ABERDEEN AND DISTRICT SOARERS

Newsletter No.29

7 Ashgrove Road West

Aberdeen

March 1987

Looking back over the several years that the ADS Newsletter has been published, there seems to be no regular pattern to the frequency of issues - this year will be no exception. So many promises have been made for a March issue that your editor is under severe pressure to go into print - so here goes.

1987 has started as a terrific year for the slope (dare I say power also?). The weather has been remarkable, producing some excellent winds and fine sunny Saturdays. A record collection of flyers (some for the first time) flew from Durris one fine Saturday in January. At least fifteen of us were there. Even the T46 have had three outings this year.

Having started as we mean to continue, a further copy of '87 dates is enclosed. You will note one change. The 24th May slot clashed with Radioglide. We've moved the Balmedie meet to 31st May as it is possible a number of our competition enthusiasts will be at Radioglide. We wish them well.

A good sprinkling of new and nearly new members are around. Some have not received a copy of ADS flying sites -a copy is enclosed. Compared with many glider flyers throughout the country, we are fortunate to have such a range of slopes. Some are better than others, some more accessible than others, but overall we can cover most wind directions and strengths. Let's take advantage of these slopes and preserve them for our continued use.

We ought not forget the flat fields at Balmedie, Seaton and Stonehaven. The power winch will be in operation again this year and with slight modification and a trolley (many thanks Brian) should prove its worth. We might even try to launch the 1/5th and 1/4 scale models!

Listed in this newsletter are the phone numbers of paid up members of ADS. If your name does not appear, we've either forgotten to include you (sincere apologies, please let George know) or else you have not paid up. We had a superb response to the request to pay up early, particularly in respect of insurance cover. This will be the last newsletter you will receive unless you make ammends.

EXTRAORDINARY GENERAL MEETING

There was a good turnout of members at this meeting on the 20th January. It was announced by the committee that John McConville had resigned as Chairman and from the committee. This was regretted, as it was felt by all that John would have proved an excellent Chairman.

Nominations were requested from the floor for a replacement. After a vote, Graham Donaldson was duly elected.

Following this a number of points were raised and discussed. These included the following:-

1. It was stated that the SAA in negotiating insurance cover had agreed to a £50 excess of which £30 would be reimbursed by the SAA to claimants. It was stated that no claims will be entertained in respect of damage to cars parked adjacent to the flying site.

2. Non members cannot be elected to the committee.

3. An exhibition was set up by the 'Stonehaven Connection' in the local library. There seems to have been a considerable interest shown. Many thanks to those who participated.

A 'Bring and Buy' auction ended the evening - 10% of sales plus Norrie's generous donation were given to 'Guide Dogs for the Blind'. Some excellent bargains were available - don't miss the next sale.

GLASS CLOTH DEMONSTRATION

A get together on Tuesday 10th March was well attended in spite of the lack of the official notification of members.

The committee, and in fact all who attended wish to thank Norrie for the EXCELLENT demonstration of the use of glass cloth and epoxy. He made it look so simple. However, I'm sure there will be many attemps to emulate him. By the way Norrie does have stocks of epoxy resin and hardener - excellent stuff if his demo is anything to go by, and at a reasonable price. Enquiries to Norrie at 324722. I think the epoxy is made by a company called 'Crown'!! Thanks again Norrie.

At both the above evenings the Cammachmore Hotel have been more than generous in enabling us to have their function suite. Refeshments have also been made available at modest cost. So thanks to the staff. I'm sure we'll be back.

