UHU HELPS THE SLOVENIAN SPACE MODELLERS

by Joze Cuden

In model making, bonding is one of the basic and most frequent ways of joining different materials and parts of models and that is why it is becoming more and more important. The process which has recently been a hard task for many modellers, especially in the case of complex models, became very simple due to a wide choice of adhesives. It can be performed by everyone if the right adhesive is chosen and the bonding instructions are carefully followed.

Out of experience it is known that the choice of adhesive is very important for joining particular materials. Some adhesives bind very well certain substances but are not adequate for the other ones. The resistance of the joined parts is influenced by different loads on one hand and previous preparation of joining surfaces on the other. Good bonding results can only be expected if the characteristics of the adhesives are known and their regular use is assured.

The development of chemistry introduced many artificial materials which are the base of the industry of adhesives. New effective means enable bonding in the fields where recently the traditional techniques such as screwing, soldering, ductilling or welding have been used.

Miha Cuden bonds plastic launch lugs on the beginner's rocket kit Arcus with new cyanoacrilate UHU blitz.

As we are living in the period of bigger and bigger awareness of overpollution, the industry of adhesives itself emphasizes effective ecological resources and measures.

Materials which are used for space models building differ noticeably although the most often used are balsa wood, paper and artificial materials. The choice of the adhesive has to be in accordance with the chosen material. The principle rule is that adhesives with lower specific weight are more convenient. They should not influence the resistance of bonded parts, especially the most loaded ones.

The occurring loads themselves require the use of the most quality adhesives where for an optimal resistance of joined parts a minimal layer of adhesive is sufficient. A thick layer would result in an overweight model, which would cause a lower flying height or a shorter flying time.

A bad characteristic of the adhesives which are solvent-based is their shrinkage when coagulating. That kind of adhesive has to be spread very carefully. In the case of the overdose the shrinking can cause deformations in the construction of the model.

The parts which are placed near the rocket motor or touch its housing can cause slackening of the joined parts because of the heat. In this case the higher temperature resistant adhesives have to be used.

Nowadays adhesive producers produce many kinds of adhesives, from universal to special ones. One of the firms that has an excellent reputation among model makers, thanks to its wide offer of quality adhesives, is UHU. Consequently modellers most often choose the UHU-products from the adhesives available on the Slovenian market. From the wide range of the adhesives offered every modeller can find an answer to his model constructing problem.

The Use of UHU Adhesives in Spacemodelling

With Polyvinyl - acetate or white glues all parts of space models made of wood and paper can be bonded. They dry longer and

Preparing material for a parachute construction. Nina Cuden and Luka Svete join two parts of mylar foil with diluted contact glue UHU greenit.

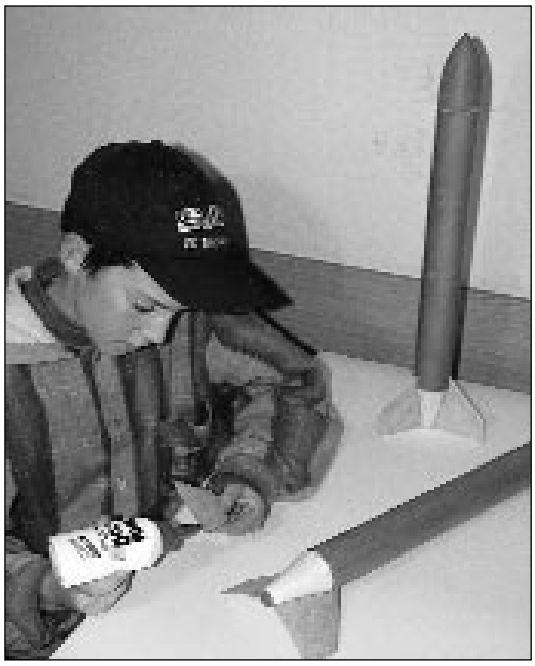
Martin Marguc knowsWhite glue UHU coll express is the most convenient for building a booster glider out of balsa parts.

Luka Svete readies his laminated epoxy contest model. Fins are bonded with UHU hart.

are especially convenient for bonding bigger areas, (for example balsa veneer of the boost glider's wings). They do not desolve Styrofoam. They are used for making wings or parts of models where the Styrofoam core is covered by balsa veneer. They adhere harder to lacquered areas, and that is why one has to be careful when bonding fins. Previously, the joining surfaces have to be cleaned by sanding paper. White glue is also a good impregnation means for the protection of parts exposed to exhaust gases (inner part of the body tube above the engine, shock cord ...).

Recently, fast-drying white glues have been available; UHU-coll express for example. At room temperature, this adhesive achieves hardiness as quick as five minutes. With the exception of some special ones (UHU-coll wasserfest which is water resistant), these adhesives are not to be put in a humid place for a long time. UHU produces various Polyvinyl - acetate adhesives UHU-coll (Holzleim, express, spezialleim and wasserfest).

Contact adhesives are one and two-component adhesives, made on a synthetic rubber basis. The joined part made by this adhesive always remains elastic. The adhesive is put thinly on both surfaces which have been previously thoroughly cleaned. Dependent on layer thickness and material composition, the solvent evaporates completely after 5-15 minutes. The coat is almost completely dry while it still slightly sticks to the fingers if touched. At that moment both



Fins can be bonded on the body tube with white glue before the surface is covered with paint or enamel (modeller Primoz Brejc)

parts have to be connected and pressed together or rolled with a little roller. UHU greenit is a specimen of that group of adhesives. Normally, the bonded parts have to be put together carefully because they would stick together instantly and later corrections would not be possible. UHU successfully solved this problem when they invented a contact adhesive UHU greenit kompakt - kraft which is resistant to higher temperatures - up to 110°C and which also enables later corrections of parts' positions.

Contact adhesive in spray called UHU spruhkleber is especially interesting.
With contact adhesives we bond plastic foils for covering soft wing rocket gliders, we cover body tubes of model rockets or join parts of foils from which parachutes and streamers are made.

Adhesives for plastic materials

For PVC bonding UHU offers UHU PVC adhesive. UHU allplast bonds different artificial materials in a wide temperature range - from temperature under 0 up to 90(C. For hard Polystyrene (plastic parts of scalemodels in kits) bonding UHU plast is used. It is available in two forms, thin or thick. The thin one is available in a small bottle with a spreading brush, the thicker one is in a tube.

UHU-por is a special adhesive for bonding Styrofoam. It is often used when making wings in so called sandwich construction (a combination of Styrofoam and balsa wood).

