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NEXT MEETING

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TBD

Student Training Tow Height Considerations

Many factors go into most pilots decisions on how high to tow.

Approximately 80% of the CISS tows are training flights involving student pilots and instructors. There is often a question on how high to go. To stimulate conversation and thought, consider two options on the extreme ends.

Option 1 - Take 3000 ft tows for early air work such as stalls, steep turns, boxing the wake, spirals, etc.. Then start taking 1000-1500 ft tows to focus on landings.

Option 2 - Take 3000 ft tows on all flights whether with an instructor or solo. If the primary objective is the landing, maybe just relax and fly around having some fun and enjoying yourself. Then, wake up the instructor if he is onboard, and go to work on the approach and landing.

A typical 1500 ft tow and flight lasts about 10 minutes and costs approximately \$27 and a 3000 tow and flight lasts about 20 minutes and costs approximately \$40. The pilot taking high tows gets twice the flight time for only \$13 additional.

For an example consider 40 flights prior to earning a glider certificate. A pilot taking all 3000 ft tows will log 13 hours of flight time versus 8 hours of flight time with 80% 1500 tows.

The extra 5 hours can be used to have some fun, gain experience arriving at the IP at your desired altitude from a variety of locations, sight see, practice maneuvers and have an opportunity to learn to locate thermals and do other useful things for not much more money.

What do you think is the best option for you ? Do your friends at the airport agree?

Some thoughts on recommended SOARING techniques

*** Many books and soaring pilots advise going downwind on your first leg away from the field on cross country flights .**

The benefits are that you can cover more distance , even flying very conservatively and then later in the day you can come back into the wind when conditions are stronger .

Many times it is possible to fly very efficiently into wind , especially if there are cloud markers with remarkably little loss in altitude. Just by flying at max L/D or a little faster in streets of lift .

*** *Fly with big gaggles on "weak or blue" days .***

Records show that this is a good way to survive and get reasonable points on difficult days in contests . I personally prefer to fly with just a few gliders really close in thermals rather than with many. Actually I'm always happy to do it on my own too .

Of course if you do choose to fly in big gaggles you need to begin with just a few gliders and "graduate " up to flying with many (sometimes that might be 10 or more !)

*** *Fly Faster - the fastest pilots win contests .***

I've often said that if you fly a contest and get home on every task you will finish in the top half of the field , even in a first contest . Perhaps someone with good analytical skills could put that statement to the test . Flying faster comes after learning to "get home" regularly .

Let me know if you agree or not !

ZA.

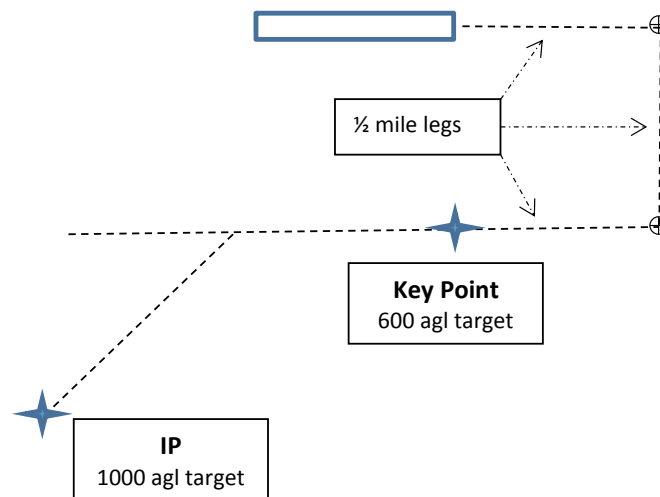
IP Approach

Many reference materials discuss making a landing approach to an airport in a glider. All concur that the airport owner has responsibility to establish the landing pattern. That would be CISS for Alexandria. The suggested approach obviously differs for airplanes and gliders. Most glider operations use an approach starting at an Initial Point (IP). Typical IP altitudes are 600-1000 feet above ground level.

The resources agree that entry from the IP to the downwind leg should be at a 45 degree angle. The FAA Glider Flying Handbook and other sources suggest the downwind leg be 1/4 to 1/2 mile from the runway for normal conditions.