LIST OF '87 MEMBERS TO DATE

01	JIM ANDERSON	641110
02	DOUGLAS ALLAN	79 500
03	ANGUS BROWN	92 64144
04	JOHN BARNES	932 2368
05	DUNCAN CHRISTIE	92 62242
06	KIMBERLY CORMACK	572297
07	GRAHAM DONALDSON	486961
08	RICHARD DONALDSON	486961
09	NORMAN DUNBAR	895321
10	NEIL FRASER	310726
11	CLIVE GRUNDY	92 63882
12	COLIN GANLEY	92 64276
13	MARK HALDANE	724469
14	TOM HAMILTON	310306
15	G. KIDD	722900
16	NORRIE KERR	324722
17	RAJOO LOGANATHAN	770422
18	STEWART LAWSON	92 65243
19	RON LOCK	733693
20	JOHN LEES	06512 2855
21	TOM MC PHERSON	92 63868
22	JOHN MC CONVILLE	824179
23	JIM MASSON	896794
24	NEIL MASSON	896794
25	GERRY MITCHEL	324828
26	DONALD MC DONALD	92 62173
27	TERRY MIDDLETON	92 30157
28	DAVE MORRIS	317759
29	BRIAN ORD	698449
30	GRAHAM PHILIP	92 64209
31	ALAN STEWART	722663
32	PAUL SHEPHERD	741670
33	MALCOLM SATTERLEY	92 62980
34	FRANK SKILBECK	743052
35	CRAIG SCOTT	92 64905
36	BILL STARK	640560
37	DON SINGLETON	92 65310
38	DOUG STEWART	0358 43356
39	ANDREW THOIRS	642276
40	GEORGE WHELAN	638453
41	KEVIN WHELAN	
42	A. WATT	572292

CLOTH BADGES

It was agreed at the AGM (if you remember) that George Whelan was to investigate the cost and availability of cloth ADS badges. This he duly did and reported back to your committee. After discussion, it was agreed that each member paid up for 1987 will recieve a free badge with this newsletter. So if you did not recieve a badge, we have no record that you have subscribed this year. If not, shame on you!! Open that cheque book now and send us your money. It is assumed that spare badges will be available for members to purchase. please contact George with your order.

REVIEW - Pegasus Models 'TOPAZ'

The Topas was conceived during an age when F3B World Championships could still be won with kits such as the Aquila Girande or the Graupner Cummulist. This kit is very 'low tech', although the later version features a veneered foam after deck and the carved balsa canopy has been replaced with a clear plastic one (rung one in the 'hi-tech' ladder).

The kit apart from the foam after deck is entirely of wood construction. The fuselage has a ply doubler and substantial cross bracing between the wing roots. The fuselage has 1/4" triangular longerons between the side and bottom sheets and this allows quite a substantial amount of wood to be hacked away. A snake was to be used for the elevator control, so this was glued in at an early stage as was a tube for the Rx aerial. A closed loop system was to be used for the rudder, so exit tubes were fitted. The foam deck was sanded and glued in position. The ply wing root templates were then fitted and faired in using cellulose putty. Final sanding and the fuselage was ready for its Solarfilm covering.

The tail was built as per the plan except that I decided to make it a permanent fixture using the nylon bolt supplied. First snag - the bolt supplied was 1/2" too short. After some head scratching, I removed the ply tailplane platform, fitted the bolt through it and reglued the platform to the fuselage.

The wing was built next and is entirely standard with a 1/16th sheet 'D' box leading edge, 1/16th capped ribs and trailing edge. The only modification made was to add balsa blocks above and below the wing tubes. This tubing is heavy gauge but with a bore of only 5mm. I was half tempted to replace the tubes to take 1/4" rod, but resisted in the end as I was determined to build the model as per the plan as far as possible. The wing was covered in Solarfilm and when assembled with the fuselage, resulted in a very ligh nice looking model.

The only real snag was with the cockpit canopy. This was made of a very brittle clear plastic. Any attempt to cut it with sissors resulted in it cracking in random directions. I managed to get away with one attempt and so resorted to a blunt razor saw. This worked fine and the cockpit was duly finished and fitted.

A phone call from some of the boys on a fine Saturday afternoon resulted in a hasty installation of the gear and a run up to Durris. At the flying site there was a good covering of snow, a steady 10kt breeze and not a cloud in sight. One of those days when you knew God flew slope soarers! (I agree, I was there.Ed)

The model did not fly straight off the board. Due to the hasty radio installation, I did not have enough elevator trim. The Topaz did a circuit and landed safely. The elevator was tweeked and the model launched again. This time no problems. The wing dihedral seemed a bit shallow but was exactly as the plan. Even with this shallow dihedral, the model grooved quite well in the turns, not dropping the nose in any but the tightest turns. Elevator was gradually fed in until the onset of the stall, this

was predicted by the model nodding slightly but not stalling until even more elevator was applied. The stall was level with no tendency to drop a wing. The plane quickly recovered once the sticks were neutralised. Despite such a lightly loaded model with plenty of wing area it penetrated very well and very quickly gained speed with down trim applied. Several loops were carried out as I was concerned that the wing dowels seemed on the small side for a 3m broad chord wing. The amount of flex was no more than usual and the wing returned to its normal dihedral at the end of the manouver.

