

The new second version of the Gaiui 200 certainly looks sharp

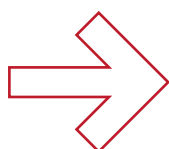
ON TEST



# GAUI'S V2 ROCKET



RICHARD BUDD PUTS THE LATEST VERSION OF THE GAUI SUB-MICRO MODEL TO THE TEST



I have been flying the V1 of this helicopter since the middle of 2008, and have used and abused

it at both indoor and outdoor flying meets. It has been flown in 10mph winds without too much problem and has been subjected to a handful of crashes (normally when I let someone else fly it). I have even landed it on the ceiling at the local indoor fly-in and followed up by doing a blade scrape on the wooden floor, despite having a top mounted flybar. The most expensive

crash was £12 after hitting three walls and a hardwood floor, and I have had zero reliability issues. During my stewardship of this model, I found that I preferred the long flybar with the 1/2 weights on, the wooden blades and a decent gyro/tail servo. The only drawback was that with the somewhat large (compared to the helicopter) tail servo mounted on the boom. The C of G was a little aft leading to slight trim issues between upright and inverted.

Now the V2 has been out for a little while now, and I have finally let the V1 go back and taken delivery of the V2. So what's the difference?

## GETTING STARTED

Well, the V2 is available as a semi kit or a just add radio pre-assembled kit (a Pro kit has just been introduced that includes everything except the receiver - watch out for a future review). As writing about an ARTF is quite difficult, I chose the semi kit which means I just had a small amount of assembly to do. The V2 is supplied with a 5600KV brushless motor and 18 amp speed controller. The model is supplied with the same moulded flexible blades that came with the V1.

A closer look at the mechanics shows that there are numerous

## Items needed for assembly:

- Six (or more) channel heli-capable transmitter (with CCPM function)
- Three Sub-micro or Micro servos for CCPM (Such as BMS 306BB or GS-045HB or HS-45HB or HS-65MG servo)
- One Micro Digital servo for tail control.
- Six (or more) channel micro receiver
- Gyro (GU -210 heading hold gyro or higher level are recommended)
- Battery : LiPo battery (7.4V-11.1V/800mAh/15C or more)
- Charger: LiPo battery charger

detail changes between the V1 and V2. Principally, these are the main frames, which are not only a different design, but now in G10. The helicopter now features a CNC metal spine in the form of a motor mount which runs the length of the bottom frames. This mount also acts as the bottom of the three main shaft bearings, and although the motor is pre-mounted at the back of the mechanics, there is provision to mount it at the front instead. Speaking of the motor, this is also an updated unit and is rated at 5600Kv and comes with a new 18 amp speed controller. The middle bearing block is also mounted to a CNC ally spine, which extends back to incorporate the tail boom mounting clamps. Moving down the ally boom, there is a new G10 horizontal and vertical fin.

The tail box is essentially the same, however the tail pitch control system has been completely changed. Most of the head looks pretty much the same, however the head block has been changed to allow for a fixed head button. The colouring of the metal parts has also changed from silver to black. As well as a new style glass canopy, the previously upgraded canopy supports are now included as standard. The kit includes two M2 flybars, a 115mm long one for stability and 137mm one for more spirited flying. The spares kit also includes full (1.1g) and half (0.5g) flybar weights to allow you to fine tune the cyclic response to your liking. The new paddles (1.2g) are also somewhat smaller than the one supplied with version 1.

**FINISHING OFF**

Despite being the kit version, there still is little to do. The undercarriage is fastened on with four miniature screws, the boom needs fitting into the ally boom supports with the tail drive belt wrapping around the top section of the main gear, ensuring that the very thin tail belt is not twisted and that the tail rotates in the correct direction. The 5mm main shaft can then be added and top and bottom collars fitted to ensure no end float.

