

John Stennard tries out an ARTF model from Art-Tech with slats and flaps for short field performance



STOL 500

Once you get past circuits and bumps there is quite a bewildering number of different types of models just waiting for you to try. In my time I've had a go at a wide variety but models with additional features like retracts, flaps, bomb bays and tow-hooks have remained of constant interest. Many of my models have been adaptations of existing aircraft but a few have been purchased specifically for their additional features. Flaps and bomb bays have always been particular

favourites so when I read the specs of the Art-Tech STOL 500 this model had my name on it!

While I tend to concentrate on small to medium size models the STOL 500, with a wingspan of 1254 mm (49.4") and flying weight of 1440 g (50.8 oz) cannot be described as large, so it happily falls into my favourite size category. I do like to keep models in one piece for transportation and this model fits easily into the back of my small car - without sharing the space

with any passengers, of course! So it's a convenient size, but what other attributes does it have?

The name gives something away as STOL refers to its 'short take-off and landing' abilities. To achieve this the wings have quite large flaps with linked leading edge slats. I've had several models with fixed LE slats but never one with moveable slats. Slats really do make a big difference to slow flying and if you are lucky enough to get a window seat by the wing the next

Piloting the STOL 500 with flaps and slats deployed provides lots of interesting flying



time you are jetting off somewhere take note of the huge array of slats. Slats have also been employed on numerous fighter aircraft to aid manoeuvrability. So here is a model with both slats and flaps that work. And I'm really looking forward to trying them out.

The other speciality is the 'drop bay', as it's called, and again I've fitted plenty but rarely had a model with one already provided.

So with two of my favourite features on a classy looking ARTF model, I think this is going to be a fun experience - although there are a couple of mysteries thrown in for good measure...

Shortly Taking Off

Forget the glue. You're not going to need it! This is true - I received the model in the morning and test flew it in the afternoon! Art-Tech has packaged this model to perfection and opening the attractive box reveals a set of parts for your STOL in pristine condition. Everything is securely held to ensure safe arrival. Examining the lovely yellow foam mouldings (my favourite model colour) reveals the extremely high state of design thought and skill that has gone into producing this model. To my eyes it has near perfect proportions; it's a sleek and modern looking high winger with a tricycle undercarriage and a scale looking 3-bladed prop. With a wing loading of 61 g/dm it has plenty of slow flight potential and the ST3511-760 kV brushless motor should make it get up and go. A 30 A ESC handles the power from a recommended 3S 1800 LiPo. The combination of controls and features requires seven 9g servos, all pre-installed. A pack of accessories includes wing bolts and Y-leads, etc. plus a screwdriver and even a spanner for the prop nut. As you can imagine there more to say about the flying than the assembly, so this part of the review will be very short!

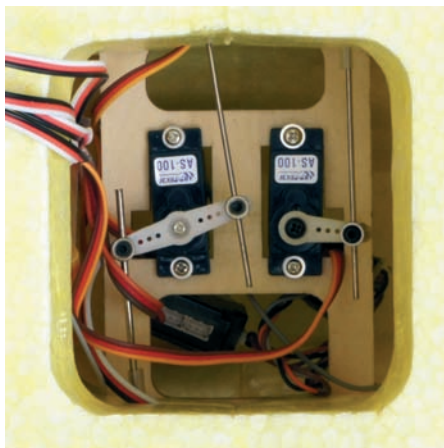
1, 2, 3, Make...

...Or should it be Bake? I'm watching too much TV!