Among universal adhesives which are rarely used in model making, there is an adhesive called UHU flinke flasche which is very useful. It is available in a practical plastic bottle with a movable head for spreading. It is used in the same way as other universal adhesives but it is less aggressive than other ones and also suitable for bonding Styrofoam.

Special adhesives for model making are especially appropriate for bonding most frequently used model making materials: balsa wood and other kinds of wood, paper, metal, glass, acetate cellulose (celluloid), acrylic glass (PMMA) and some other artificial materials. UHU hart is such this kind of adhesive; it is a quality transparent, fast-drying adhesive and very popular among the rocket model makers. UHU hart is indispensable at making rocket planes where the basic material is balsa wood. Stabilizers, engine centering rings and wire elements (launch lugs) can be bonded, shock cords can be fixed with it etc.

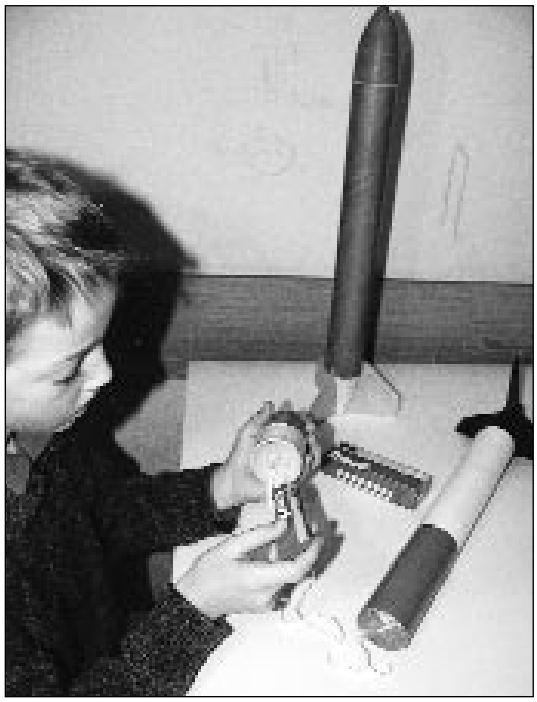
Epoxy glues are modern two-component adhesives (resin + hardener) without which one could hardly imagine a model rocket building today. They are designed for more complex bondings and quality joining of different materials, including metals and most of the artificial materials (with the exception

Vito Campa fastens wire launch lug on his boost glider using two component's expoxy glue UHU plus schnellfest.

of teflon, Polyethylene and Polypropylene). They bond perfectly all usual model materials such as balsa wood and other kinds of wood, paper, Styrofoam and also some other materials. They are not only useful for bonding but also for filling the gaps and cracks. Dried adhesives are transparent and can be well whetted or worked on in some different way. If they are poured into a corresponding shaped model, a casting which can be mechanically worked on is obtained. Repeating parts of a model can be duplicated, a scale model's details for example.

For wide consumption, UHU produces different adhesives. UHU-plus endfest adhesive becomes completely hard in 12 hours. 15-minute's UHU-plus schnellfest is faster. The prepared mixture of adhesive have to be used in five minutes while the final hardiness is achieved after some hours. The fastest is the 5-minutes' UHU-plus sofortfest. The latter two adhesives are usually used for quick repairs outdoors.

UHU aktiv is a specialty. There, the components need not to be mixed. The resin is put on one surface, the hardener on another. An interesting product is UHU ABS, special adhesive for ABS. One of the newest UHU adhesives is UHU plus acrylit with one powder component.



Gasper Zupancic fastens shock cord inside the polyurethane nose cone of the Goliath rocket lit (national class S3) using UHU hart

Cyano-acrylate adhesives are also known under the name instant or super glues. Their important advantage is an extremely short time of hardening - from 5 to 20 seconds. Even a small quantity is sufficient for a resistible junction. As this adhesive does not fill the openings and cracks, the surfaces of joined parts have to fit perfectly. In the space modelling, it is often used in combination with epoxy adhesive. The parts are bonded or fixed in the foreseen position. Afterwards, the contact is strengthened by epoxy adhesive which fills all gaps.

The cyano-acrylate adhesives perfectly join laminates to each other or to other materials: balsa, artificial materials and metals. They are also useful for fast outdoor repairs.

Careful spreading up enables clean, almost invisible joins (bonding details on scale models for example). UHU-sekundenkleber is a specimen of such adhesives. It is suitable for instant bonding of objects with smooth surfaces while sekundenkleber gel serves uneven surfaces bonding and sekundenkleber spezial porous materials bonding.

The Role of UHU in Development of Spacemodeling and Technical Culture in Slovenia

UHU with its representative, UNIHEM company from Ljubljana pays a great attention to the development of spacemodelling as well as to other model making activities in Slovenia. It is a sponsor of competitions and meetings of young technicians and it equips the model making school with its products. The school is active within the Technical center in Ljubljana. For some years, the UHU company has been the sponsor of the Slovene spacemodelling national team which achieves, thanks to its great support, excellent results on international competitions.

Co-operation of producer - UHU and consumers - model makers is wide and has been performed for several years for the benefit of both sides.

In school circles little children are being acquainted with the right choice and use of adhesives. They learn how to use them and continue using them later for their work in clubs, associations and at school lessons. Modellers and instructors take care of supplement education of school teachers and elementary schools mentors who consequently transfer the accumulated knowledge to their pupils.

Modellers are reliable and highly qualified demonstrators and take care of the promotion of products at fair exhibitions and presentations.

The producer also profits from the experience of direct users - model makers. Their tips are useful during the development of new kinds of adhesives and improvement of existing products. Practical remarks and proposals can undoubtedly contribute to the quality of adhesive products and to the appropriateness of their packaging.

Investments into the development of model making as a technical sport discipline are being repaid by superior sport achievements which are an excellent advertisement for the sponsor's company.

1996 Control Line World Cup

by Bruno Delor Control Line World Cup Co-ordinator

In the late eighties circumstances were emerging in Europe which seemed to sentence control line to its end in the near future:

- gradual loss of interest in participation in a good number of competitions mainly due to the high cost of travelling abroad, was all the more difficult to bear because our old continent was affected by an economic crisis,

- hence a number of clubs gave up the idea of organising international competitions because there was too much work for disappointing results in terms of participation; not even allowing for the risk of financial loss.

- a further effect is often the gradual stop of facilities maintenance for a lack of sufficient activity.

The first recovery stage, was the bursting forth of Eastern countries and their introduction to market economies which have stopped the haemorrhage. In fact many model builders from these countries began to participate in international competitions to sell their models. In a few years' time, contest places have become exchange and market places where Western control line competitors could find at affordable prices the products and accessories they could not get at home. Consequently this situation gave a boost to a number of international competitions. Rather logically, the competitions that had a centre position in Europe made the most of it.