The pre-assembled swashplate, washout assembly and head can then be added along with the flybar and paddles (in this case the longer flybar with the 1/2 weights). The Hitec 65MG servos were a straight fit in the frame and attached with two self tappers each and all links were made as per the instructions. The tail servo was attached to the moulded boom mounts, which were adjusted so that with the supplied carbon pushrod assembly when fitted produced about six degrees of right tail pitch. The supplied speed controller was added to the upper



The Gaui 200 V2 semi kit requires some assembly



The head has been changed to allow for a fixed button



The tail of the V2 features a new pitch control system



The main frames of the V2 are now made from G10



The model is also available ARTF form



The completed semi kit model next to the ARTF box



The fully built and ready to fly Gaui 200 V2 looks pretty simple, but it is also very effective and flies well

**Normal Mode**

Throttle	Slick Position	Pitch	Current	Head Speed
100%	High position	+13 degrees	18.1A instantaneous	2980rpm
85%				
65%	Hovering position	+5 degrees	8.4A continual	3350rpm
45%				
0%	Low position	-4/-5 degrees	0	0rpm

**Idle Up**

Throttle	Slick Position	Pitch	Current	Head Speed
100%	High position	+13 degrees	18.1A instantaneous	2980rpm
85%				
80%	Mid stick	0	7.8A continual	3730rpm
85%				
100%	Low position	-13 degrees	18.1A instantaneous	2980rpm



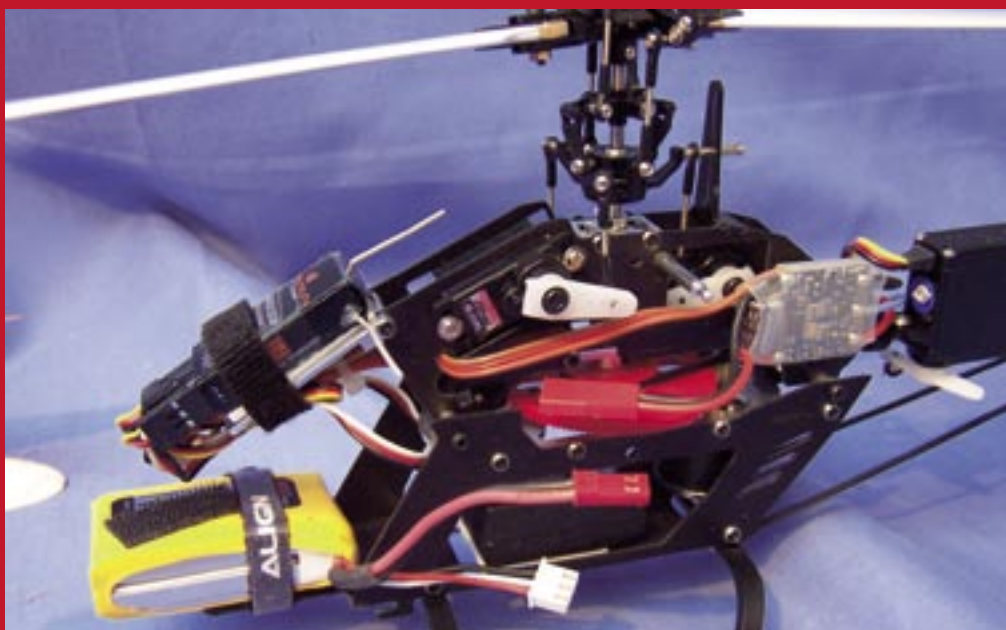
The heli has an alloy tail boom and G10 tail fins



The rotorhead is supplied pre-assembled



The electronic speed controller was added to the upper frame which allowed for a neat cable run



The main battery was moved forwards to improve the C of G. As with all small electrics, space is quite tight on the V2

frame which allowed for a neat cable run.

I mounted the CSM 720 gyro on the bottom plate under the main shaft, and in order to help minimise the effect of my oversized tail servo, I ignored the instructions and mounted the receiver (Spectrum 6110E) on the CNC ally plate normally used for the battery, and instead mounted the 2S 800mAh LiPo on the bottom plate. This allowed the battery to move further forward improving the C of G. As with all small electrics (and some bigger ones!) it was hard to achieve a neat installation. The speed controller and gyro were left on their standard settings, and the radio was set up following the instructions. The 195g flexible main blades weighed in at 7.5g each and are attached with an M2 bolt.

The throttle and pitch curves were set according to the instructions as in the table below.