The suggested altitude adjacent to the planned landing point called the Key Point is 500-600 feet agl. Many CISS pilots just use the end of the runway even if they plan to land further up the field to simplify things.

The guidelines are to proceed downwind until the end of the runway is at a 45 degree angle behind the glider. If flying a downwind 1/2 mile from the runway, this would suggest turning base not further out than 1/2 mile from the end of the runway.



Assume a day with light winds and light lift/sink for the approach. The glider needs to fly 1.2 miles from the IP to the Key Point. It then has to fly 3 legs of 1/2 mile, or 1 1/2 miles to reach the end of the runway.

With a typical approach speed of 50 kts, or approximately 60 mph the vario will indicate the feet per mile being used (60 mph is 1 mile per minute and the vario is showing a sink rate in ft per minute). An occasional quick glance provides the current information at any spoiler setting.

To descend from 1000 ft agl at the IP to 600 ft agl at the Key Point requires a sink rate of approximately 280 ft per minute which is easily attainable in most gliders --- $(400 \text{ ft}) * (.7 \text{ miles or minutes}) = (280 \text{ ft / minute})$. Depending on conditions, some spoiler usually may be required downwind while adjacent to the runway.

Using this same logic, getting from the Key Point to a landing on the end of the airport requires the loss of 600 ft in 1 1/2 miles or 400 ft per minute which typically requires about one half of the effective spoilers. This puts the glider near the middle of the sink rate range of under 200 ft per minute with no spoilers, to 1000 ft per minute with full spoilers which allows options either way for adjustments to achieve the landing aim point. Simply reducing spoiler settings slightly easily allows landings further along the runway if desired.

Advantages of an IP Approach

- After entering the Downwind Leg, the glider is never more than .7 miles from the airport, even if the pilot flies to the extreme 1/2 mile limit of the approach box. At a 30:1 L/D it would require 123 feet of altitude to reach the end of the runway when 1/2 mile away. Surely some bells and whistles would be going off for the pilot before he continued downwind to turn base or final at 123 feet agl. With options to turn base early, it will be difficult to get low and land off airport.

- If gliders fly a consistent pattern, it is much easier to anticipate the actions of the gliders ahead in the pattern and plan your approach accordingly. This approach technique has been demonstrated to effectively deal with several gliders in the pattern during busy times. As many as 8 have been observed in the pattern at the same time at other airports without much excitement.
- Having gliders in the pattern at approximately the same altitude makes it easier to see other traffic and helps reduce the possibility that someone descending rapidly from a high altitude in the pattern will not see traffic just ahead under the nose, and the front glider cannot see the descending glider which is above and slightly behind.

Dealing with Lift/Sink

- Typical lift and sink situations tend to average out in the 1.2 mile run from the IP to the Key Point. If there is lift everywhere, using spoilers as necessary will usually permit hitting the key point at the desired altitude or TLAR angle. Any other gliders in the pattern are likely encountering similar conditions and should be at about your altitude. With lots of sink, it is easy to just turn the base leg earlier.

Good Practices

- With strong winds down the runway, or very strong lift and limited use of spoilers, the glider may arrive at the Key Point very high. Some pilots are tempted to extend their downwind to have more distance to lose altitude. Hitting sink or misjudging the sink rate going back into the wind when using this technique leaves no options except the corn field short of the airport.
- Turns at low altitudes are normally not desirable. Using the above profile, it is suggested to turn base around 400 ft agl, and turn final above 200 ft agl. Again, calibrate with the numbers and fine tune your TLAR skills.
- After arriving at the IP a little high to be comfortable, it is better to fly out a short distance and return rather than just circling over the IP to lose altitude. Other pilots may be flying over the IP and a circling glider may make it hard for you to see them. They may also have to deviate around you.
- Reference materials suggest that pilots should not make 360 degree circles in the traffic pattern to lose altitude.