Control Line has been official since 1995 and concerns F2A (speed), F2B (aerobatics), F2C (team-racing) and F2D (combat) classes. It aims at encouraging participation in international competitions, which is liable to revive control line on a long-term basis. Therefore, the Control Line World Cup principles and rules are largely derived from those of the World Cup which have been in existence for Free Flight.

OUTLINES OF THE RULES

The competitions which count for the World Cup are indicated on the FAI calendar. A maximum of two competitions in each class may be selected for any country.

Points allocation

The points allocated to competitors (teams in F2C) depends on the number N of competitors (teams in F2C) who have completed at least one flight in the event.

a) N>20									
Placing	1	2	3	4	5	6	…	20	21 and After
Points	20	19	18	17	16	15	…	1	0

A bonus of 8 points is given to the first, 5 points to the second and 3 points to the third.

b) NC2o or N=20									
Placing	1	2	3	4	5	6	…	N-l	N
| Points	N	N-1	N-2	N-3	N-4	N-5	…	2	1

The bonus is defined as follows:

* for the first N/3 rounded up to the nearest whole number of points and with a maximum of 8 points,
* for the second N/5 rounded up to the nearest whole number of points and with a maximum of 5 points,
* for the third N/7 rounded up to the nearest whole number of points and with a maximum of 3 points.

In the event of a tie for any placings, the competitors (teams in F2C) with that placing will share the points which would have been awarded to the places covered had the tie been resolved (round up the score to the nearest whole number of points).

CLASSIFICATION

The World Cup results are determined by considering the total points obtained by each competitor (team in F2C) in the World Cup events. Each competitor (team in F2C) may count the result of all competitions, except that only one competition may be counted from each country in Europe (taking the better score for any European country in which he has scored in two competitions). To determine the total score up to three events may be counted and selecting each competitor's (team's in F2C) best results during the year. The winner of the World Cup is the competitor (teams in F2C) with the greatest total.

In the event of a tie for first, second or third place, the place will be determined according to the following scheme. The number of events counted is increased from three, one at a time, until the winner is obtained. If this does not separate the tied competitors then the place will be determined by considering in the best three events:

- in F2B and F2D the points obtained in each event multiplied by the number of competitors who will have completed at least one flight in the event, the winner is the one with the greatest total thus calculated, in F2A the best speed and in F2C the best

Roberto Pennisi and Andrea Rossi (Italy). F2C 1996 World Champions and 4th place in the World Cup

Gilbert Boninger (France) F2B second place

time.

RESULTS

Class F2A (speed)

Normally, however, 14 competitions are considered for the results in speed. 13 competitions were considered as results from Moscow were not received. 51 competitors were placed from 19 different countries.

The most important competition in speed was Sebnitz in Germany (18 competitors from 6 countries).

RASCHWAL Thomasz (Poland) won F2A with 40 points scored for two wins and a second place for a total of four competitions. He was challenged by Peter GRUNDEL (Germany) with 27 points and Lukasz SIEDJA (Poland) a **junior** with 25 points. The best speed realised during the year is from Thomascz RASCHWAL (Poland) with 298,0 km/h at Pepinster.

COMPETITIONS CONSIDERED FOR THE 1996 CONTROL LINE WORLD CUP

			F2A	F2B	F2C	F2D
Vidreres (SPAIN)	6 - 7 April	VI	*	*	*	*
Piennes-Landres Lorraine (FRANCE)	4 - 5 May	PL	*	*	*	
Salzburg (AUSTRIA)	16 - I9 May	SA	*	*	*	
Tautenhain (GERMANY)	18 - 19 May	TA				*
Hradec-Kralové (CZECH REPUBLIC)	24 - 26 May	HK	*	*	*	*
Aalborg (DENMARK)	25 - 26 May	AA	*	*	*	*
La Queue-en-Brie (FRANCE)	25 - 27 May	QB	*	*	*	
Radfeld (AUSTRIA)	8-9 June	RA		*		*
Sebmitz (GERMANY)	8 - 9 June	SE	*		*	*
Pécs (HUNGARY)	22 - 23 June	PC	*	*	*	
Näfels (SWITZERLAND)	6 - 7 July	NA		*		
Pepinster (BELGUIM)	10 - 11 August	PE	*	*	*	
Wierzawice (POLAND)	16 - 18 August	WI		*		
Gyula (HUNGARY)	23 - 25 August	GY	*		*	
Breitenbach (SWITZERLAND)	24 - 25 August	BR		*		
Lugo di Romagna (ITALY)	6 - 8 September	LR	*	*	*	
Valladolid (SPAIN)	7 - 8 September	VA	*	*	*	*
Sebnitz (GERMANY)	14-15 September	SE		*		
Caiscais (PORTUGAL)	20 - 22 September	CA	*	*	*	*

1	RASCHWAL Thomasz	POL	40 points	PE	1/8	GY	1/9	SE 2/15
2	GRÜNDEL Peter	GER	27 points	SE	1/15	SA	2/6	
3	SIEDJA Lukasz (junior)	POL	25 points	SE	3/15	Pe	2/8	
4	KOFLER Helmut	AUT	14 points	LR	2/8	SA	3/6	
5	ROSENHAM Gunther	GER	13 points	SE	4/15	PE	8/8	
6	SCHMITZ Norbert	GER	12 points	SE	7/15	PE	1/2	
7	BILLON Gerard	FRA	11 points	QB	1/4	VA	1/2	
7	BORZIKINE Alexander	RUS	11 points	SE	5/15			
7	BURSA Libor	CZE	11 points	HK	2/5	SE	10/15	
7	HODEK Jan	GER	11 points	PE	3/8	SE	13/15	
7	MARKSTEINER Franz	AUT	11 points	SA	4/6	SE	8/15	
7	ZANIN Stefano	ITA	11 points	LR	1/8			
13	ELEKES lmre	HUN	10 points	PC	1/7			
13	LYHNE-HANSEN Niels	DEN	10 points	PL	2/6			
l3	METKEMEIJER Rob	NED	10 points	SE	6/15			
13	POPOV Iwalyo	AUT	10 points	PE	7/8			
13	VINCZE Viktor	HUN	10 points	PC	2/7			
18	FORKERT Ulrich	GER	9 points	SA	5/6			
18	KALMAR Sandor	HUN	9 points	PC	4/7			

Josef Fischer and Hans Straniak (Austria) F2C World Cup winners

Class F2B (aerobatics)

16 competitions were considered for the results in aerobatics. 137 competitors placed from 18 different countries.