#### FLIGHT TEST

First flights were in my back garden and proved to be pretty boring. The helicopter just lifted up into a reasonable stable hover with just three clicks of forward cyclic to achieve trimmed flight. It was noticed that the cyclic was sticky, with the helicopter not quite settling into a perfect hover. I have put this down to 'stick ball' syndrome as this improved a little more on each subsequent flight. The CSM720/HITec 5084MG seemed quite happy on the stock settings and the tail control was very good. Cyclic control was a little sluggish as was the response to rapid collective inputs. In standard form, I think it would be fair to call the model somewhat docile. A change to some wooden blades made the helicopter respond far more to my liking without becoming too skittish. I therefore left the wooden blades on for the rest of the flight tests.

Moving into hovering circuits showed that the Gaiu was very controllable, but would accelerate away quite rapidly if you allowed it. Fast forward flight showed that I really need to get my eyes tested! This model can move quite rapidly and being a small model, orientation can become a problem. Despite this, control in fast forward flight was not an issue, however with my chosen flybar length/weight set-up, pitch instability could be found at the extremes of speed. This might sound frightening, but it was quite progressive and only occurred when trying to reach terminal velocity.

Loops and rolls were no problem, stall turns were limited in vertical penetration due to the helicopters low inertia. Flips only required a slight touch of cyclic every now and again to hold on station. Tick-Tocks had to be timed carefully as with only a



With some thought a neat installation can be achieved



The end result is a smart and reliable little model



First flight tests were carried out in Richard's garden



The 200 V2 is small enough to fly in confined spaces



The GAUI 200 V2 is nice to fly and should provide its owners with plenty of indoor and outdoor sub-micro flying fun

## TECH SPEC


### Gaui 200 V2

<b>PRODUCT TYPE:</b>	Sub-micro electric heli
<b>ROTOR SPAN:</b>	428mm
<b>TAIL BLADE SPAN:</b>	110mm
<b>OVERALL LENGTH:</b>	415mm
<b>FLYING WEIGHT:</b>	300g +/- 10% depending on installation
<b>RRP:</b>	
Gaui 200V2 SX belt drive with 5600Kv motor and 18 amp speed controller:	£199.99
Blades - wooden:	£7.87
Crash Kit - wooden blades/ tail boom/belt:	£10.11
2S 800mAh LiPo:	£11.79

<b>AVAILABLE FROM:</b>	All good model shops
<b>TO INCLUDE:</b>	Rosendale models
<b>WEB:</b>	<a href="http://www.rossmod.co.uk">www.rossmod.co.uk</a>
<b>WEB:</b>	Fast Lad Performance
<b>WEB:</b>	<a href="http://www.fast-lad.co.uk">www.fast-lad.co.uk</a>
<b>WEB:</b>	Trex Mad
<b>WEB:</b>	<a href="http://www.trexford.co.uk">www.trexford.co.uk</a>
<b>UK DISTRIBUTOR:</b>	King Cobra
<b>WEB:</b>	<a href="http://www.kingcobra.co.uk">www.kingcobra.co.uk</a>

2s Pack, it was possible to bog the motor down if your pitch timings become off sync! Inverted stability was just as good as the right way up, however due to my chosen servo set up resulting in the heli being slightly tail heavy, a small amount of elevator trim was required. I did attempt a piroflip, but due to my lack of ability, I took the heli so high I couldn't see it properly. I think with a few more flights to build some confidence, these should be achievable. I will admit that I did not feel the need to try any autos with this heli as there is precious little inertia carried in the blades. This however is also what makes this machine such a good indoor and garden 3D model, as when you crash it, bits do not go flying for many meters in all directions. During my background photo shoot, I managed on two occasions to get too close to the plants. Both times as the heli chewed into the shrubbery, I simply closed the throttle, picked the heli back up, straightened the blades and flew it again... no damage... no vibrations... just my daughter struggling to take pictures because she was so busy laughing at me! Flying times are five to eight minutes depending on flying style.

### THE VERDICT...

I liked the version 1, and I really like the version 2. I have now bought a Canomod painted canopy, a carry case and some carbon blades and look forward to messing around in my back garden during the summer evenings that we deserve after such a harsh winter! 

Richard Budd