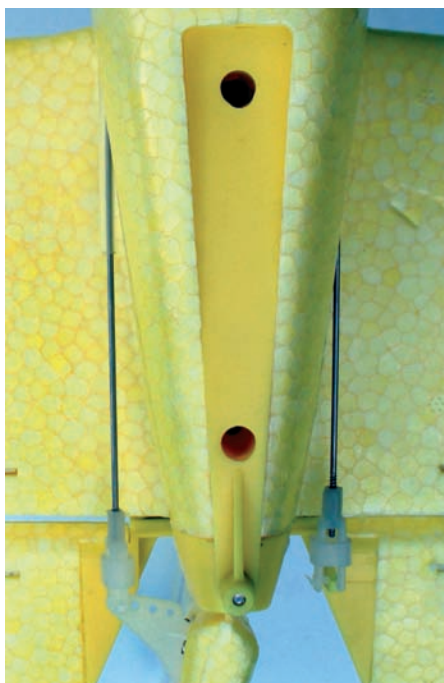
The assembly instructions in the manual are commendably short and made me realise that the time needed to get the model from the bench to the air would also be short. Just five quick steps have the STOL 500 assembled.

- Plug in the main U/C. The nose wheel unit is already fitted.
- Screw the tail assembly in place.
- Install the receiver.
- Fit the metal wing tube and attach the wing assembly with three screws.
- Fit the wing struts, add the holding screws then attach the rather nice prop and spinner. A spanner is thoughtfully supplied for this and the kit contains a spare prop.

With the model assembled and looking rather splendid let's go back to installing the Rx. You need six channels, but I wanted to add altitude telemetry, so I needed seven. I was in a bit of a hurry as I had a fine weather afternoon in sight so I decided to try the model initially without the



Under the wing is the open fuselage where the Rx will be situated



The whole tail assembly is screwed in place and the pushrods connected to the rudder and elevator

working drop bay. But before taking to the air, I'll just give a few more bits of airframe info.

The STOL has really usefully large and robust wheels of 75 mm (3") diameter. These should cope easily with rough surfaces and longish grass.

No information is included about setting the flaps so I set them at about 30° for

take-off and 45° for landing. The slats are linked to the flap servo so they move simultaneously. I had to adjust several of the clevises to get mechanical neutrals and I was not impressed with the quality of the plastic clevises. The pin is soft and flexible, and seems slightly shorter than is ideal. I like my clevis pins to give a noticeable 'click' when the end of the pin is pushed through the locating hole. However, security sleeves are fitted to all the clevises and the clevises could be easily replaced.

The drop bay seems surprisingly small. It's just big enough for the parachute equipped pilot. He is still holding the control column, which must have come off in his hand in his hurry to get out! The bay door is spring-loaded and flips open when a servo is operated. This is a simple arrangement that just uses a standard servo arm movement to lock and release the door.

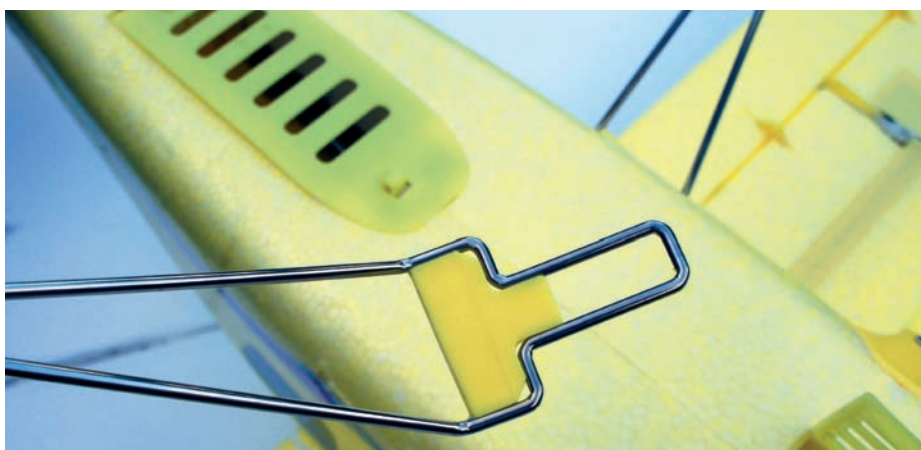
The mysteries mentioned in my introduction are: Why is there a hatch that leads nowhere on the top of the fuselage behind the wing? And why do the instructions make no mention at all of setting up and using the flap/slats and the drop bay? Perhaps Art-Tech assumes that if you are buying this model you are knowledgeable enough not to need any instructions?