The most important competition in aerobatics was Nafels in Switzerland (32 competitors from 7 countries) followed by Pepinster in Belgium (31 competitors from 10 countries). As last year **Billon Gerard (France) won in F2B** with 73 points scored for two wins and a second place for a total of four competitions. He was challenged by two other French men Gilbert Bertinger with 67 points and Serge Delabarde with 58 points. The best junior is Arroyo Angel (Spain) placed 31th with 18 points.

1	BILLON Gerard	FRA	73 points	PI	1/23	Pe	1/31	VA	2/15	
2	BERTINGER Gilbert	FRA	67 points	PI	6/23	NA	1/32	PE	2/31	
3	DELABARDE Serge	FRA	58 points	PI	3/23	VA	1/15	PE	4/31	
4	DESSAUCY Luc	BEL	57 points	SA	4/27	PE	3/21	SE	1/14	
4	MAIKIS Klaus	GER	57 points	SA	3/27	NA	3/32	BR	1/16	
6	GAUTHIER Philippe	FRA	51 points	QB	3/27	PE	7/21	VA	3/15	
7	COMPOSTELLA Luciano	ITA	47 points	VI	1/12	PI	7/23	LR	2/15	
8	GERMANN Peter	SUI	44 points	RA	1/12	NA	6/32	LR	4/15	
9	WEINSEISEN Walter	AUT	43 points	RA	1/12	NA	6/32	LR	4/15	
10	de JONG Henk	NED	40 points	PI	2/23	PE	5/31			
11	WEINMANN Erhard	AUT	37 points	SA	5/27	BR	4/16	LR	8/15	
12	CAPPI Clemente	ITA	36 points	VI	4/12	PI	10/23	LB	3/15	
12	STANO Jan	SVK	36 ponts	HK	5/13	WI	1/12	SE	4/14	
14	HOLTERMANN Christoph	GER	35 points	HK	3/13	WI	2/12	SW	7/14	
14	MOROTZ Attila	HUN	35 points	SA	1/27	PC	1/5			
14	SCHREK Alexander	SVK	35 points	HK	3/13	WI	2/12	SE	7/14	
17	JANSSEN Eric	NED	32 Points	QB	4/27	PE	6/31			
18	MAGGI Alberto	ITA	28 points	NA	13/32	LR	1/15			
19	DEGNER Uwe	GER	26 points	SA	12/27	NA	12/32	PE	13/31	
19	WHITTLE Norman	USA	26 points	NA	7/32	PE	9/31			

Gerald Billon (France) F2B World Cup Winner

Class F2C (team-racing)

14 competitions were normally considered for the results in team-racing. Finally 12 competitions are considered (results from Moscow not received and Hradec-Kralove cancelled for a lack of competitors). 68 teams are placed from 16 different countries. The most important competitions in team-racing was Salzburg in Austria (25 teams from 10 countries) followed by Piennes in France (19 teams from 6 countries). As last year the team **FISHER/ STRANIAK (Austria) won in F2C** with 57 points scored for a win, a second and a fourth place for a total of 4 competitions. This team was challenged by the teams BORER/SACCAVINO (Switzerland) with 43 points and ~ESSAUCY/DESSAUCY (Belgium) with 37 points. The best junior team is SURUGUE/SURUGUE (France) placed 25th with 12 points. The best time realised during the year is from the team HEATON/BRODHEAD (Great Britain) with 3' 15" 3 at Piennes.

1	FISHER/STRANIAK	AUT	57 points	SA	2/21	LR	1/14	PI	4/17	
2	BORER/SACCAVINO C.	SUI	43 points	SA	3/21	LR	3/14	PI	10/17	
3	DESSAUCY/DESSAUCY	BEL	37 points	PE	1/14	QB	3/10	SA	12/21	
4	PENNIS/ROSSI	ITA	36 points	SA	1/21	LR	7/14			
5	METKEMEIJER/METKEMEIJER	NED	31 points	PE	3/14	SA	4/21			
6	NITSCHE/NITSCHE	AUT	28 points	PC	1/4	SA	8/21	LR	5/14	
7	BONDARENKO/LERNER	UKR	27 points	SE	1/8	SA	5/21			
7	GILBERT/GILBERT	FRA	27 points	PI	7/17	SA	10/21	LR	10/14	
9	DELOR/CONSTANT	FRA	24 points	PI	13/17	SA	9/21	PE	8/14	
10	LANGWORTH/CAMPBELL	GBR	23 points	PI	1/17					
11	HEATON/BRODHEAD	GBR	19 points	PI	2/17					
12	MATA/PASTOR	ESP	18 points	VA	3/3	PE	7/14	LR	6/14	
12	MORTINHO/GOULAO	POR	18 points	VA	1/9	CA	2/7			
12	WAKKERMANN/VAN de WEERD	NED	18 points	PI	9/17	AA	4/6	PE	9/14	
15	ROSS/TURNER	GBR	17 points	PI	3/17					
15	SANCHEZ/CARRACEDO	ESP	17 points	VA	2/9	CA	2/7			
15	SURUGUE/PERRET	FRA	17 points	PI	11/17	SA	11/21			
18	LEUPOLD/ENGFER	GER	16 points	PE	2/14					
18	LOSI/LOST	ITA	16 points	LR	2/14					
18	MARET/PICARD	FRA	16 points	QB	1/10	SA	18/21			

Class F2D (combat)

7 competitions were normally considered for the results in combat. Finally 6 competitions were considered (Piennes cancelled). This low number of competitions is due to the fact that there are, at the moment, less open international competitions organised in combat in Europe than in the other control line classes. 58 competitors are placed from 12 different countries.

The most important competition in combat has been Sebnitz in Germany (36 competitors from X countries) followed by Tautenhain in Germany (24 competitors from 5 countries). **Monique Wakkerman (Netherlands) won in F2D** with 33 points for a second, and third places for a total of three competitions. She was challenged be Tchornii Stanislav (Ukrainia) for the second place. There was a two-way tie for the third place. By considering the total number of competitions Kucera Pavel (Czech Republic) was in front. Some juniors are placed; the best of them is NielssonI Nilclas (Sweden), placed 8th with 15 points.

