11-12 May

AGC Weekly News

The weekly newsletter of the Auckland Gliding Club at Drury, Auckland

From the CFI

As winter approaches, a number of gliders will be coming up for their annuals.

Remember, it's the owner's responsibility to ensure these are completed on time, it's not for Ross to remind you, even though he probably will.

There is room for extensions of time as per the Part 91 rules below, but the extension needs to be noted in the tech log.

91.611 Inspection planning latitude

(a) Unless expressly prohibited by these rules, an airworthiness directive, or a manufacturer's mandatory inspection requirement, the inspection intervals required by rule 91.605 may be extended by up to 10% to allow for maintenance planning purposes.

(b) If the extension provisions of paragraph (a) are applied to an aircraft—

(1) the new extended date, or aircraft operating hours or cycles, whichever is applicable, for the inspection must be recorded in the appropriate maintenance logbook or technical log; and

(2) the next required inspection interval must start from the beginning of the extension period to ensure that any extension that is applied to an inspection interval is not cumulative.

91.615

(c) A person may operate an aircraft after the date at which a review of airworthiness is required under paragraph (a) or paragraph (aa)—

1: for a period of not more than 36 days to allow for maintenance planning purposes if a new extended date, within the 36 day period, for the review of airworthiness is recorded in the technical log; or

2: if the sole purpose of operating the aircraft is to enable the review of airworthiness to be completed.

I'm planning on having the prize giving evening in late June, if anyone can think of any special awards, please let me know.

The Microphone in SB has been replaced so the radio should be working properly again now.

The windscreen in the caravan was broken last Saturday by an errant stone off a mower, with any luck it should be replaced by the weekend, if not take care if you want to use the caravan and ensure it remains watertight at the end of the days flying.

