

Basic Carrier Deck at the Cosmo Aeromodelling Club Control Line Competition on Damyn's Hall Airfield in Essex on 26th April 2015

by Andy Housden

With a weather forecast that promised rain and a cold Northerly wind, this, the usual curtain-raiser contest for the season, clearly wasn't going to provide the sunshine we've enjoyed for the past 5 years or so. However, the forecasters' post-1987/Michael Fish/no-madam-there's-not-going-to-be-a-hurricane official caution was on the pessimistic side as usual and, despite about an hour's-worth of light drizzle around lunchtime, conditions turned out to be actually very flyable. OK: it wasn't *exactly* shirtsleeves and sandals, but there wasn't much wind and even an ordinary hat and coat were enough to keep the (slight) unseasonality at bay. Fortunately a respectable number of flyers and spectators turned up - including a possible recruit from Feltham & DMAC near Heathrow, whom we did our level best not to put off - so the event turned out to be a good kick-start to the season after all.

Damyn's Hall was also hosting a vintage car rally, but, along with the R/C club upon which, in the past, we've had to be careful not to encroach, all this kept itself at least a runway's width away from us and the contest was able to have an uninterrupted day of enjoyable flying. You can see the full results at the end of this report.

Trevor Tabor was first to aviate, maiden-flighting his new i.c.-powered/mechanical 3-line BCD Class Short Seamew, based upon his previous very successful .40-powered model that was itself a simplified profile-fuselaged version of the old Mick Reeves APS/MAP/Argus/Nexus Class 1 & 2 Carrier .60 cu.in.-size design.



Whilst the model performed perfectly well and made a successful arrested landing - seen here just at the point of hookup with the 'displacement wave' only just starting to travel down the wire - Trevor limited himself to a single flight to check the trim and decided that despite the smaller and lighter engine and a more forward wing position, the model *still* needed some tail weight to get it to willingly sit at the 30 degree slow run attitude limit - and could also benefit with an increase in tip weight. None of these improvements would have been particularly surprising to any of the pilots - getting the longitudinal and lateral

trim right is a MAJOR part of flying Carrier and there will be VERY few designs where the model flies 'off-the-drawing-board' in the way the pilot wants.

Roy Green was another early flyer who, with his first attempt, achieved a very respectable flight and his best score of 209.0 points for fourth place; he's shown here with his BCD Class electric-powered Grumman AF Guardian during the slow run, doing just a little too much of a good job and picking up a warning for exceeding the 30 degree maximum attitude limit! Roy's second flight, although resulting in a slightly lower score,



showed that despite his years (his words, not mine!), proper pilot reactions were still present. Approaching the deck *way* too high, he suddenly twitched the Guardian through an impossible dog-leg in the flight path and SPLAT! got himself a hook-up on the No.4 wire. Doubtless this was a bit of a strain on the undercarriage, not to mention the newly-repainted deck surface, but a legitimate 100-point landing nevertheless!

On the right is another new model from the stable of prolific naval aviation builder Mike Welch! Surely there's no truth in the rumour that Mike started building only on the Tuesday before the contest? Here, Mike's i.c.-powered/electronically controlled BCD Class Grumman TBF Avenger lifts off from the USS Kittyhawk in the first flight of a series, each of which unfortunately ended in a slow run ditch. Nevertheless, the model is light, has the maximum 450sq.in. wing area permitted by the rules and will be modified and trimmed by Mike until he's satisfied that it's an adequate replacement for his old but *very* well performing Fairey Fulmar. The next photograph shows Mike Welch with his trademark *very* neat squeeze handle during a flight with his new Avenger, and this, together with the following three pictures, show the some of the various handle designs used by different pilots operating electronic down-the-lines throttle control.



Not the clearest of photographs, I'm afraid, as Mike's hand obscures most of the details, but the basis is a wooden handle to which the two (insulated) C/L wires are attached conventionally. At the back of the handle is a vertical throttle lever which matches the height of the handle. The lever is hinged to the handle at its base using a rotary potentiometer as the hinge pivot, lever rotation is in the plane of the handle (ie: the lever can only rotate backwards and forwards), the lever is sprung away from the handle by a spring and squeezed towards the



handle by the pilot's palm. Squeezing the lever increases revs and releasing it decreases revs. The angular movement of the lever isn't large, so the maximum change in potentiometer resistance from full throttle to tickover must be carefully matched to the servo controller (or receiver) that operates the throttle servo in the model. A length of studding fixed to the top of the handle and pointing backwards towards the pilot passes freely through a hole in the top of the lever and is terminated by a simple wing nut. You can just make out this nut at

the back of the lever between the bases of Mike's thumb and forefinger above. The studding ensures the lever rotates only in the plane of the handle; the nut on the end limits the maximum angular movement of the lever. In the absence of any 'squeeze' from the pilot, the position of this nut determines engine revs at tickover. Being a nut, it's adjustable, of course: screwing it in moves the lever towards the handle and increases tickover revs, unscrewing it does the opposite.