1	WAKKERMANN Monique	NED	33 points	AA	2/12	TA	3/18			
2	TCHORNII Stanislav	UKR	29 points	SE	3/27	VI	4/11			
3	KUCERA Pavel	CZE	28 points	SE	1/27	(TA	1/18)			
3	WAKKERMANN Loet	NED	28 points	AA	1/12	SE	9/12			
5	DISLER Michael	SUI	24 points	SE	2/27	TA	6/18			
6	MAREK Latislav	CZE	21 points	TA	2/18					
7	SCHWARZ Johann	GER	17 points	SE	4/27					
8	DOBERSCH Mathias	GER	15 points	SE	5/27					
8	KONIGSHOFER Rudolf	AUT	15 points	TA	4/18					
8	MONS Francisco	ESP	15 points	VI	1/11					
8	NIELSSON Niklas (junior)	SWE	15 points	AA	5/12	SE	11/27			
8	OLIJVE Rik	NED	15 points	SE	5/27					
8	STAFFEL Gilnter	AUT	15 points	SE	5/27					
8	WALLNER Andreas	GER	15 points	SE	5/27					
15	BRUGUERA Enrique	ESP	13 points	VI	2/11					
15	HENTSCHEL Lothar	GER	13 points	TA	5/18					
17	KNIASEW Witalij	RUS	12 points	SE	9/27					
17	KORUP Allan	DEN	12 points	AA	3/12					
17	MENDOZA Martin	ESP	12 points	VA	1/7	CA	3/3			
20	MAESTRELLI Roberto	ITA	11 points	VI	3/11					

The ladies were there too!

CONTROL LINE IS BACK!

Akro '96 in Switzerland; World cup F2 confirms the revival of controlline stunt flying . -

Emil Ch. Giezendanner

While the US special interest group PAMPA quietly keeps on growing, (having reached 1,700 active flyers,) C/L stunt in Europe has again become popular enough to make more than 28 international annual contests possible. The swiss "Model Flying Club Glarnerland has organised for the seventh time in a row their "Akroq competition in 1996. The "Model Flying Club Glarnerland" displays a perfect example of true sportsmanship. Despite the fact that none of their members flies controline, this group of dedicated people manages to run what has meanwhile become one of the top C/L events in Europe. The stunt community greatly appreciates these efforts.

Claire Beringer with help from mum.

32 F2B serious competition stunt flyers, travelled from as far as the Ukraine to alpine Switzerland. They brought very lightweight and beautifully painted airplanes. It was interesting to observe that the much discussed drive train technologies used nowadays had little influence on the final outcome of the contest. This is good to see because it proves that piloting ability, airplane building precision and system reliability remain the deciding factors to reach success. Perhaps the fact of mastering these difficulties is more important than the amount of money invested. It is one of the reasons for the revival of C/L stunt flying. Winner was Gilbert Beringer from France, flying a 4-cycle drive ultra-light airplane. Followed by Alexander Listopad from the Ukraine, using a dedicated home built high-compression Z-cycle engine and by airplane design artist, Claus Maikis, flying his old faithful Super Tigre .60 engine "Future Force". Tuned (carbon) pipe experts Peter Germann, Walter Weinseisen and Norman Whittle from the USA qualified 5th, 6th and 7th respectively.

At least as satisfying, as watching the professionals, was the fact that there were 13 beginners of all ages who participated in this contest. The winner was David Weinseisen "Son of Father" followed by "independent competitors" Arthur Porat and Claudia Grosskopf from Germany.

We had it all from the weather from fair to rain and storm, giving everybody the opportunity to fight the elements! Thank you, organisers, helpers and supporters ! We look forward to returning to the Glarner Unterland Sport Complex in 1998!

Junior winners Claudia Grosskopf, Arthur Porat and David Weinseisen

Johannes Schmidt, youngest pilot

Alexandra Listopad 2nd, Gilbert Benngen 1st and Claus Maikis 3rd

Preparation time

Those Crazy Young Men with their Racing Machines

A new category in electric powered flight fascinates young people

Emil Ch. Giezendanner

On the occasion of the 1996 world championships in electric powered flight, finals for Electric Pylon Racing Models ~F5F9~ were held for the second time. The spacious Benesov Airfield near Prague, Czech Republic was very well suited for this event.

Electric Pylon Racing is the newest category in electric powered flight (Class F5). The models weigh approximately 1 kg and have a wing span of approximately 1 m. The battery consists of rechargeable nickel-cadmium cells and may not be heavier than 0.425 kg. The race is held on a course in the shape of an isosceles triangle marked with pylons - thus the name Pylon Racing. The triangles sides are 180 m long and its base line 40m. Since the small planes have to circumnavigate this course ten times, they cover more than 4 km in each run. As many as 12 runs are carried out at world championships, which adds up to a total distance of no less than 50 km.

No doubt this is an astonishing performance for such small planes. But whoever observes the high speeds of these electric powered models will be even more astonished: The fastest of these models require 90 sec for 10 rounds - or less. When considering that every model covers more than 400 m per round, due to the flying of base turns, this results in average speeds of 100 km/h. Moving a remote-controlled aircraft through the air for one and a half minutes at a speed this high, with only the energy from a 400 9 battery requires a highly efficient power system consisting of battery, Speedcontrol and propeller as well as a model perfectly constructed with regard to aerodynamics and weighing as little as possible.

Controlling these sensitive small racers calls for an enormous amount of skill and excellent reactions. With three to four models simultaneously on the course during a race and with every centimeter being fought over, the plane may not be left out of sight for even a fraction of a second which requires extreme powers of concentration. Races are always very hectic and there is a fantastic racing atmosphere. Nevertheless, pilots may not let themselves be distracted or lose their nerve and have to keep cool. The model has to be steered over every meter with precision and lots of sensitivity. Those who fly too far around the pylons lose too much time while those who circle too closely run the risk of a "cut". In case of a cut the pilot has to fly an additional round, in case of two cuts he receives 500 points which equals a zero rating for this race.

The average age of participants at the Pylon Racing world championships is very low - approx. 19 to 21! The small models are easily transported, are started manually in a very sporting manner and need only a mowed field for landing. Repairs are

Charging equipment

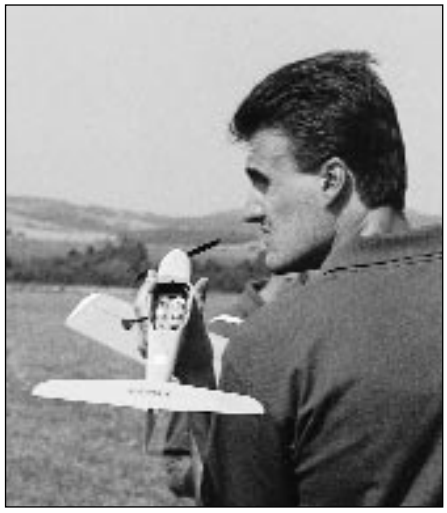
The Successful German Team

frequently required - mostly on plastic parts. Beginners tend to buy assembly kits whereas advanced pilots design their own planes. Models can also be developed and produced successfully in teamwork.