The battery bay is a plastic moulding and although designed for a 3S 1800 LiPo, I managed to get in a 3S 2200 pack. An advantage of this is that the extra weight will offset the weight of any load in the drop bay.

Airborne In A Hurry

A quick trip down the road to our flying site with a farm concrete road soon saw the STOL 500 ready for action. A few taxi runs resulted in reducing the throw on the nose wheel and including some expo.

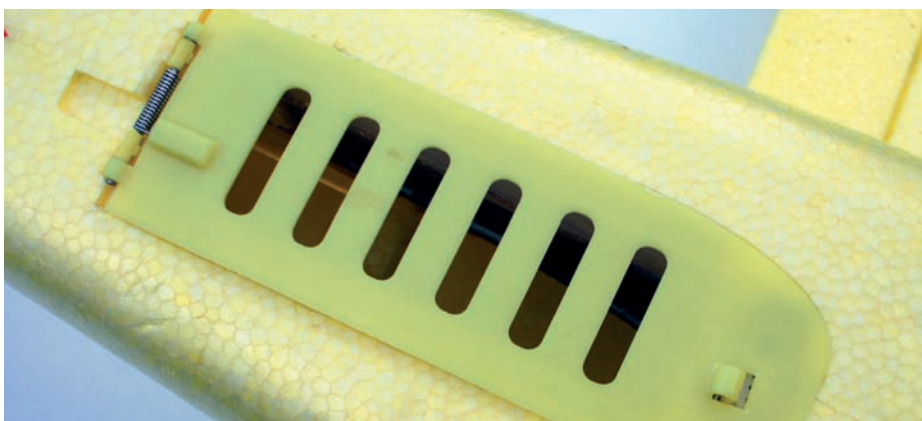
Without any flap the model took off very easily and the STOL 500 proved very easy to fly. Both the ailerons and rudder were very effective and the first and subsequent landings showed that it was worth holding off as long as possible before touch down. Although the main U/C track is not particularly narrow, if the model is travelling at speed and excess steering is applied there is a tendency for it to tip. This also showed up later when attempting to take-off cross wind. Before the next flight



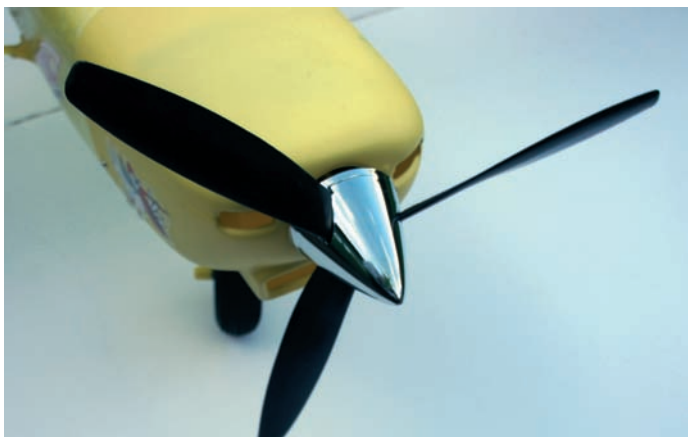
Main U/C legs are preformed and the wheels in place ready to be plugged in



