

WELCOME to the Eastern Province Gliding Club



Gliding is arguably the most enjoyable form of flying - one has the advantage of a "full scale" aircraft, with the handling characteristics, flight envelope and safety of a normal powered aircraft, but without the noise, smell and expense of an engine. Gliding is a pastime that can be enjoyed in an infinite variety of ways. For those of a competitive nature it offers a fiercely competitive competition environment. But for those who enjoy a quiet afternoon flitting from cloud to cloud or maybe some gentle aerobatics, it is equally accommodating.

Glider pilots are generally extremely competent pilots - they understand and read the weather well because this is their engine, they navigate well because in order to find the best areas of lift (and avoid the worst) they make frequent and often large excursions from the straight-line course. In addition to this they fly very accurately in order to minimize drag and maximize speed. For those of a scientific nature gliding is an interesting study of the forces of the atmosphere and the mathematics of aerodynamics, but for those who only wish to enjoy the flying, it is not necessary to go further than learning a number of easily understood rules and principles.

Please enjoy your day at our club and feel free to ask any of our members anything more you may wish to know about this wonderful sport.

Where does EPGC operate from?

The Eastern Province Gliding Club is situated on the South Western side of the town of Uitenhage (South Africa) and operates from the local municipal airfield (FAUH - Latitude: 33°47'10" South, Longitude: 25°23'00" East. Elevation: 278 feet / 84.7m). The Eastern Province Gliding Club is a non-profit organisation dedicated to the promotion and enjoyment of soaring in the Eastern Cape, one of the nine provinces of South Africa. While our gliding club is not in anyway a commercial organisation, we do offer introductory "air experience" flights to interested visitors.

We fly an assortment of the club's and privately owned gliders and touring motor gliders. The touring motor gliders take off under their own power while the gliders either need to be winch launched or towed by a power plane to a safe altitude.

Do I need a license to fly a glider?

To be permitted to fly a glider in South Africa a formal license is required. There are two categories of glider license a GPL (Glider Pilots License) and a MGPL (Motorised Glider Pilots License).

The GPL is also endorsed for the launch method, being either winch launches or aero-tows or both. The licenses are issued by the Soaring Society of South Africa.

Uitenhage Airfield (FAUH) - Information

The club operates from the Uitenhage municipal airfield (FAUH), which is located in the general flying area FAD193. The airfield is unmanned and operates on the same radio frequency as the general flying area, 124.2 MHz.

The airfield has four grass covered runways in a cross configuration with a left and right runway for each length of the cross. The runway designations are 26L/08R and 16L/34R for gliding and 26R/08L and 16R/34L for power planes.

The approximate length of the runways are: 26/08 (glider) 1000m (3280ft), 26/08 (power) 850m (2790ft), 16/34 (glider) 900m (2950ft) and 16/34 (power) 800m (2620ft). All the runways are more-or-less 30m wide. The elevation of the airfield is 278 feet (84.7m) and the windsock is located about halfway down the length of runway 16/34.

FAUH also has an iWeather station that records the current weather and can be found at: www.iweather.co.za.

When moving around the airfield:

1. Always use the access roads and taxi ways.
2. Always STOP and look out before crossing any runways.
3. Always LOOK FOR GLIDERS / POWER AIRCRAFT in the landing circuit, if there is any plane on base or final, stay where you are and wait until the aircraft has landed before you go.
4. This procedure is the same if you walk across the runways but please walk fast and don't stop in the middle.
5. Keep an eye on your children and don't let them cross the runways on their own.
6. If in ANY DOUBT – STOP, and if possible ask.

Where can I park?

You may park your car next to any of the hangars.

How does a glider fly?

A powered aircraft uses an engine for forward movement and to get air flowing over its wings to generate lift and sustain flight. A glider trades height (potential energy) for forward motion (kinetic energy) to get airflow over its wings.

At altitude, the weight of the glider is being pulled towards the earth by gravity. Without wings the glider would simply fall to the ground, but, because of the wings and the way the glider is designed, it turns the pulling force of gravity into forward motion. This forward motion forces airflow over the wings to generate lift. Therefore, the glider must always descend at a minimum rate.



The most modern gliders (like the ASW22 pictured above) can reach glide ratios of 60 to 1 in still air, if the glider is 1000m above ground it can glide...60Km before it will touch the ground!

Controlling a Glider



With these 3 control surfaces: **RUDDER**, **AILERONS** and **ELEVATOR**, the pilot has the ability to control the 3 axis of the aircraft.

Pressing one of the pedals moves the **RUDDER**; this produces a **yawing movement** around the normal axis of the glider.

Moving the control stick sideways, which operates the **AILERONS**, produces a **rolling movement** around the longitudinal axis.

Moving the control stick forward or backward operates the **ELEVATOR**. This produces a **pitching motion** around the lateral axis of the aircraft.

Launching a Glider

To begin the flight a glider must achieve its initial height (potential energy) and launching a glider is done with the use of some outside energy. There are two predominant means of launching a glider: Aero tow and Winch launch.

At EPGC we mainly winch launch, but aero tows are available at times.