Checking propellor pitch

Preparation

Championship Pylon Racer



'Mostly batteries' in this Italian competitor's model

Starting sequence 1

Starting sequence 2

Tennessee State Soaring Championship

by Brian Smith

Tullahoma, Tennessee

The Tennessee State Soaring Championship is a program conceived by myself, Brian Smith, of Tullahoma, and Bob Sowder of Memphis, Tennessee. The purpose is to entice and encourage sailplane modelers, from Tennessee and surrounding states, to participate in as many sanctioned contests, hosted by Tennessee clubs, as possible. By all accounts, the program is a success, with attendance up over previous years.

Since I was keeping the books, the 1996 rules were kept as simple as possible.

1. Tennessec sanctioned events would only count for point totals, even though the model/winner could be from any state.
2. Points were awarded: 1st = 10 points, 2nd = 9 points, 3rd = 8 points, etc., through 9th = 1 point.
3. Only one event per day could be used for point accumulation. As an example, a flyer places 3rd in 2 meter, 2nd in standard, and 1st in unlimited on September 25. He/she could only claim the 10 points for the first in unlimited for that day.
4. In the event that the pilot experience levels versus airplane classes was used, an individual class had to have at least three entrants for points to be awarded to anyone in that class.

Anyone, in any class, had an equal chance of winning with these rules, and that is exactly what happened. Attendance and consistency did it.

The 1996 winner was Dan Banko of Nashville, Tennessee. He is the son of a sailplaner/airline pilot father, and a supportive/kindergarten teacher mother, so his interest in sailplanes is rather unremarkable.

What is remarkable is that Dan has only been flying sailplanes for about one year, and this was his first, full contest season. He won or placed in every contest entered and, more often than not, had the experts looking over their shoulders with his scores.

His first ship was a 2M Thunder Tiger ARF (a present on his 14th birthday last September) that he flew through June and at the Mid-South Soaring Championships. This was a two channel, rudder/elevator plane; he picked up first place in his class on both days. His scores placed him in the middle and higher, with the expert pack. There were

1996 Tennessee State Champion, Dan Banko

no spoilers either, guys. After the Mid-South, he got a 2M Super V going, and has solidly entered the world of full house ships. He finished the season at Huntsville, Alabama with this plane. He plans on using it next year, as well as a Spectrum and a Monarch CX, that are about ready to come out of the hangar. The trusty Hawk has been given to Ross Godfrey of Huntsville, and he wishes this junior sailplaner success with it.

Dan is pretty modest. He credits his success, especially with full houge ships, to the Dave Brown Flight Simulator. He flies a Jouster or Heat Seeker out of the computer library for one l0 minute flight each day, with the wind kicked up, and the thermal level set on minimum. His dad reports that he soloed the Hawk his first time out, after learning to "fly" on the simulator. Never-the-less, he is a very smooth and deliberate flier.

Dan wanted me to be sure and thank his mom and dad for their support and help. Thanks also to those folks that made him feel like a part of the group, from his very first trip to the field.

So, there you have it. It was especially nice to see a young guy win this, even though we all expect him to whoop us in the coming years. It is gratifying to see other junior fliers emerge from the woodwork; if this program helped, it was more than worth the effort involved.

Brian Smith presents an award to Dan Banko

1996 Tennessee State Champion, Dan Banko in Memphis

World Scale Championship 1996 in Périgueux, France

Narve L. Jensen

The French Aeromodellers union FFAM, and the local modellers club Perigord Air Model' was the hosts of the 14th Scale World Championship and the venue was the regional Airport of Périgueux / Bassilac airport 120 Km east of Bordeaux. The event took place in the third week of July 1996 both weekends included. The competition was for the classes F4B Line Control Scale, F4C Radio Control Scale and on the side an International competition for the Large Scale Model class. Altogether 81 models of world and museum class took part in the event. Every model by itself was a Champion, but as competition goes, only one could be the winner in each class and the fight for first place was tough but fair.

A German Albatross Dva in 1:4,5 scale: A close view of the World Champion's model and the amount of detail on this model.

The weather was very good through-out the week and we had only minor problems with the wind direction in the Radio Control class. The officials and competitors were billeted in different hotels in the nearby city of Périgueux, and the accommodation was very good with breakfast served at the hotels and lunch and dinner by the Perigord Air Model' in one hangar at the field. Our French hosts showed us all why French cooking is world famous and treated us to the French specialities each day from a different region of the country. A really magnificent experience.

3rd place winner Andreas Luthi with his model of a Nieuport L-28-C1 finally made it to the winners podium.

Defending World Champion Vladimir Handlik with his model of the French Caudron G-III from 1913 placed second in this Championship.

The FAI Jury consisted of Pierre Chaussebourgh 1st Vice-president of the CIAM, Tony Aarts Technical Secretary of the CIAM and Narve L. Jensen Chairman of the Scale Subcommittee of the CIAM. The judges were from all over the world, (or nearly so), USA, Canada, England, Romania, Germany, France, Spain, Czech Republic.

Overview of the hangar with the 'Albatross', the World Champion model in front.

The judging of scale events is divided into two different sections, one static, (the accuracy and quality of the building) and the other half being the ability to fly predescribed manoeuvres in the same manner as a full size aeroplane does. Each section counts 50% each towards the total points. Each pilot has three flights to complete in the flying program and the average of the best two flights is added to the static score.

The Scale competition is different from most other model classes in that the competitor has to be the 'builder of the model' himself and every item that has been bought is to be declared on the scoring form, and will be taken into account by the Judges when giving the points on the various items that have to be compared with the drawings of the original aeroplane and the difficulty involved in making the model. The research that has to go into making a World Class model often takes a couple of years or more. Getting all the information and details necessary to construct and document the model before it gets to the Judges could add up to approx. 2000 hours to make and finish a model to the right standard, this is not a class for the impatient modeller. Each and every

The Ukraine monoplane with the pilot starring at you: Even modern aerobatic aircraft are modelled for scale competition, This one a Zlin 526 AFS by Marek Dabrowski from Ukraine placed 31st.

Just part of the entertainment dropping in

model entered in such an event is truly a masterpiece and is considered to be the ultimate in model building.

