

WARM AIR 2 May 20

Aviation Sports Club Gliding Newsletter

THIS WEEKEND:

Club Cellphone 022 357 6731

www.ascgliding.org

Saturday

Instructing:

Bank Acct 38-9014-0625483-000

Towing:

Duty Pilot

Sunday

Instructing:

Towing:

Duty Pilot

LEVEL THREE - STILL NO GLIDING MEMBERS NEWS

WHAT ARE OUR MEMBERS DURING LOCKDOWN

THIS WEEK'S K6 PROGRESS... Andrew Fletcher reports

On the low humidity days, the spray gun was put to good use and the sunscreen was applied to the fabric on the starboard wing.



The humidity has to be low because dope dries so quickly, this requires latent heat and as a result there is a drop in temperature on the surface of the drying dope (I measured this and it is around 10 degrees at times). If the temperature at the surface drops to the dew point temperature then condensation forms on the surface of the drying dope, this is called blush and it destroys the surface of the dope.

With the masking removed it was time to refit the airbrakes and check the fit one paddle at a time. The bottom brake paddle required some adjustment to lower it so that it was flush, not a big job about one minute with the Dremel.



Picture shows some material removed from the stop to allow the paddle to retract another 2mm.



The airbrake paddles were painted a few months ago a nice red with a two pot clear coat to give a classy durable finish.

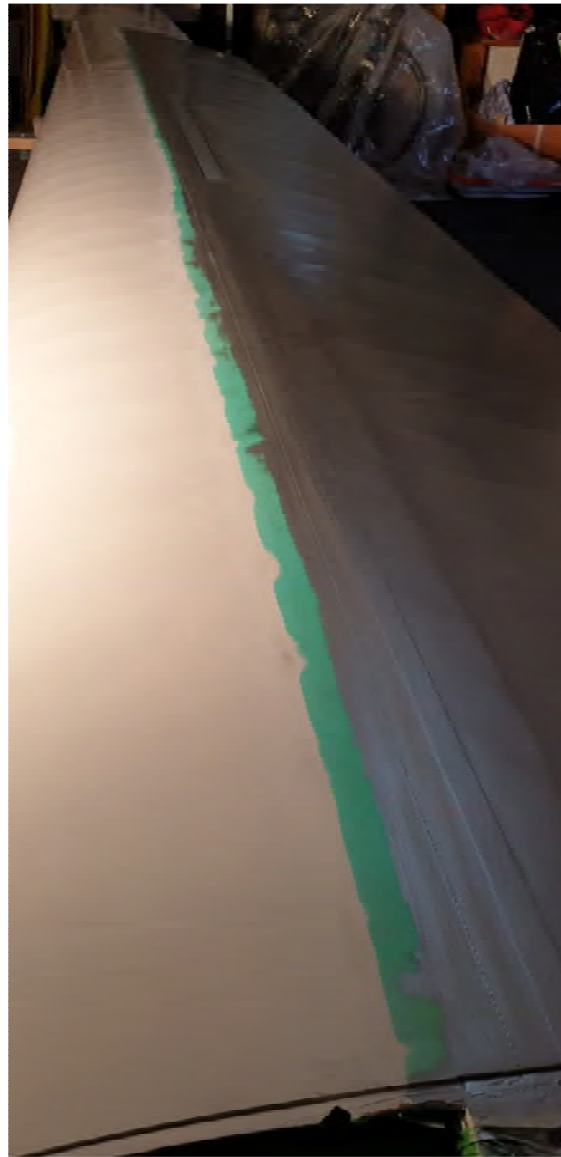


get done after the wing has been painted.

With adjustment made the airbrakes now fit flush with the surface of the wing, there may still be some improvement to be made to the gap around the edge, but this will probably



Next up, more sanding! The join between the dope finish and the paint has to be feathered in to get an invisible transition to the paint. There is also a high build primer to spray onto this area to blend the reinforcing tape into the surface of the wing.



GBU has a few small dings on the leading edge so these are now sanded and filled where needed ready for primer later today, all in all lots of progress made this week.

THE STILL DAY - SAT 20 NOVEMBER 2010 ~ *Jonathan Pote reached into his archives*

Saturday was an unusual day. Whenuapai at 8 AM looked distinctly unpromising, but the Cadets were there and keen as always. Slowly the clouds lifted, but it remained almost windless and very humid; the dew point was just one degree below the ambient temperature, and the cloud multi-layered with some slight localised instability below stable layers higher up. The little rain we had very conveniently coincided with John Key's King Air departing, and the cadets all got to fly.

