built up areas. Traffic police use cameras, radar, lasers and gatsometers to detect speeding motorist and there is a permanent trap just before you get to Kroonstad.

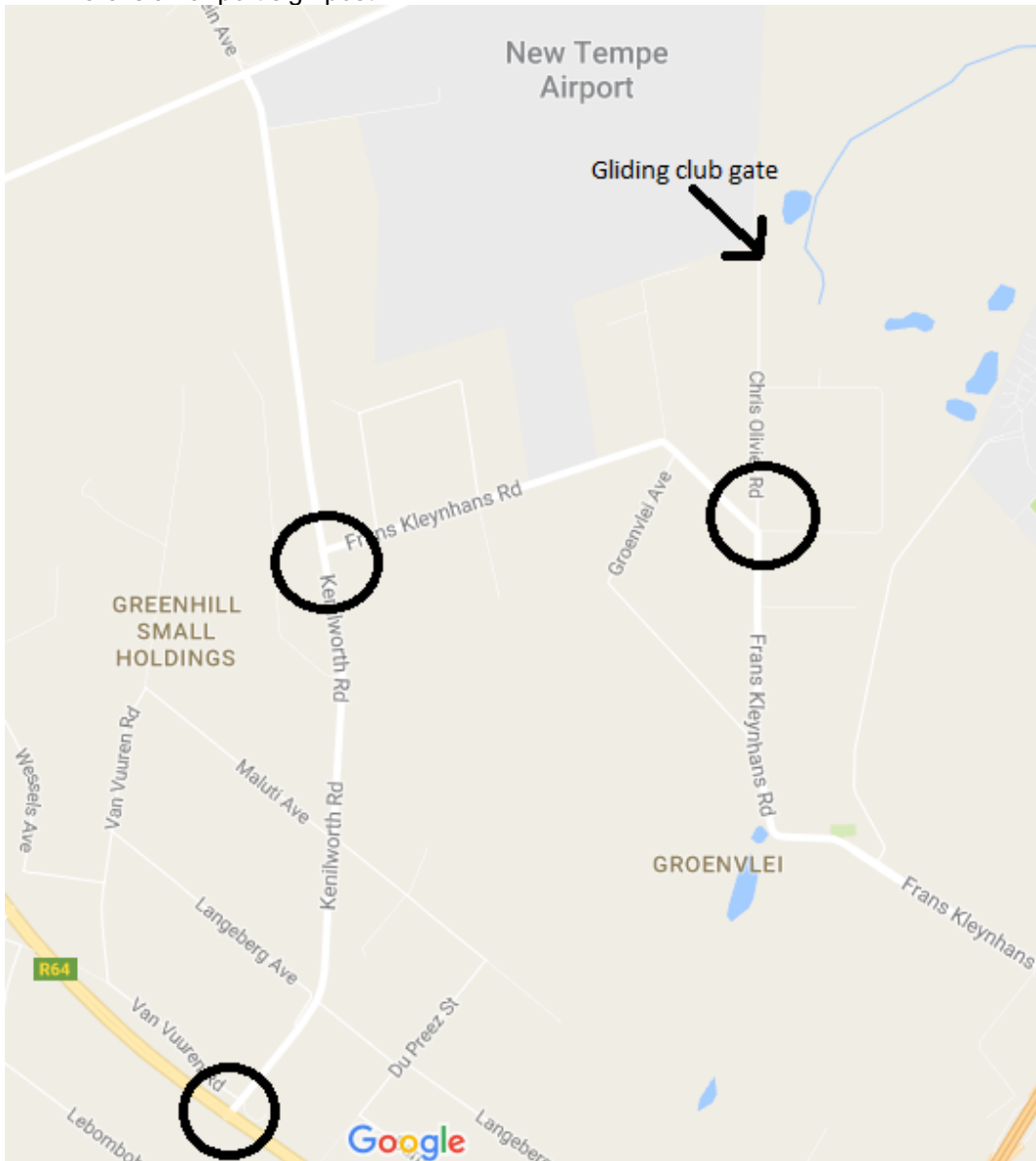
Before venturing out onto the road network just prepare for a novel experience as South African drivers are cavalier; we are not quite up to the Italian standard, but we come a good second.

By Road from OR Tambo Airport to New Tempe Airfield

- Leave the OR Tambo Airport parking area and take the R24 signposted to Johannesburg.
- Follow this highway past the Barbara Road off-ramp and Edenvale off-ramps until the road merges with the N12.
- Get into the left hand lane to go onto the N3 south.
- Take the N12 west to Kimberley and then the N1 to Bloemfontein. (There are road houses on the N1 and we can recommend the one that is 20km past the Kroonvaal Toll Plaza that serves an excellent Wimpy bacon and eggs breakfast for R35 per head.)
- There are three tolled sections of the N1: the first just out of Johannesburg, the second just after crossing the Vaal River into the Free State, and the third about 80km out of Bloemfontein, with a total cost of about R90.
- The N1 bypasses Bloemfontein city centre and take the Nelson Mandela Drive exit to the R64.