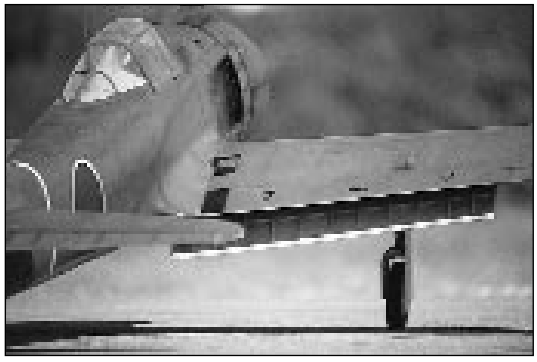
This year was to be the last year with extra bonus parts for the old biplanes and the multi-engined models as the next Sporting Code allows model weights up to 10 Kg without fuel compared with today's 7Kg limit. It is felt that with the higher weight limit it will no longer be necessary to give extra points to the old aeroplanes. The first World Championship using the new rules will be in South-Africa in 1998 and we hope to see a wider variety of models than the recent trend being mostly biplanes.

From the next Championship organiser, South Africa comes this model of the Sopwith Pup, pilot was Humphery Le Grice who placed 14th. The British World War I models was very popular at this championship.

This year's winners were: In F4B Line control, the defending Champion Marian Kazirod from Poland flying his famous Lancaster 4-engine bomber, with Vasiliy Kromin from Australia flying his Antanov AN-14 to second place and the third place went to Valery Kramarenko from Ukraine with another Antanov, the AH-26. In F4C Radio-control the last Championship runner up, Max Merckenschlager from Germany took the top placing, 10 years after his first win in Oslo 1986 with his magnificent Albatross. The winner in the Netherlands, Vladimir Hanlik, came close to winning again, but had to settle for second place this time, with his well known Caudron G3 which had won him both the World and European title earlier and it was retired after the Championship. He used the tail surface of the model to gather the autographs of all competitors and officials at the Championship and has placed it among his trophies at home. Third place this time went to the Swiss Andreas Luthi, who for several of the earlier Championships has been amongst the best, but not on the podium. Pavel Fencel of the Czech Republic took the top honours in static with his fabulous Knoller C-II, but was beaten in the flight part and ended up as number five, just behind the old master Mick Reeves of England who came fourth with his Sopwith 1½ Strutter.

This is the model that won the static part of the competition, an almost exact replica of the original aircraft. It is a model of the Czech biplane Knoller C-II and was flown by Pavel Fencl to 5th place overall.

The Team Championship in F4B ended with Poland taking the top honour followed by Ukraine in second place and third place by the USA. In F4C the Team honours went to the Czech Republic and the British team taking second place with Italy following in third. The international Large Scale Class was totally dominated by the British teams (2) as team number one took the three first places individually and naturally also the first place in team.



All the way from Japan came this model of the Kawasaki KI-100 fighter, This model is fitted with a radial engine instead of the usual inline engine in the 'Tony' fighter and it was flown by the Japanese Ando Yoshitaka to 15th place.

Trying to describe in writing one of the top models is very hard, but I will try to give you a little insight into the work behind a winning model. That is the model of the German Max Merchenschalger, the World Champion. He spent more than three years investigating and collecting information on the original. This model is based on the restored Albatross at the Smithsonian museum in Washington DC and this again is based on the Australian 'Canberra' Albatross that was restored 'down under' and is the most complete original example of an Albatross. Max had several paint schemes to choose from as the 'Canberra' had had four different schemes, Max had chosen to use the scheme that the original had when it left the factory. During the construction of the model he used every possible information source available and this together with a very good collection of detailed pictures gave a good foundation for a near perfect model and the necessary documentation needed to present the model for scale judging.

Close-up of the engine department of the Sopwith Pup of Humphery Le Grice of South Africa.

There we have the requirements; 2-3 years of research and around 2000 hours of construction, further you need a couple of years or more flying practise to learn to know the model, and you could be in the winners circle.

The prize-giving ceremony held in front of the depot hangar and after the prizes were given to the winners, all officials got a souvenir basket with food from the region; much appreciated! The closing banquet took place in the dinner hangar with folk dancing and local entertainment. The chefs really outdid themselves this time with a seven course meal and all the wine you could ask for. In addition all competitors and officials got one book each from the French publisher of the 'Chronicle of Aviation', you could choose between the English and French version - a very much appreciated gift.

Then it was time to say goodbye and I think everybody left France with sweet memories and a wish to some day return to this friendly part of the world.

PROJECT OF THE SPEED MODEL "BARCELONA 96" WORLDWIDE CHAMPIONSHIP OF R.F. at NORRKOPTING - SWEDEN

by Luis Parramon Sarrate

INTRODUCTION

We were number one at the European championship of speed in Genk, Belgium in 1981 with a speed of 270 km/h. which finished a period of teamwork with Giró, Gaya, Pacheco, González, Roger and myself, in which the technology of the moment had been developed. We worked with vertical-engine models with Rossi engines, taken from the shop and fed by a centrifugal valve and crankcase pressure.

There were important changes in the following years. Models with horizontal engines, wing spans from 1 to 1.2 metres, reguflo fuel tanks and more and more sophisticated engines; some impossible to obtain, (examples were Moki from Hungary, Kojanluk, Cyclon, Shelkalin, Zalp engines from Russia). Engines like Deizon were left to become obsolete.

In 1992, with Perestroika, policies changed and Russia started to do business by mass-producing engines and selling them directly to the west. In those days, F2D and F2A appeared in the Ukraine. It was a good base for thermodynamic development.

I was tuning Rossi Mk3 engines until 1990. I broke the Spanish record again in 1991 with 281 km/h, at the national championships in Lleida. I used a Russian Cyclon in 1992 and again I broke the record with 291 km/h at the national championship in Barcelona in 1993.

In 1993 the rules changed and the maximum wing span allowed was 1m.

In the same year I also bought a Profi engine, and once it was tuned I broke the record again with 299 km/h. at the world-wide championship held in Shanghai in 1994.

The challenge was then to get over 300 km/h. So we began the project Barcelona '96! Once more Lluis Roger, Jaume Porta, Jordi Font and above all Eduard Giro, who brought his knowledge and information, contributed to the development of the engine. The information found in books like "Two Stroke Performance Tuning" by Graham Bell, "Motorcycles, Tuning Two Stroke Engines" by John Robinson, and especially "Design and Simulation of Two Stroke Engines" by Gordon Blair, with their respective computing programs for designing and thermodynamic simulation, also contributed to the breaking of the world-wide record with 311.2 km/h. speed in 1996.

Working with computer drawing programs like Autocad, with which my son Lluis drew the model, was also a great help in developing engine "Barcelona 96". Other programs used were Propeller Design and also Model Design in C.L. and Cable lead out position by Lluis Roger.