Only David Grey and I turned up to fly. I launched around 2 PM with Steve to investigate 'Joining variations'. It was perfectly still as Steve slowly circled downwards having told me to close my eyes. Finally he said "You have control", which I took as permission to open my eyes. We were roughly where the downwind join for the 26 vector (in use at the time) should be but at about three hundred feet, leaving me little option but a smart turn in to land on the 08 Vector, that is downwind theoretically although it was really just drift. Just what radio call do you make in that situation? I called that I was landing downwind on 08, but should I have said 26

even if I was heading the other way? At least it was sufficiently confusing to get the attention of anyone else! Light wind perhaps, but the landing roll was impressively long.

Later I did a solo, learning a valuable lesson even before I launched. As I ran through 'eventualities' and said, "wind light and variable as before", Steve, listening beside me, called my attention to our windsock, which was firmly of the opinion that it was now an easterly drift. Craig confirmed that he was now unhappy to use the 26 vector. The lesson (s)? The wind is what it is, not what you assume it is so CHECK. Secondly, that 'light and variable' is a trap - the changes in velocity may be small, but they are crucial.

Finally I was launched on 08 and cast off at 2000' into the stillest air I have ever known; it was like floating in a still pool. For once, control inputs got exactly the response expected and Mike Whisky did nothing without being asked. I nailed the ASI on minimum sink speed and went to look under the only cumuliform cloud at my level, skating along just below the base with sink reduced to 0.5. The rest of the time was spent in lazy turns, but I should have done some investigating. Exactly how much height does one lose in a 360 degree turn? At 30 degrees AoB, at 60 degrees? At minimum sink or maximum lift/drag ratio? On simulated downwind leg at higher speeds? In a stall? In a stall with brakes out? Now was the chance to find out accurately, and I missed it. Even so, the conditions, totally unfavourable for soaring, were not to be missed.

Once Roy, who kindly came and helped even though he was not flying, had left, when David was flying I was alone at the launch point, an odd situation. We really were at minimum manning, but I feel a useful day was not used as much as it could have been; it's always worth turning up, rather than writing the day off from home. There's often some useful or just pleasurable flying to be done.

REALLY BIG GLIDERS Jonathan Pote Apr 2020

Germany, after the dramatic success of the DFS 230 assault gliders during the advance into France and Belgium, had reason to believe gliders were an offensive weapon well worth pursuing. The Blohm & Voss BV 40 was one of the smallest (but also fastest) gliders ever flown. At the other extreme, why not a troop carrier able to land a Company of infantry rather than just half a dozen men? Why not indeed; Thus the Messerschmitt 321 Gigant (Giant) and Junkers Ju 322 Mammut (Mammoth) were born.

Have you ever paused to consider this conundrum? Our lovely FK 9 ZK-RDW had an empty weight of 278 kilograms and a maximum take-off weight of 544 kilograms. That meant a useful load of 266 kilograms, adequate for two people at 90 kgm each plus some 80 kgm of whatever. If the MTOW was exceeded, the take off run would be lengthened until, after a proven safety margin, the aircraft would refuse to fly - no matter how long the runway, it would stay firmly on the ground (until enough petrol was burnt off!). I have no idea what that absolute weight was found to be, and many factors alter it, but I doubt it is over 750 kilograms. And yet we attach our Grob Twin II (weighing up to 580 kilograms, more than the FK9's MTOW) and the faithful Rotax lifts the combination to 2000' pretty expeditiously. The reason for this apparent impossibility is simple - the glider has wings to provide the necessary lift, and the poor Rotax merely has to overcome the extra drag for the combination to climb.

Another question: Roughly half the Dakotas headed towards Normandy in June 1944 carried twenty-eight fully armed paratroops. Most of the rest towed a Horsa glider, carrying fewer - just twenty-five - parachutists trained but without their parachutes - the Horsa would land. So why use the Horsa at all when more paratroopers could fit into the tow plane? The reason, of course, is concentration: A load of twenty-eight paratroopers would be spread over a mile or more, each alone until randomly finding compatriots and forming up, usually without an NCO or officer. As a Horsa slithered to a halt after effectively a controlled crash, the two dozen paratroopers formed an organised and controlled platoon immediately, a formidable fighting group. After their successes with the DFS 230 in the invasion of Belgium and France in spring 1940, it was logical to think that if nine fully armed troops arrived by a glider (which had an L/D of 18, but landed from an 80 degree dive, with a tail parachute - a land-out of epic minuteness) could be so effective, how much better if a whole company one-hundred and fifty strong could arrive intact and organised, complete with officers and NCOs?

The result of this logical progression was both the Junkers Ju 322 Mammut (Mammoth) and Messerschmitt Me 321 Gigant (Giant). Neither was a great success.

Design of both started in late 1940, after the Battle of Britain was over. Initially intended to carry a twenty-thousand kilogram payload, problems with the Ju 322 led to progressive reductions to eleven thousand kilograms, still enough for very heavy weapons or light tanks. Up to one hundred and forty fully armed infantry could be carried, allowing a company-sized force to arrive together at a landing site, as opposed to a fleet of Junkers Ju 52s scattering parachutists amongst widespread confusion. Loading would be via hinged nose doors, gun turrets on either side, with an offset cockpit.