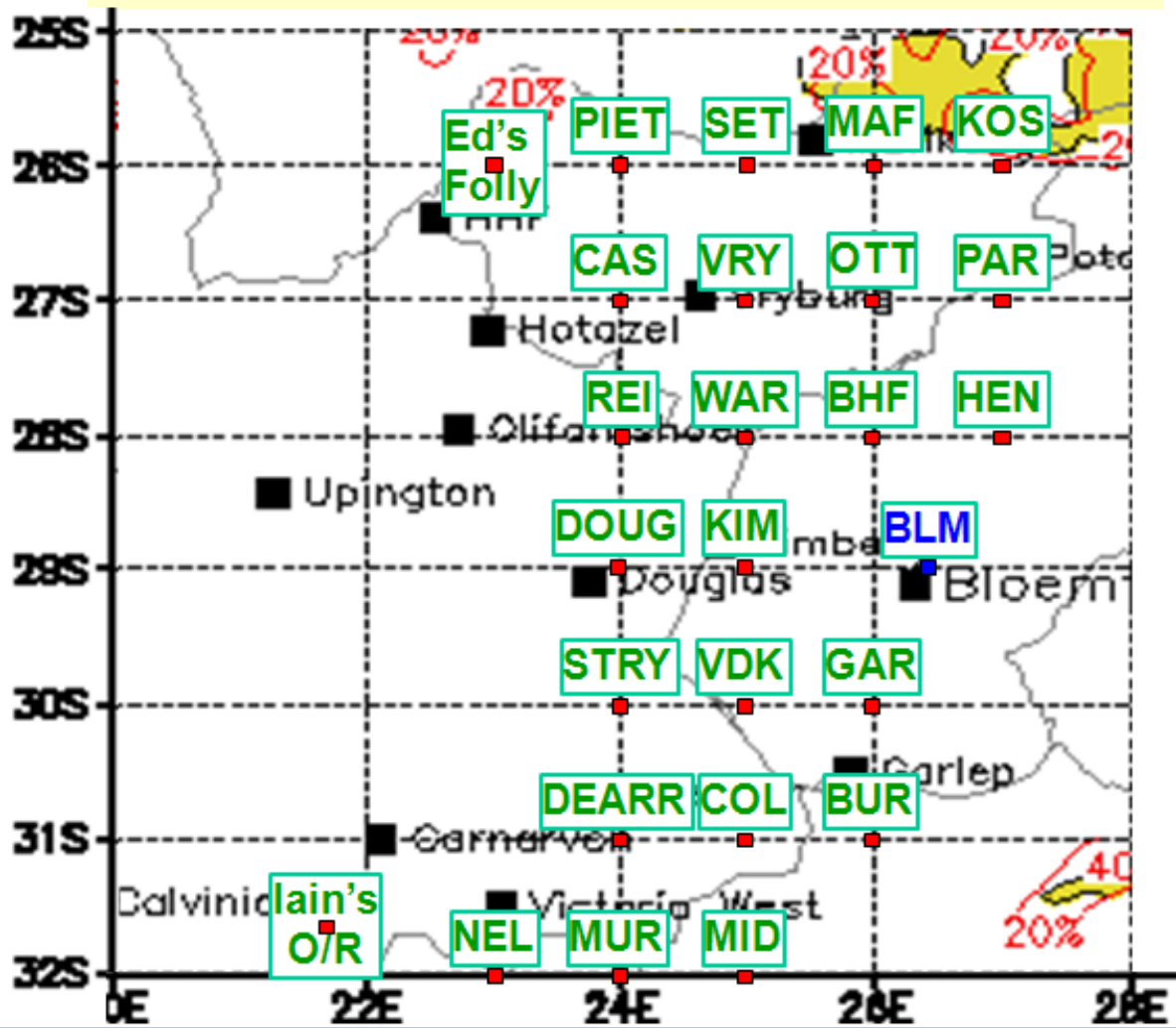
- Turn right at the off-ramp junction towards Dealsville.
- About 3km along this road just after passing Bains Game Lodge turn right to Tempe Airport and Kenilworth. There is an airport sign post.



About 2.9km down this road turn right into Frans Kleynhans Weg. The sign post is missing but there is a sign post for the “Emoya”, Follow this road until the 3-way stop and take the hard left turn (130 degrees) into Chris Olivier Road (again not signposted). Take this tar road to the end where you will see the gliding club entrance.

- There is a sliding gate at the entrance to the airfield that may be shut, but it should not be locked (if it is, telephone us). Please close the gate behind you.