Working Bee Sat 4 May

Pics by Gerard

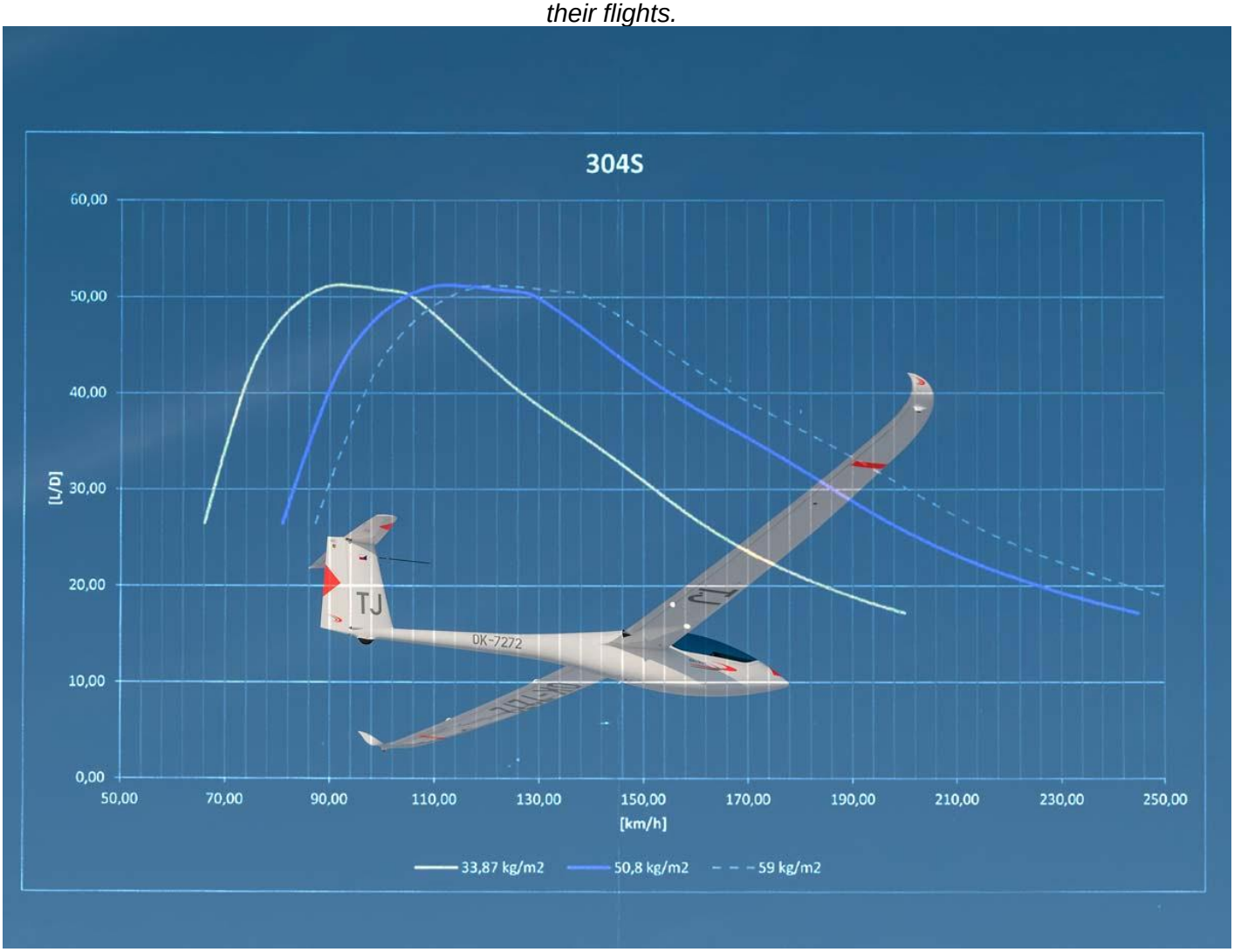
Jonathan Cross wielding the weed wand

Keith Annabell and Paul Schofield feeding the chipper monster

Wing Load Explained

By Adam Woolley
Courtesy Wings & Wheels

Explore the concept of wing loading, its effects on the glider's polar, and why glider pilots use it to optimise their flights.



Composition by Sean Franke

Wing loading is a critical concept in gliding, as it significantly impacts the glider's polar, handling, and overall performance. Wing loading quickly changes when adding a passenger to that second seat or loading up water ballast before the flight. By understanding the relationship between wing loading and the glider's polar, pilots can optimise their flights and achieve the best cross-country performance, usually measured in km/hr. Whether flying in strong or weak lift conditions, wing loading is an essential tool for glider pilots to have knowledge of, learn from, and master. I have almost 4000 hours gliding now, and I'm still trying to master its use!

How does it play a crucial role in the performance and efficiency of gliders? It is a measure of the weight of the glider divided by its wing surface area, and it has a significant impact on the glider's sink rate reference to its polar curve, that and its (or our) ability to climb! In this article, we will explore the concept of wing loading, its effects on the glider's polar, and why glider pilots use it to optimise their flights.

Definition of Wing Loading

Wing loading is defined as the ratio of the glider's weight (W) to its wing surface area (A). It is typically expressed in units of kilograms per square meter (kg/m²) or pounds per square foot (lb/ft²). A higher wing loading indicates a heavier glider with a small wing area (incredibly, the latest Alexander Schleicher AS35 goes to 62 kg/m² or 12.7 lb/ft²), while a lower wing loading (like a training glider, 25 kg/m² or 5.1 lb/ft²) indicates a lighter glider with a larger wing area.

Wing Loading and the Glider's Polar

The glider's polar is a graphical representation of its descent rates at various speeds. It is a critical

tool for glider pilots, as it helps us understand the glider's performance and make informed decisions about our flight. Wing loading has a significant impact on the glider's polar curve, referring to the speed at which we fly and also to our ability to find thermals and then climb in them.

A glider with a high wing loading will have a slower climb rate, while a glider with a low wing loading will have a faster climb rate. This is because a glider with a high wing loading has a smaller lifting surface area, which requires a higher speed to generate the same amount of lift, not to mention the wider turn radius which may in fact be keeping you out of the core of the thermal as a result.

This is where the fun of balancing the optimum wing loading comes in. If you are heavy, then you can cruise faster with the same sink rate of a lower wing loading glider, but… if you can't find a thermal or struggle to fit inside it, then the lighter glider will cruise straight past you because they are still able to climb, to be able to progress forward.

Why Do Glider Pilots Use Wing Loading?
Glider pilots use wing loading to optimise their flights and achieve the best possible cross-country performance, usually measured in speed across the ground over a pre-set course. In fact, there is little need for a higher wing loading glider if you don't intend to fly cross-country. By understanding the relationship between wing loading and the glider's polar, pilots can adjust their flying techniques to suit the conditions. For example, in strong lift conditions, a pilot can choose to fly with a higher wing loading to take advantage of the easy-to-find lift with large thermal cores; or, in weak lift conditions, a pilot may choose to fly with a lower wing loading to maximise their chances to find thermals, stay aloft longer & progress further forward towards home.

Additionally, the wing loading range is an important consideration when buying a glider for a particular purpose or region. Fly in strong South African conditions or for high-speed record regions, you'll want the Jonker Sailplanes JS3; fly in weaker & average areas, or in competitions which have a wide range of conditions, you'll want the Ventus 3.

In my next article on wing loading, I hope to talk about all things regarding launching considerations, communications on the ground, risks, aborted take-offs & the effect on landing ground roll with water ballast; stay tuned and…

Happy soaring,
Adam Woolley

Adam Woolley was born into the gliding world, being the 3rd generation in his family. Going solo at 15, his thirst for efficiency in soaring flight & quest for a world championship title to his name has never wavered. One big passion is sharing his experiences & joy with other glider pilots all around the world. Adam is an airline pilot in Japan on the B767 & spends his off time chasing summer around the globe. He has now won 7 national Championships & represented Australia at 5 WGC's & 1 EGC.
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Member's comments on last week's edition

"Good descriptive and analytical flight story from Murray; get us pilots in the PW's fired up."

Member's Ads

H36 Dimona ZK-GPH for sale or syndication. Julian Elder is interested in either creating a syndicate or selling his Dimona GPH. It recently has had significant restorative work carried out. For any technical stuff contact Ian Williams (021980194 ian@agcon.co.nz or sales information contact Julian 0276924114 julian@elder.net.nz

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