The prototype was ready to fly in April 1941, with hopes that the type (one hundred were in build) could be decisive in the forthcoming invasion of Russia. A Junkers Ju 90, comparable in size and engine power to Allied four engine bombers, was the tug. The combination became airborne at the very end of the available run, whereupon the Mammut oscillated and rose steeply, creating the 'Mother of all tow upsets'. Its pilot was able to release, the Ju 90 survived, and the glider landed out not far from the airfield. That it took modified tanks plus civil engineering work two weeks to get the huge glider back to the airfield showed it had no future use and it, plus the partly built ones literally became firewood, twenty-five thousand kilograms of it.

Specifications Ju 322 V1[\[edit\]](#)



Data from German Aircraft of the Second World War^[2]

General characteristics

- **Crew:** 3
- **Capacity:** 140 troops or 20,000 kg (44,000 lb) of cargo (estimated), limited to 12,000 kg (26,000 lb)
- **Length:** 30.25 m (99 ft 3 in)
- **Wingspan:** 62 m (203 ft 5 in)
- **Height:** 3.08 m (10 ft 1 in)
- **Wing area:** 595 m² (6,400 sq ft)
- **Empty weight:** 25,401 kg (56,000 lb)
- **Gross weight:** 40,823 kg (89,999 lb)

Performance Armament

3x 7.92 mm (0.312 in) MG 15 machine-guns



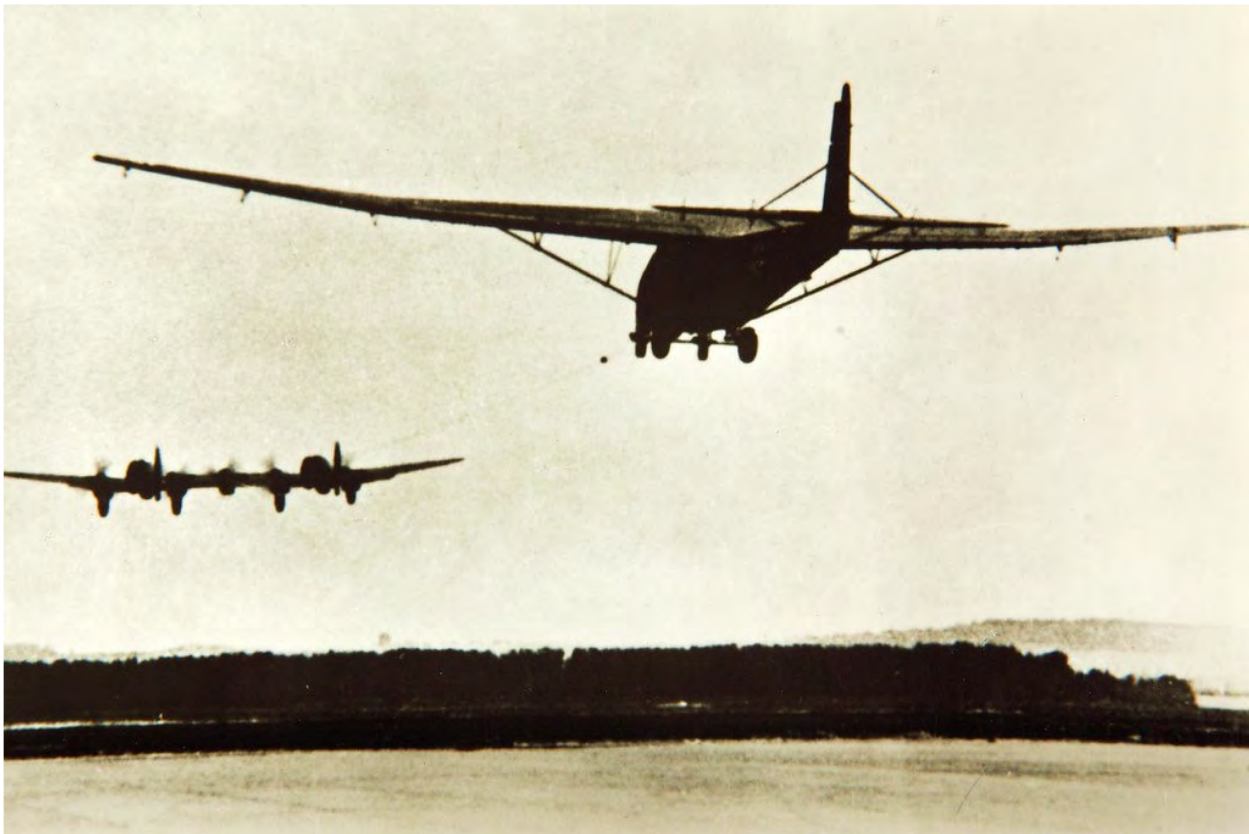
The Junkers Ju 90

The Messerschmitt Me 321 Gigant

This was designed to the same requirement, for a *Grossraumlastensegler* ("large-capacity transport glider") but was of mixed construction. It was a qualified success, some two hundred being built and used in Russia and the Mediterranean. However, it too was very difficult to handle on the ground, and the Luftwaffe lacked sufficient numbers of large tug aircraft, mainly the Junkers Ju 90, even although booster rockets were fitted to the glider. A nightmare solution was the 'Troikaschlepp', a tow by three Messerschmitt Me 110 twin engine fighters. On one occasion, however, a booster rocket failed, leading to two Me 110s colliding, the loss of all four aircraft and all one-hundred and twenty-nine persons, a toll in one crash not exceeded until 1960. Essentially, should one of the Me110s six engines or the gliders four rockets fail, the quartet was doomed. A marginally 'safer' tug was the Heinkel He 111Z (for Zwillling or 'Twin'). As with the P-82 Twin Mustang, two fuselages were joined by a constant chord middle wing section, carrying three engines. Even with this five engine behemoth, failure of one of the nine propulsion units meant disaster.