Here's Ian Gilbert, seen during the slow run with his BCD Class Fairey Spearfish in which he achieved an overall score of 258.8 points that got him first place. Hmmph! Not many cobwebs needed blowing away there, then! The Spearfish was converted for the 2015 season from its original electric power (which he didn't like as much as i.c.) back to

the smaller lighter piston engine he likes. Now look at Ian's own design of the electronic throttling handle. Note the method of control: right hand for pitch, left hand for throttle using a rotary potentiometer on the top of the handle to control the throttle servo on the model. So - how on earth do you score of 258.8 points AND work both hands independently? Try the old trick of patting your head and rubbing your tummy at the same time to see what I mean...



Below is Peter Tribe with his BCD Class twin-electric-powered Gloster Meteor III at the maximum permitted slow run attitude of 30 degrees during the flight which resulted in a score of 231.7 points and second place.



Can't say that many cobwebs needed blowing away there, either! The Meteor is extremely quiet and whilst not a particularly windy weather model, will cruise around as if on rails. It did! Note the method of control: right hand for both pitch AND throttle, thumb pushing the slider of a linear resistor against an elastic band tensioner which returns the slider arm to the 'tickover' setting once thumb pressure is removed (you can't see the resistor because it's attached to the blind side of the fibreglass plate quadrant mounted on top of the handle - but it's there! The picture should stand some enlargement, so blow it up a bit for a better look at the detail).

Chris Howell is shown below executing a slow run with his i.c.-powered/radio-control throttle BCD Class Grumman AF Guardian. The Guardian was built directly from a Brodak kit and whilst a commercial product



with all the expected compromises, is easily the most competitive Carrier model they've yet kitted, being directly based upon one of the top US contest models of the time. The model (and Chris!) flew extremely well, and it was only the inability of the hook to retain an arrester wire, once engaged, that prevented Chris from getting a score of well over 200 points - which would have easily been his personal best. Now - see to that hook!

Mmmm - *radio control*! There's actually nothing against this method of throttle control in the Carrier rules, and Chris has chosen to use a 'gun' type unit converted from R/C car use to act as a C/L handle as well as providing him with a trigger-grip throttle unit. R/C throttle control for C/L can, of course,

also be obtained by the use of a conventional transmitter, typically hung from your trouser belt and operated by your spare (left? right?) hand - but please refer to Ian Gilbert's photograph caption about the use of two hands at the same time before you try this solution...

Here are both of John Phillipps' very capable BCD Class electric-powered De Havilland Sea Hornets - 2014 season's model is in the background; his new 2015 season's model is in the foreground. John had the maiden flight with his new model and at 2.2lb, together with John's characteristically very careful flying, the result was looking extremely promising. Promising until, that is, an unintended collision with the deck during lap 5 of the slow run broke the engine and nacelle off; as his other model was unserviceable, that was it for the day. Despite this bad luck, a closer look will show that both models have been intelligently designed: almost every structural element is polystyrene foam, and to keep the weight down even further a single battery runs both motors and to use the battery's weight most effectively, it's lashed to the outboard side of the outboard engine nacelle where it can make a major contribution to tip weight.



That's better! Seen here making absolutely sure of stopping with Nos 1 and 2 wires safely in the hook and No.3 wrapped around the front of the model, Bob Phillipps moves back on to his big hairy-chested West 36-



powered/mechanical 3-line Supermarine 508 instead of the more usual diminutive .15-sized models with which he's been campaigning in the past. Bob hasn't flown this model much in the last year, but even then recorded a very creditable score of 212.4 which got him third place.

Conversely, the less said about Andy Housden's attempts at flying, the better! Having previously dismantled the carburettor of the OS 40 in his faithful ex-Trevor Tabor Short Seamew and then dropped the bits on his garden paving, losing a vital spring, he borrows Mike Welch's Blackburn Firebrand for his contest flights, only to slightly break it in a very rubbish landing indeed. Mike was very polite about it - and so was Trevor, who had spent hours of his own time at the end of the 2014 season refurbishing both model and engine. Ahem...



Trevor Tabor's massive Scale Class i.c.-powered/ electronically controlled Italian Cant Z.1007 Alcione (Kingfisher) is put through its paces by its owner. Operated by multi-channel down-the-lines control - you can just make out the big black box mounted on top of the control handle that contains all the circuit boards and switches - but with very traditional i.c. power that sounded gorgeous at full chat (there's a J'En 37 in each wing and an SC 25 on the nose), this model was flown in proper prototypical fashion and was *extremely* impressive! This model (and pilot!) deservedly won first place in Scale, and we hope to see more of it at some of the other Scale contests this ear!