I deliberately made no ballast provision as I wanted this model for purely light weather soaring. To date I've not had the opportunity to try the model off the line, but do not forsee any problems.

Overall the 'TOPAZ' is a nice straightforward kit to build, apart from the two minor points mentioned. It is very satisfying to fly.

Gerge Whelan

OFF THE HOOK

We hear that Jim and George, the terrible twins are fabricating balsa at such a rate that the Balsa Cabin is on overtime supplying them. It must be handy having all that time off! Once you've finished Jim, don't forget the replacement kitchen.

A tip from Norrie - if you do fit a new kitchen, all the doors come with neat little plastic corner protectors. THey make great right angle brakets. Ideal for fuselage jigs.

We hear Brian Ord has available FIRST CLASS model boxes - large enough for any model. The're available in pine, mahogany or oak, handles are optional. (there's no truth in the rumour that Brian took this job just to ensure suitable model transport to Radioglide!)

EPITAPH OF THE MONTH

Here lies Abednigo Firkle
Killed in the landing circle
He went to get his plane
And another plane got him.

Icarus

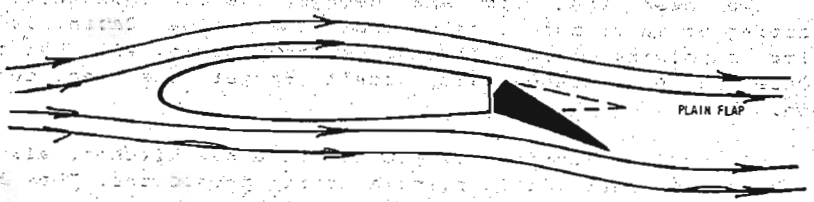
FLAPS

The introduction of flaps into the world of model flying has been extreemly slow in comparison to the systems used in the full size world. It is generally accepted that flaps are not necessary and add extra weight and complication. Whilst this true to a certain extent, the benefits are greater than at first imagined. This is especially so with the development of the larger models (5kg or more). This article will explain the different type of flap available and conclude with general notes on the use of flaps with models.

Flaps provide a means of increasing the lift available with a wing at all angles of attact. The use of flaps shortens the take-off run, the stalling speed is decreased and where necessary, greater drag may be produced to help decrease the approach speed and the landing run.

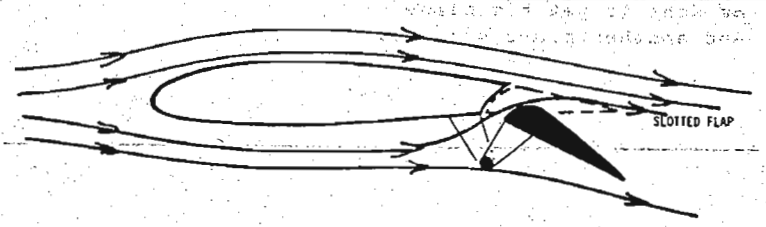
PLAIN FLAP

This is often refered to as the trailing edge type. It is more or less the rear of the wing hinged downwards. When the flap is lowered, the camber on the upper surface of the wing is increased which in turn increases the velocity of the airflow and results in a further reduction of the pressure. A concave camber is produced on the under surface of the wing which decreases the air velocity and increases the pressure. The resultant increase in lift on that part of the wing may be as much as 50%.



