

2.4 Control line CARRIER-DECK - by Chris Hague

As a teenager prone to dizziness when spinning around I seem to remember that five laps was one lap too many when trying to fly control line models, but then we had usually spent all day trying to start the diesel engine - that was the one that had an advert saying "easy starting, ideal for beginners!" However, it didn't put me off building model planes, although I did not try control line flying again until past retirement age, when – surprise, surprise - I got dizzy again, but by persevering I overcame that and now I can even do a few loops and bunts.

I had read about and seen pictures of the carrier deck events and thought that it would be a new challenge to attempt and it certainly proved to be so! Over the course of the past year I bought a three line handle from Ebay and was kindly given a double bellcrank by Paul Harris of Topco Kits. I planned to convert an existing model but the bellcrank was buried in the port wing and so converting to the double one was not going to be easy.



36" span profile model before conversion to basic carrier deck specification.

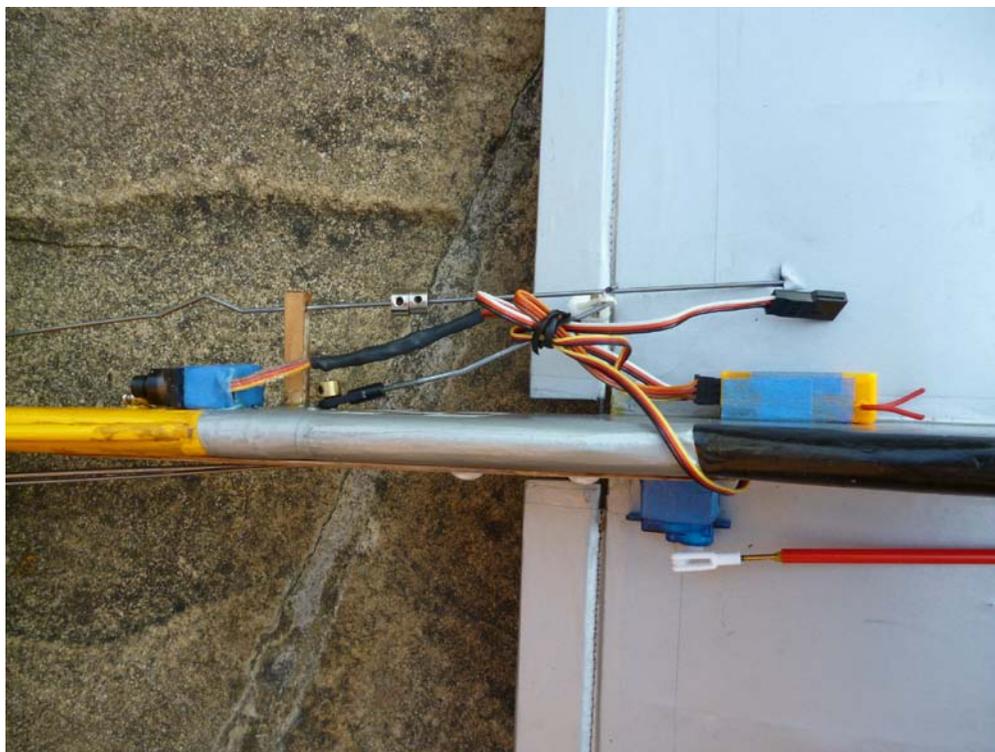


36" span profile model before conversion to basic carrier deck specification.

Having read the basic carrier Deck rules (from the excellent website: http://carrier-deck.com/?page_id=122) and looked at a few photos and a YouTube video, I decided to convert a couple of existing 36" span models. The model was a sort of Mustang with coupled flaps and elevator. The flaps are not permitted so were disconnected and fixed in position using the existing control horn and an adjustable link. The plan was to experiment with the best compromise position of fixed down flap to help with the seven slow laps without slowing down the fast laps.