Aero tow involves towing a glider to a suitable altitude behind a powered aircraft. At the tail of the tug plane a rope is attached and extends to a hook located in the nose area of the glider. As the tug plane climbs it pulls the glider up with it and both pilots fly in formation. At a suitable altitude, the glider pilot releases the towrope and flies away. The towrope remains attached to the tug plane as it returns to the ground.



The **winch** has several thousand feet of cable attached close to the glider's centre of gravity, usually located under the cockpit of the glider. As the winch reels in this cable, the glider starts rolling, air flows over its wings, generates lift, and takes off. The glider climbs at a very steep angle, similar to launching a kite. At altitude, the glider pilot will release the cable and fly away.

Many gliders today also have the capability to take to the air by themselves. When the desired altitude is reached the pilot then retracts the engine and propeller into the fuselage and it becomes a glider once again. The weight of the engine does not compromise the performance of the glider

How long will my flights last?

Gliding is a weather dependent activity. In the absence of any lift (i.e. thermals, ridge lift or wave) that gliders use to climb and gain altitude, an average flight from a winch launch height of 1000 feet will last approximately 5 minutes. If there is sufficient lift a glider can easily stay airborne from dawn until dusk.

How does the glider stay in the air if it has no engine?

A glider stays airborne through lift. Lift is basically rising air and comes in three main forms: thermals, ridge lift and wave. **Thermals** are areas or columns of upward moving air and result from the sun warming an area of the ground. The ground in turn warms the air above it and as we all know, hot air rises. Thermals are normally found where clouds are formed and can also be seen on the ground if they form a dust devil.

The glider pilot tries to find these thermals and circles in the rising air to gain altitude. **Ridge lift** can be found where the wind blows more or less at right angles to a higher piece of ground, like a mountain or big hill. As the wind hits the higher ground, it is forced up and over. The glider can thus find lift along the edge of the higher ground where the air is being forced up. **At Uitenhage airfield we mostly fly in thermals and ridge lift.**

Wave is the most complex of the three, hardest to find and occurs normally at higher altitudes. It occurs when the wind hits a mountain range at right angles, similar to ridge lift, but the air is forced into an oscillation (wave) that extends many kilometres passed the mountain.

And what do you do when the wind quits?

This is probably the most asked question at any glider field! The answer is that a glider flies happily in a sky with no wind at all, the only "wind" needed is the air rushing over the wings to generate the lift to sustain the glider and the "speed" of this air is controlled and maintained by the pilot, not by the wind in the sky.

After launch, the glider sails through the air, and descends to generate lift. The challenge of the sport is to remain aloft. To maintain or increase altitude, the glider must be flown into air that is rising at a rate equal to or greater than the rate at which the glider is descending. The task of the glider pilot is to find and exploit these areas of rising air called "lift".

And now? How do I start gliding?

How to join the club:

You've decided to join the club? Then fill in a membership application form now and pay the necessary fees at the duty officer.

Once the committee has approved your application, you'll become a full member of the Eastern Province Gliding Club (EPGC). As a member of the club you will also be required to do duty once a month to help get the gliders ready and flying.

Training:

Once you've joined the club, it should take you around 50 to 90 flights before you go solo, but it may take longer if you come very rarely, and be quicker if you fly every weekend. This is left to your own discretion.

The club operates every Sunday, and only on Sundays, and flying is subject to the weather and availability of the equipment. Operations normally start at about 09:00.

EPGC instructors will train you on a **Motor Falke** (motorised glider) and on a **Grob G103 Twin Astir** (fiberglass glider). Your flights are all recorded in a training logbook, so that whoever takes you for a flight will know what you've done and what to train you on. After you are solo on the Twin Astir, you will have to alternate solo and check flights before you fly on the single seaters. The Club has an **Astir CS Jeans** as well as a **Slingsby T.41 Skylark 2**.

To complete your GPL (Glider Pilot's License) you will require at least 6 hours of solo flying, including a 2 hours flight and 20 solo launches.

In gliding you are evaluated on how good you fly, and not on how many hours you have flown. Some pupils go solo after as little as 25 flights, while others take much longer. It depends on the pupil and to some extent on the instructor. Also a student with previous flying experience should learn faster as they already know the basics.

After a pupil goes solo, there are still various exercises and goals that need to be achieved before obtaining the license. These include writing a theory examination, obtaining a radio operators license and obtaining a medical certificate. Furthermore, he would also need to perform a simulated out landing and have one flight of at least two hours in length.

You may start your FAI soaring badges as soon as you like. These badges include a C certificate (30 minutes solo flying), a Silver C (a 5 hours flight, a 50km cross-country flight and registered a 1000m-gain altitude) a Gold C (a 300km cross-country flight and registered a 3000m-gain altitude).

Enjoy your day at EPGC!!

For more information please visit our website at: www.epgliding.co.za

Or Contact: Danie (cell: 0829012021) or Sigmund (0829294857) or Cliff (0832615407)

Many thanks to York Soaring Society, Magalies Gliding Club and AKA Vlieg Potchefstroom for allowing us to use information from their websites: www.yorksoaring.com, www.mgc.org.za, www.potchgliding.co.za.

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