Suggested Exercises

Using the L/D for the glider you usually fly and the above IP pattern:

1. How high can you be at the Key Point and still land on the end of the runway using full spoilers?
2. How low can you be at the Key Point and still land on the end of runway with no spoilers?
3. How much altitude will you lose in ½ mile (approximate length of runway) with no spoilers or with full spoilers?. This is also the length of the maximum suggested final leg after turning final to reach the end of the runway?
4. How low or high agl can you be over the end of the runway and touch down mid field using no spoilers or full spoilers?
5. See how the strongest wind you expect to fly in (15 kts?) effects the approach by adjusting the downwind leg and the final leg L/D for the effects of the wind. You may be surprised.

Disclaimer: This article is not intended to criticize any pilots or practices, or to dictate how any pilot should fly. It will be successful if it encourages all pilots to think about the approach phase, stimulates some conversation and debate, and results in safer operations by providing more options when encountering unexpected situations near our airport. As always, the pic is in charge and is the final authority.

Reference Materials

FAA Advisory Circular AC 60-99A

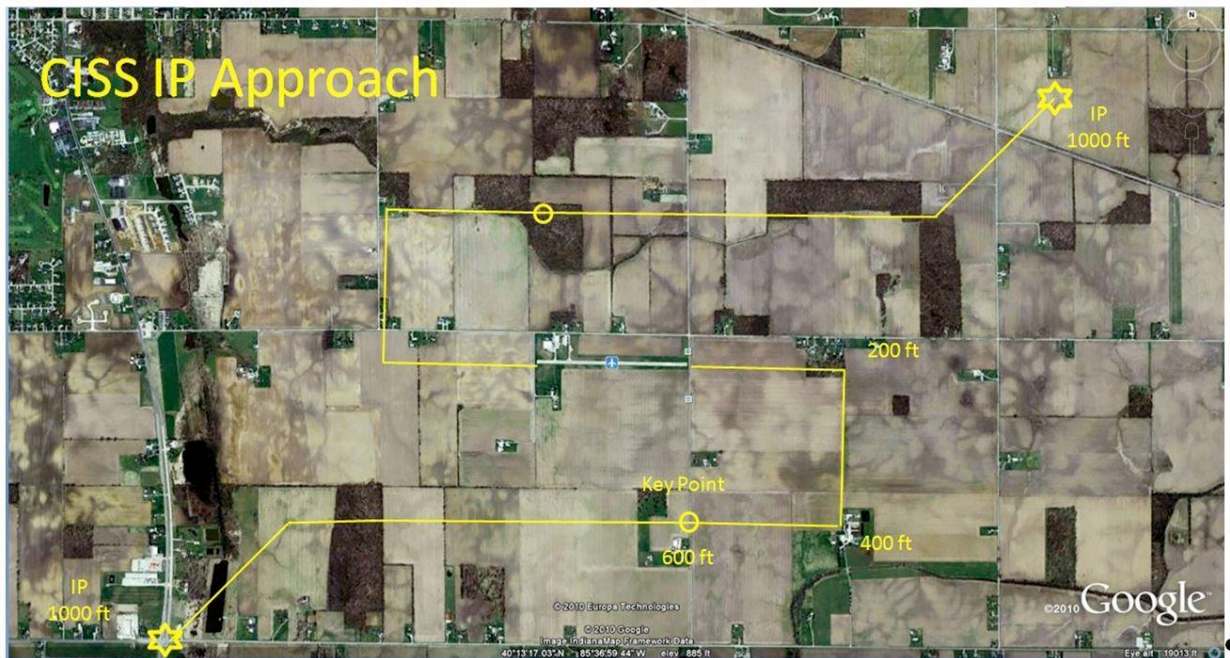
[http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2090-66A/\\$FILE/AC90-66A.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2090-66A/$FILE/AC90-66A.pdf)

FAA Glider Flying Handbook 7-34 Traffic Patterns

http://www.faa.gov/regulations_policies/handbooks_manuals/aircraft/glider_handbook/media/gfh_ch07.pdf

PilotOutLook

http://www.pilotoutlook.com/glider_flying/traffic_patterns.



Got an idea for a Wing Tips article? Send it in! Did you take a good photo at/above the field? Show it off! Found an interesting soaring-related link while web-surfing? Share it with the rest of us! Send your submissions to our WingTips editor, Chris Hall at bestbrain@aol.com. Deadline for our October issue is October 6th.