The model already had an OS40LA fitted with stunt venturi, so the excellent air bleed OS throttle carburettor was fitted. As I fly r/c with 2.4GHz radio I thought the easiest solution was to simply fit a servo for the throttle control towards the rear of the starboard wing root. I then placed the small receiver and four cell battery on the other side of the profile fuselage. Job done! (This saved me having to cut into the wing to fit the double bellcrank.) Now to test fly this set-up. With the transmitter on my usual neck strap I could control the throttle with my left hand in the same way as when flying my r/c planes. Easy! And to my surprise it made it easier to fly the plane (remember I'm still a control line beginner!) and I think it would have been easier to learn to fly with this set up. I just practised flying with fast and slow throttle commands and slow landings at the downwind side of the circle. It did highlight that the model may not be of the ideal design for a carrier-deck event, but it worked alright.

Now to the arrester hook. If the model was ever to connect with the arrester wires I could see that this was going to be a big strain on the balsa profile fuselage. So I shaped out some 1.5mm ply and glued it on the starboard side of the fuselage from the wing root rearwards. This proved to be a sound fixing for the fixed end of the flap, the arrester hook wire and the piano wire torsion bar that I had devised to hold the arrester hook in the desired deployed position. I experimented with wire size and clamping positions to get just the right tension on the torsion wire. By moving the inner clamp it is possible to gain further fine adjustment. To hold the arrester wire up until required after the slow run I used a servo on the port side with a short length of piano wire going through the fuselage and projecting just far enough to retain the wire. This servo was operated by a switch on my transmitter and it proved simple to deploy when required. Again I tested at my local flying field and it all worked fine. I even practised landing on a given spot each time, but without much success to start with. No-one said it would be easy! The UK Basic Carrier-Deck rules also stated that *“You must provide a visible stranded steel safety cable of minimum bulk diameter 0.457mm (ie: heavy Laystrate) between the bellcrank and the engine.”* Now I could not avoid cutting into the wing to attached this safety cable to the bellcrank. This task involved spacing the pivot bolt downwards to the under surface of the wing and twisting, clamping and soldering the heavy laystrate onto an electrical connector and then forming a loop at the motor end.



Top view showing arrester release servo, flap fixing, throttle servo and receiver.



Arrester wire, adjustable torsion bar and throttle servo.

Having finally converted both profile 36" span trainer type models and test flown them several times at the club field I decided to enter the event run by Mike Welch of the Marlborough MFC and Andy Housden. I read and re-read the detailed information about how to prepare and fly basic-carrier deck models on their website and felt reasonably well prepared for the event. To confirm a few points about location and time I phoned them both - to be rewarded with lots of further helpful advice. This was to be continued at the venue where they both could not have been more helpful to a carrier-deck virgin.

At the venue on a beautiful sunny day the deck was set-up and it all looked just like the photos, which was a good start. I took advantage of the time allocated for a practice flight and landed safely in the sea as I didn't want to risk any damage before having a real go. Three attempts are allowed and for two of them Mike came into the middle with me and talked me through the routine which was a great help. I raised a smile or two by using a brightly coloured hot water bottle as my marker to remind where to stand for the landing – it was a scorching hot day with temperatures over 30 degrees - but it worked for me on my third flight.

I would have landed on the deck with my second flight but I made the beginners error of stepping back to increase line tension and pulled the model off the inside of the deck – and into the sea. So near, yet so far away! Zero landing points. The third flight resulted in just missing the arrester wires on my first attempt at landing but I had enough presence of mind to open the throttle and steady the plane and land on the very next circuit. I put this down to using the same method of throttle control as with my r/c planes and it was therefore a natural rapid response on my part to power the plane out of trouble. Thanks to Andy shouting out “get in position”, as I could readily see the hot water bottle out of the corner of my eye I stood over it in time to land correctly on my next circuit, arrested correctly on the deck, on the very last arrester wire. I was happy with that and greatly encouraged by the generous loud applause. As a bonus the model had survived to fly again.



Right hand handle, left hand throttle.