Location of ascent predictions



All the ascent locations (except *) are at a major longitude-latitude intersection, and not the actual geographical location implied by the name. The ascent names are a shorthand code.

BLM*	Bloemfontein	REI	Reivilo
KIM	Kimberley	WAR	Warrenton
DOUG	Douglas	BHF	Bloemhof Dam
		HEN	Hennemann
STRY	Strydenburg		
VDK	Van der Kloof Dam (PK leRoux)	CAS	Cassell
GAR	Gariep Dam	VRY	Vryburg
		OTT	Ottosdal
DEARR	De Aar	PAR	Parys
COL	Colesberg		
BUR	Burgersdorp	KOS	Koster
		MAF	Mafikeng
MID	Middleberg (Eastern Cape)	SET	Setlagole
MUR	Murraysburg	PIET	Piet Plessis
NEL	Nelspoort	Ed's Folly*	1000km o/r
Iain's O/R*	1000km o/r		

Dehydration – A Flight Hazard

Some physiological and medical considerations

Dr. Mike Pascoe

The South African climate produces harsh extremes of heat, cold and humidity. Pilots need to be aware of these factors and their influence on flying operations in gliders. Visitors from more gentle climates must be aware of potential hazards.

Altitude: On the Highveld the ground is around 4500' amsl and pilots may need to become acclimatised to this. Many sea level dwellers will take a day or two to become used to the lower partial pressure of oxygen and the effect of this on the pilot during exertion. This effect may lead to the pilot becoming more tired than expected and exertion may lead to more sweat than at sea level.

Temperature: Day time temperature highs are often in the high 30's and those not used to such temperatures can fatigue quite easily on the ground. In these temperatures there will be a lot of sweating while rigging and preparing for flight. The amounts of sweat can be surprisingly large with losses in excess of two litres if one rigs a heavy glider on a hot morning. If this is not replaced then the pilot starts the day with a large fluid deficit that is unlikely to be recovered during flight.

A further factor that may contribute to progressive dehydration is the changing temperature experienced during flight. As we climb ambient temperature drops and the body will constrict the small peripheral blood vessels to keep the blood flow near the body core to conserve body heat. This constriction causes the kidneys to increase excretion so the pilot will feel a full bladder. Then as the altitude is lost and the pilot gets lower the temperature rises and sweating starts again. This loses more water and then the cycle is repeated with further loss.

The consequence of all these factors is that dehydration is a real and present risk for anyone operating gliders during the summer in a hot climate. Dehydration leads to inability to maintain proper blood flow to the tissues of the body, most importantly the brain. Apart from all the judgements that a pilot needs to make, vision can also be affected by poor brain function.

The solution is to take enough fluid to maintain hydration. How do we know that we are drinking enough? There are a few physical functions that we can monitor to check this.

Thirst: If you are thirsty you need to drink. Thirst doesn't measure your hydration status; it just tells you that you need to drink NOW. If you do feel thirsty then you probably need about a litre of water to make up the deficit.

Monitor your urine output: We don't usually measure this when on the airfield. The pilot can check that urine is being passed in fair volumes at least every 2-3 hours depending upon normal bladder capacity, and secondly can check the urine colour. A very dark, yellow colour means that the urine is highly concentrated and that the pilot is dehydrated.

Monitor your weight: You will not lose significant body mass (muscle or fat) during a day on the airfield. Any change in weight during the day is a change in body water.

What fluid should we be drinking? Firstly some drinks are diuretics (they make you pee) and these include tea, coffee and any caffeine or alcohol containing drinks. Water is the best drink as that's what the body is missing. Flavours are OK. At the end of the day's flying enjoy a couple of soft drinks or a litre of water before starting alcoholic celebrations. This will encourage you to take less alcohol and so start the next day better hydrated.

How much fluid should we be drinking? If you are thirsty you will need to drink a litre. Keep drinking throughout the day to replace sweat. Small amounts are often better than large amounts occasionally. If you feel nausea during flight you will not absorb water from the gut and you will be more prone to dehydrate even if you drink more.

Do you need salt supplements? People involved in very heavy physical exertion in hot and humid areas will need extra salt (miners in deep mines for example). Glider pilots on the runway get enough salt from their food and do not need extra salt. Do not add salt or drink salty drinks as you just have to excrete extra salt which requires extra water.

In flight there is a problem of what to do with the urine. If the glider is fitted with a relief tube then that can be a convenient way to get rid of the fluid. A "Weejohn" is a good alternative. This has a funnel to make urination easier and bag contains a powder that goes into a gel when wet so that there is no risk of spillage. An ordinary plastic bag is better than nothing but has a high risk of spillage and making a mess.

Summary

- Take plenty of fluid. In practical terms you can't drink too much.
- Arrange a urinary relief system in your glider.
- Don't take extra salt.
- If you are thirsty then you are roughly a litre short.