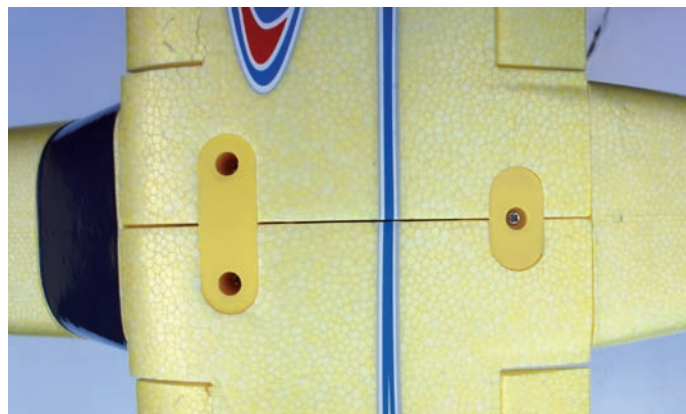
The battery compartment is designed for a 3S 1800 but I got a 3S 2200 to fit. It's a bit tight though



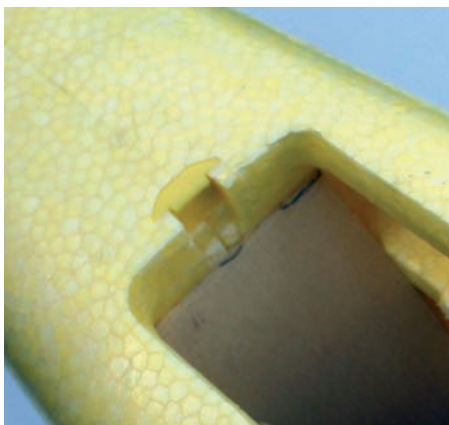
Drop bay hatch is spring loaded



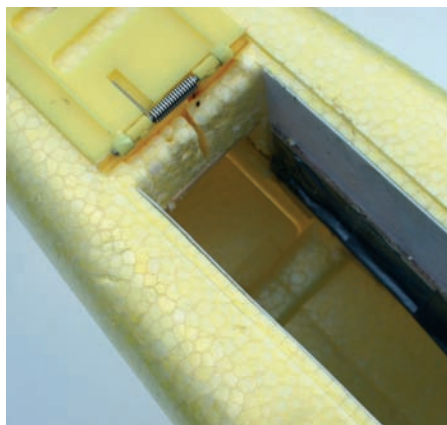
The really nice 3-blade prop looks great and sounds good



With the wing stiffening tube inserted and all the leads connected the wing can be screwed in place



The mysterious top hatch. But when cut through and lined it provides a double capacity drop bay



Tail snakes can be taped to the sides to ensure a smooth exit for the parachutists

I mixed in some CAR (combined aileron/rudder) and this made for smoother flying.

Flights with the flaps were very rewarding, with extremely short take-offs and equally short landings. In a moderate wind the flap effect is particularly noticeable and the model remained perfectly stable, with no rolling tendency when flying extremely slowly. The take-off performance from rough grass was very good and the landing roll on the same grass could be cut to a couple of metres or even less. A very impressive all round performance.

Before going home with a big grin I checked out her aerobatic potential and found that she would loop, roll and fly inverted with ease. Not that I want to do this regularly but it was nice to know.

Onward And Upward

Impatient to try the drop bay, I took off the wing and used a Y-lead to couple the drop bay servo to the flap output. This meant that I could not use the flaps for take-off but once airborne the landing flap position would also open the drop bay. The drop bay servo arm only needs to move a tiny amount for the bay to open and it was not possible to link it with the full flap position. The supplied parachuting pilot is actually quite heavy and he drops out perfectly every time. However, over the years I have accumulated a variety of different parachutists and it was a bit frustrated dropping just one. Examining the model I came to the conclusion that I could safely remove the floor of the drop bay and enlarge it by 100%. After

removing the floor I found that the rudder and elevator snakes pass through this area but I was able to move them to the sides. However, it was clear that smoother sides to the new part of the drop bay were required so I used pieces of 1 mm ply to do this. More flight tests saw me increasing the number of parachutists but there were occasional hang-ups. Lighter weight parachutists were less likely to drop out and got stuck inside the bay. A happy time was spent experimenting but I was looking for a solution. This came in an unexpected way - enter the mysterious hatch!