The Gigant went into service, initially in Russia, but was found almost impossible to handle at forward airfields due to its enormous size and weight. Many were then transferred to Sicily for a proposed invasion of Malta, cancelled for lack of tow planes. Some returned to Russia, and finally settled in Germany. For a single pilot (Me321A) operation, one would think "Cross-country tow" deserved a sign-off afterwards!

Finally, six radial engines totalling five-thousand, four hundred horsepower were installed, the dead end development having been reversed to end up as an inferior powered aircraft.



An Me 321 Gigant lumbers into the air behind a five-engine Heinkel He 111Z 'Zwillling'



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MEV-10943108 - agefotostock

A Junkers Ju 90 struggles into the air followed by a fire-breathing Giant.



"Say again Persons on board" : An Me 323, the powered version, disgorges troops.

Specifications (Me 321B)

Data from Die Deutsche Lufttruestung 1933-1945 Vol.3 - Flugzeugtypen Henschel-Messerschmitt,^[10] Fighting gliders of World War II^[11]

General characteristics

- **Crew:** 3
- **Capacity:** 200 equipped troops or 20,000 kg (44,000 lb) of cargo / military equipment
- **Length:** 28.15 m (92 ft 4 in)
- **Wingspan:** 55 m (180 ft 5 in)
- **Height:** 10.15 m (33 ft 4 in)
- **Wing area:** 300 m² (3,200 sq ft)

- **Empty weight:** 12,200 kg (26,896 lb)
- **Gross weight:** 34,400 kg (75,839 lb)

Performance

- **Rate of climb:** 2.5 m/s (490 ft/min) when towed by three Messerschmitt Bf 110 aircraft in a *Troika-schlepp* (triple-tow)
- **Maximum tow speed:** 180 km/h (110 mph; 97 kn)

Armament

- 2-4× 7.92 mm (0.312 in) MG 15 machine-guns

ROSTER April/May/June 2020

Month	Date	Duty Pilot	Instructor	Towpilot	Notes
ANZAC	25	C DICKSON	R CARSWELL	F MCKENZIE	
WEEKEND	26	K JASICA	P THORPE	D BELCHER	
	27	J DICKSON	I WOODFIELD	A WILLIAMS	
May	2	B MOORE	S WALLACE	R CARSWELL	
	3	S HAY	A FLETCHER	R HEYNIKE	
	9	K BHASHYAM	L PAGE	P THORPE	
	10	G LEYLAND	R BURNS	F MCKENZIE	
	16	I O'KEEFE	R CARSWELL	D BELCHER	
	17	M MORAN	I WOODFIELD	F MCKENZIE	
	23	T O'ROURKE	A FLETCHER	A WILLIAMS	
	24	R BAGCHI	L PAGE	R CARSWELL	
Queens Birthday Weekend	30	T PRENTICE	P THORPE	R HEYNIKE	
	31	R WHITBY	S WALLACE	D BELCHER	
	1	I BURR	R BURNS	F MCKENZIE	
Jun	6	C DICKSON	I WOODFIELD	P THORPE	
	7	K JASICA	A FLETCHER	D BELCHER	
	13	J DICKSON	R CARSWELL	A WILLIAMS	
	14	B MOORE	L PAGE	R HEYNIKE	
	20	S HAY	P THORPE	R CARSWELL	
	21	K BHASHYAM	S WALLACE	F MCKENZIE	
	27	G LEYLAND	R BURNS	P THORPE	
	28	I O'KEEFE	I WOODFIELD	R HEYNIKE	