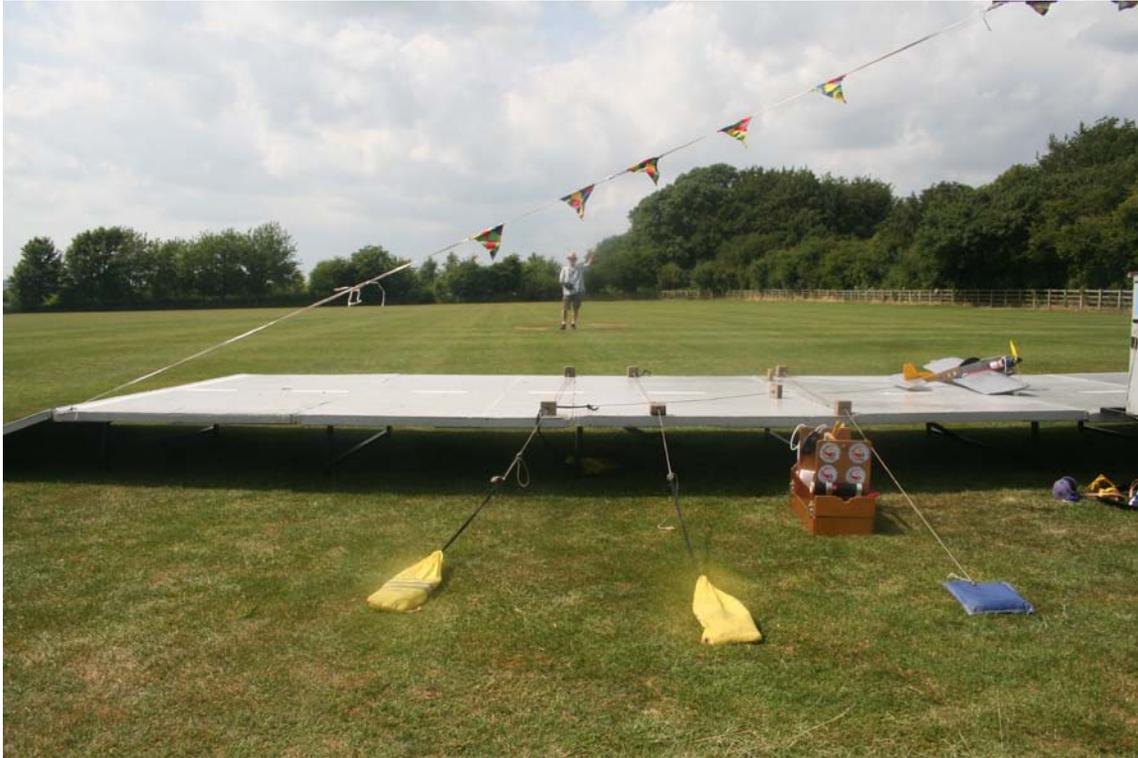
Valuable assistance from Mike Welch.



Take off.....

After much debate and advice from the other contestants I remain convinced that my methods of throttle control and arrester wire release are successful and worth leaving on the model. After all, the model did land correctly arrested on the deck! I did pick up one or two pointers for further improvement to the model and will make a few changes before trying again. I then plan to build a model specifically for this event. After all it is a challenge and well worth the effort to have another go at some stage.

I would like to thank all who helped make this such an enjoyable first experience for me of a control line carrier-deck event. There is a comprehensive set of rules and guide lines, clearly displayed on their website and this enabled me to attend my first event with a plane that did not look too much out of place. The rules were sensibly interpreted and common sense was applied throughout the day, which all contributed to a most enjoyable first time carrier-deck landing.



..... and an arrested landing!

I fly at Tarrant Hinton in Dorset and we propose to run a few control line days throughout the year and would like to include Carrier-Deck as yet another option. We run many other events in the Dorset, Wiltshire and Hampshire area and full details of dates, plans, rules and results are available on my website: www.wessexaml.co.uk