A close inspection of the area of fuselage under the hatch showed that it would lead into the rear of the drop bay if I



Full flap landing position



The slats droop by a noticeable amount. Stress cracks that formed on the slat hinge were easily fixed with Blendederm tape

removed some foam. I did this and realised that it might now be possible to load the parachutists etc. through the top hatch. Again using 1 mm ply, I smoothed out the passageway into the bay.

More flight tests were done experimenting with loading through the top hatch but the occasional hang-ups persisted. An issue with hang-ups is that you cannot close the hatch, so if a parachutist suddenly decides to give it a go they may well drop out in a very inconvenient spot! Two friends were present at these trials and they were doing a marvellous parachute collecting service when one suggested leaving the top hatch open. He reasoned that the through flow of air when the drop bay hatch was opened might make a difference - and it did! All our drops after removing the hatch were 100% successful. I have now made an air-scoop to fit in the upper hatch opening and I think this may be the final solution.

If toffee bombing the load could be inserted through the top hatch and then the hatch fitted back in place.

My 3S 2200 LiPo pack was giving around 10 minutes of take off-climb-cruise-drop-land flight time.

The reviewed model has had quite an exhausting period of flight testing, with loads of take-offs and landings and only a couple of issues appeared. First, I noticed that the steering was a little erratic and found that the plastic wheel retainer had moved away from the wheel. This was allowing the wheel to wobble on the axle. I simply replaced the plastic retainer with a metal collet. The other issue concerns the slats. These are hinged by the usual V-cut method and I noticed that the hinging foam has split near the wing root. This is easily repaired with Blendederm tape and the split has not shown any signs of spreading further out on the wing.

Fun Machine

The Art-Tech STOL 500 is a true fun machine and I think that it is extremely good value. Even if you do not want to drop things, piloting the model with the flaps and slats provides lots of interesting flying. In any wind you can literally drop the model down in an extremely small space. Towing would also be a practical proposition as a line could be made that would be released when the drop bay hatch was opened.

Finally, I received the 9-channel Rx that



Big wheels make rough grass take-off and landings easy. I fitted a metal collet behind the plastic nut to cure some nose wheel wobble



The original parachutist (right) fits fine in the original smaller bay. But if you want multiple parachutists my alternatives cost 59p and the bigger bay can take six easily

I had ordered so I now have the drop bay fully operational. I can fly really slowly on full flap prior to opening the bay and, of course, I can use take-off flap if required. I have also fitted the Spektrum TM1000 Telemetry module with an altimeter so I can experiment with different drop heights. So with my anemometer giving the wind speed and knowing the altitude there's no excuse for missing the drop zone... Dream on!

RCMW



In its clean configuration the STOL 500 can be flown quite fast and perform basic aerobatics



The model handles really well when the flaps and slats are down. Slow speed flight really is slow, particularly if there is any headwind



Taxiing back after a flight. The steering is sensitive so it needs a smooth touch

MODEL WORLD DETAILS

MODEL INFORMATION

NAME:	STOL 500
MANUFACTURER:	Art-Tech
DISTRIBUTOR:	Century UK
PRICE:	RRP £160
MODEL TYPE:	High wing model with flaps, slats and drop bay function
CONSTRUCTION:	Moulded foam
MOTOR:	ST3511-760 kV brushless with 3-blade prop
FLIGHT PACK:	3S 1800 LiPo
PARTS SUPPLIED:	7 servos, motor and ESC
PARTS REQUIRED:	6-channel Rx and flight pack

MODEL SPECIFICATIONS

WINGSPAN:	1245 mm (49.4")
WEIGHT:	1440 g (50.8 oz)

R/C FUNCTIONS

1: Aileron	4: Rudder
2: Elevator	5: Flaps/Slats
3: Throttle	6: Drop bay

LIKES

- An attractive, well-made and innovative model
- Excellent all round performance
- STOL capability
- A great 'fun' model that will keep the pilot and spectators interested

DISLIKES

- Soft plastic clevises
- A lack of information about some aspects of flying