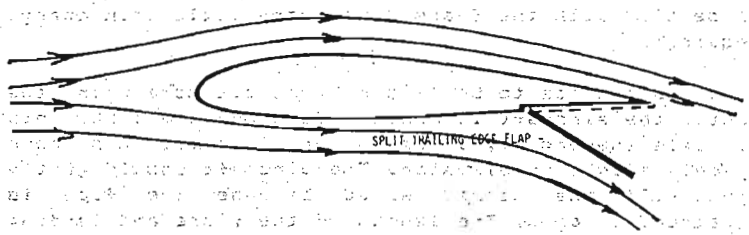
SLOTTED FLAP

This is similar to the plain flap, but is designed so that when it is lowered a slot is formed between the wing and the flap. This gap is smaller at its upper end. When the flap is lowered air will flow through the slot and accelerate. This reduces turbulence over the flap, at the same time increasing the lift and decreasing drag. Up to 53% increase in available lift is possible.



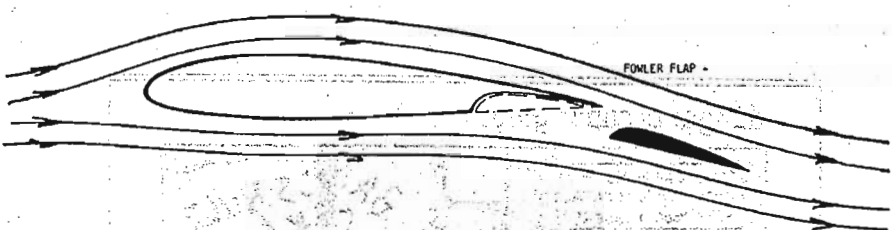
SPLIT FLAP

With this type, the under surface of the wing at the trailing edge is designed to hinge down, leaving the upper surface unaltered. When the flap is lowered, the air is forced to change direction having the same effect as an increase in camber in the top surface i.e. an increase in velocity and a decrease in pressure. On the bottom surface, a concave camber is produced decreasing the velocity and increasing the pressure. In addition, the reduced pressure created between the flap and wing produces a further increase in velocity over the top surface and thus a further decrease in pressure. This type of flap may result in up to a 70% increase in lift and was adopted in such famous tpyes as the Spitfire and DC3.



FOWLER OR EXTENSION FLAP

This consists of a small aerofoil section housed under the trailing edge.When flaps are selected down the aerofiol moves rearward and downward. This has the effect of increasing the camber on the top surface which increases the velocity and decreases the pressure. A concave camber is produced on the bottom surface decreasing the velocity and increasing the pressure. In addition, the wing surface area is increased. These flaps may result in as much as 90% increase in lift.



The deployment of flaps has two main effects, firstly an increase in lift and secondly an increase in drag. The first 7-10 degrees of flap increase the lift but have little drag increase. From 10 degrees up, the lift and drag increase in proportion to the amount of flap deployed. It is for this reason that on take-off or when flying and increased thermalling performance is required that the maximum flap required is about 7-10 degrees. As more flap is lowered, then the drag increases with lift causing a steeper descent because of the increased glide angle. In power aircraft the approach can be controlled by applying power to lessen the glide angle. The golden rule to remember is that elevatr controls speed and throttle controls height. If the

aircraft is descending with no power and full flap, then it has little control over its height - it just descends with the elevator controlling the correct glide speed. If power is applied, the approach can be much shallower, but still at the same speed. This is more noticeable in large jets, where large amounts of power are required to achieve the correct glide angle at low speeds.

With gliders, the above considerations apply and because of the absence of power, full flap results in a very steep glide angle. On most aircraft with flaps (around 20-30 degrees lowered) the approach has to be flown slightly differently. Trim changes have to be expected, but can be minimised by lowering the flaps slowly and killing any ballooning with the elevator. Once the aircraft has settled with the flaps down, very little trim change is usually required.

The approach needs to be 'flown' that bit more with the nose down until the aircraft is about a foot off the deck. This is the time to idle the engine, if any power increase has been used and to apply slight up elevator. The aircraft should gently settle at around half the normal speed because the flap is slowing the aircraft down. The length of the flare and landing run are thus greatly reduced.

To sum up, flaps offer increased lift and drag, the ability to alter the wing profile in flight, and a reduction in landing speed (safer flying?, less damage?). They will greatly increase the scope of model flying, try them, you won't regret it.

John McConville