Bit of a joint effort, this one! Mike Welch flies Yvette Horton's Scale Class SC52-powered/ mechanical 3-line Bell P-39 Airacobra. Originally an ARTF R/C model, it was converted to Control Line and fitted with a fourstroke by Mike to show that - as with a number of other pilots' Scale models seen in previous seasons - conversion of R/C models represents a relatively easy way to enjoy participation in Scale Control Line with a (relatively...) modest amount of effort.



Basic Carrier Deck at the Cosmo Aeromodelling Club Control Line Competition on Damyn's Hall Airfield in Essex on 26th April 2015

Final contest positions

Posn	Name	Club or location	Model	Engine	Score
1st	Ian Gilbert	Ipswich	Fairey Spearfish	SC 25	258.8 points
2nd	Peter Tribe	Cosmo MAC	Gloster Meteor III	375W,1550rpV + 2x 3S/1600mAh	231.7 points
3rd	Bob Phillipps	Colchester MAC	Supermarine 508	West 36	212.4 points
4th	Roy Green	Cosmo MAC	Grumman AF Guardian	Axi 2028-08 + 3S/2200mAh	209.0 points
5th	Trevor Tabor	Much Hadham, Herts	Short Seamew	SC 32	160.6 points
6th	Chris Howell	Langley Model Squadron	Grumman AF Guardian	J'En 37	132.0 points
7th	Andy Housden	Three Kings Aeromodellers	Blackburn Firebrand	Irvine 30	102.5 points
8th	Mike Welch	Marlborough MFC	Blackburn Firebrand	Irvine 30	95.1 points
9th	John Phillipps	Colchester MAC	DeHavilland Sea Hornet	375W,1550rpV + 3S/1600mAh	DQ

Detailed contest scores

Pos.	Name	Model	Engine	Fast time (secs)		Slow time (secs)	Warn-ings	Time points		Landing points	Deduct points	Scale points	Colour points	Final score
1st	Ian Gilbert	Fairey Spearfish	SC 25	39.6		165.6		126.0		100	0	10	10	246.0
		Fairey Spearfish	SC 25	32.8		171.6		138.8		100	0	10	10	258.8
		Fairey Spearfish	SC 25	32.6	D	-		-		-	-	-	-	A
		Westland Wyvern	Magnum 25	36.4		168.8		132.4		100	0	10	10	252.4
2nd	Peter Tribe	Gloster Meteor III	375W,1550rpV + 2x 3S/1600mAh	31.3		143.0		111.7		100	0	10	10	231.7
		Gloster Meteor III	375W,1550rpV + 2x 3S/1600mAh	31.4		142.5	2	111.1		100	0	10	10	231.1
3rd	Bob Phillipps	Supermarine 508	West 36	27.3		119.7		92.4		100	0	10	10	212.4
		Supermarine 508	West 36	27.0		123.3	1	96.3	D	-	-	-	-	DQ
4th	Roy Green	Grumman AF Guardian	Axi 2028-08 + 3S/2200mAh	35.0		124.0	1	89.0		100	0	10	10	209.0
		Grumman AF Guardian	Axi 2028-08 + 3S/2200mAh	27.2		109.7	1	82.5		100	0	10	10	202.5
5th	Trevor Tabor	Short Seamew	SC 32	31.4		72.0		40.6		100	0	10	10	160.6
6th	Chris Howell	Grumman AF Guardian	J'En 37	30.6		111.9	1	81.3	D	-	-	-	-	DQ
		Grumman AF Guardian	J'En 37	28.4		120.4	2	92.0		20	0	10	10	132.0
		Grumman AF Guardian	J'En 37	27.8		122.8	1	95.0		0	0	10	10	115.0
7th	Andy Housden	Blackburn Firebrand	Irvine 30	30.0		112.5	1	82.5		0	0	10	10	102.5
8th	Mike Welch	Grumman TBF Avenger	SC 25	37.6		D		-		-	-	-	-	DQ
		Grumman TBF Avenger	SC 25	35.5		D		-		-	-	-	-	DQ
		Blackburn Firebrand	Irvine 30	32.5		D		-		-	-	-	-	DQ
		Blackburn Firebrand	Irvine 30	30.8		105.9		75.1		0	0	10	10	95.1
9th	John Phillipps	DeHavilland Sea Hornet	375W,1550rpV + 1x 3S/2200mAh	31.4		D		-		-	-	-	-	DQ