

## We asked Perplexity.AI

Why should I expect better flight performance from a 1.5 Meter wingspan DLG / f3K glider than a 1 Meter wingspan or smaller DLG / F3K. Please include the physics, aerodynamic and practical reasons.

You should generally expect a 1.5 m DLG/F3K glider to have better **overall soaring performance** than a 1 m or smaller one, especially in weak lift, turbulence, and distance penetration, because the bigger model can operate at a more favorable Reynolds number, carry momentum better, and tolerate small trim and control errors more easily.

### Physics reasons

A wing's performance depends a lot on Reynolds number, which scales with characteristic length and airspeed; a 1.5 m wing usually works at a higher Reynolds number than a 1 m wing at similar flight conditions, and that usually means cleaner airflow, better lift-to-drag behavior, and less sensitivity to tiny surface imperfections. The larger glider also has more mass and inertia, so when it flies through disturbed air it loses less speed from each gust or sink patch and keeps its energy better. In practice, that means it can maintain a tighter and more efficient energy state during the glide and when transitioning between thermals.

### Aerodynamic reasons

A larger wing generally gives you more wing area for a given all-up weight, or more useful loading options if the design is optimized for speed and penetration. That helps the glider fly at lower sink rates in weak lift while also letting it carry enough speed to push through air without stalling as easily. Bigger models are also less affected by tiny differences in airfoil shape, servo slop, linkage friction, and alignment errors because those flaws are a smaller fraction of the whole system. That tends to make the airplane feel more precise and less "twitchy" in the air.

### Practical flight reasons

A 1.5 m DLG usually launches higher and has a better sink-rate-to-launch-height tradeoff, so it often starts each flight with more usable energy in hand. It is also easier to see at distance, which helps you work lift more effectively and stay oriented when searching for thermals. In weak or broken lift, that extra height, inertia, and visibility often translate into more usable flight time and fewer forced early landings.

### Where smaller can win

A 1 m or smaller DLG is not "worse" in every sense; it can be lighter, cheaper, easier to transport, and more agile in small flying spaces. Smaller models can also be fun and surprisingly capable, especially in calm air and with a strong launch, but they are usually more sensitive to turbulence and have less margin for recovering from sink or bad timing. So the tradeoff is usually **performance and forgiveness** versus portability and compact-field convenience.

### The real bottom line

If your goal is best all-round flight performance in typical outdoor soaring conditions, 1.5 m usually wins because it combines better Reynolds-number behavior, more inertia, better launch height, and more forgiving handling in changing air. If your goal is portability, cost, and flying in tight spaces, the 1 m class can be the better practical choice even if it gives up some soaring efficiency.

I can also break this down into a simple side-by-side table of "1 m vs 1.5 m" for launch, sink rate, turbulence, turn radius, and portability.

**Please present this in a simple side-by-side table.**

Here's a simple side-by-side table:

Aspect	1.5 m DLG/F3K	1.0 m or smaller DLG/F3K
Launch height	Usually better; more wing and a more efficient launch can translate into more usable altitude.	Usually lower; less span and area make launch height harder to maximize.
Reynolds number	Higher, so the wing tends to work more efficiently in real-world flight.	Lower, so the wing is more sensitive to drag and surface imperfections.
Sink rate in weak lift	Often better, especially when optimized for soaring.	Usually higher sink unless the model is extremely light and well tuned.
Penetration into wind	Better momentum and more stable energy retention.	Can get knocked around more and lose energy faster.
Turbulence handling	More forgiving and steadier in rough air.	More affected by gusts and sink patches.
Thermaling	Easier to stay in lift and carry energy through turns.	Can thermal well, but needs finer piloting and better conditions.
Turn efficiency	Usually good, though larger span can mean a bit more turn radius.	Very agile and can turn tightly, which helps in small cores.
Visibility	Easier to see at distance.	Harder to see, especially high up or far away.
Sensitivity to setup errors	Less sensitive; small flaws matter less.	More sensitive to alignment, linkage slop, and airfoil finish.
Transport and storage	Less convenient.	More convenient and portable.
Field size needed	Better suited to open areas.	Better for smaller flying sites.
Overall performance	Usually better all-round soaring performance.	Better for portability and compact flying, not usually best absolute performance.

In short, the 1.5 m size usually wins on pure soaring performance, while the 1 m size usually wins on convenience and portability.