During the development process, speed model studies were carried out in a wind tunnel at the Barcelona Engineering School by Salvador Gonzalez, and also tests at a test bench with electronic brakes by G.P. Development. On this bench, a dyno bench, power and torque versus rpm can be obtained as well as head and exhaust temperatures, exhaust, head and (crankcase) pressures by tranducers. Additionally material analysis and surface treatment analysis were carried out.

THE MODEL

When I was selected for the world championship in Sweden, it encouraged me to develop the project producing the winning model "Barcelona '96", a model which was designed from experience, knowledge and the latest technology. It is light and compact. lt cannot be affected by vibrations, like carbon fiber models and resin. It is made from extruded foam of polymethacrylate. the commercial name is Rohacell. The stabilizer

density is of 35kg/m3. and the tailboom and the cover of 50 kg/m3.

The shape is the most aerodynamic, according to tunnel results. The wing has a symmetrical profile with a forward cable leadout. It gives shade and its resistance is less than the computer program prediction. This program calculates the individual cable resistance separately. The model's total weight is 420 gr., bearing in mind that the engine and pipe weight is 205 gr.

It was finished in April 1996; was tuned and took part at the Barcelona Spring Cup, breaking a new record: 302 km/h.

This model centered at 5% of the average chord of the wing, makes it very easy to work with and fly. It is self stable and it is not affected by cross-wind.

THE ENGINE

The Profi engine speed is a very good working basis. Its system of Monolit Crankshaft puts the inner ring of the back ball-bearing in the mechanics of the crankshaft; it is very solid. The Crankcase has a steel ring in order to fix the back ball-bearing outer ring, letting-up and taking to pieces without wear and holding it well when stretching. It is bronze sleeved, chromium-plated with

berylium and has a mirror finish which goes together with an A1 piston, casted with 24% of silicon and fine grain; something that makes it very stable when stretching or changing temperatures.

I have slightly improved the thermodynamics, by adjusting it to our needs in the area of 38,000 rpm. The crankshaft admission timing has been increased up to 230°, and the inner diameter up to 9 mm., the venturi was increased up to 9.5 mm. without causing probems. The exhaust timing area was tunned to reach a 20% power increment from 1.3 to 1.6 C.V., together with an rpm increment from 35,000 to 38,000 rpm. The three-exhaust port transfer was improved by only changing its section in the case, improving the Reynolds number in the transfer port. The head was newly designed taking a hemispherical shape instead of the trumpet shape; something that made the gas flow better.

The pipe was checked using the Blair simulation program, which gives perfect measures of length and diameter for engine room and timing.

Getting the fitting of the crankshaft with the monolit system to be perfect, by the achievement of all the ideal sets for every unit, crankshaft, balls, outerballs was differcult. The 0.05 front ball-bearing axial clearance let us reach the mentioned performance with a homologated mixture of 20% of caster oil and 80% of methanol.

THE PROPELLER

The propeller is a monoblade covered by carbon fibre and resin. It is extremely stiff. It came from the Ukraine. I changed it a little bit according to the simulations of the computing program made by Lluis Roger. It is an extremely good programme. (Its going up progressively is identified with the propeller's theory). The 74.2 mm radius and 6.4 inches pitch leads to an acceptable actual efficiency of 80%, in spite of reaching 1065 km/h at the blade tip.

The monoblade system increases the performance because it does not disturb the whirlwind caused by a second blade, and out of the zone of maximum performance (500-600 Km/h.) compensates at the tip. The 7% blade thickness of 7% at the foge has two profiles: standard up to 50% and supersonic (diamond type) up to the foge, that is to say, 9 to 7% thickness, profile with a concave shape with a thickness of 60% and sharpe edges and plant type, cimatar sword or arrow, with the maximum blade width of 50% of length. It is finished with epoxy paint and smoothed.

THE WORLDWIDE CHAMPIONSHIP

The quality of the project and the effort came together at the World Championships. They were held in the Swedish town of Norrkoping from July, 22nd to the 29th. It took place on an old air base, using runways from which circles were drawn as aeromodeling tracks.

I took the model with me, in sections, therefore, when we arrived I had to assemble it. The usual and strict scrutiny for the model was passed without any problem. There is a very strict process of testing at the championships. My goal was to improve the 302 km/h that I had achieved in Spain.

Weather conditions are very important for engine carburation. Luckily the weather was good. The best conditions are: temperatures from l0°C, pressure of 1016 Mb and humidity from 45 to 50%.

I carried out the first flight out of three regulated ones, at about 12 noon. It was perfect. An unofficial timing gave a 309 km/h. speed. It seemed a good start, but then a disppointment arrived when the jury cancelled it because they counted only nine laps. Watching a video carefully recorded by a spectator, clearly showed that the jury started to record much later than the three regulated laps in order to start to record ten laps. As several participants faced the same problem, there were many complaints at the briefing of team managers which took place in the evening. The organization wrote it down and they gave a solution for the following flights. Note: This affected several fliers the first day and I had to correct it onsite the next morning.

My second flight took place the next day at about 10 a.m. in the morning. It was good and the official speed was 304 km/h. which placed me in first place; however, it was not the best one of the day because the Russian Kostin was better, with a speed of 305 km/h.

The third flight remained. The strategy to follow was clear, as the engine was working better than ever, I decided to give the propeller more pitch and open the needle a little bit. I started the engine with team help and located the central point. The take off was very smooth. The engine ran well for two laps. After this, I put my hand on the pylon, and I didn't take my hand off it until I heard the signal from the jury. Total expectation. Through the loudspeakers, the official time was given: 311.2 km/h., speed which placed me first in the ranking and a new world record was established.

The next thing was scrutineering of the model and the engine by the jury. Everything was in order, myself and the team were very happy and celebrated the event: In the afternoon, it was the medal ceremony. The president of the Swedish Aeromodeling Federation, Mr. Sunsdtrom gave me the Gold Medal as the World Champion and the first of the ranking, leaving the Russians Kostin and Fedotor as the second and third.

At the closing dinner and distribution of presents, Mr. Laird Jackson, president of the FAI Jury gave me the Champions Diploma, the World Champion Trophy and the Cup for the World Champion. I was very happy. I had fulfilled my goal.

I have to mention and give thanks to friends, collegues and the federation who have contributed directly or indirectly with work, ideas and courage for the achievement of this world championship.

(engine photos courtesey of RCModel Magazine.)

INITIAL DEVELOPMENT PLAN IN CYPRUS

Lakis Prastitis, Cyprus Airsports Federation (CYP), Aeromodelling Vice President

The Cyprus Airsports Federation, recognizing the importance of young children entering aerosports and using Aero-modelling as a gateway, has developed a well organized plan for the initial introduction of youngsters into aeromodelling .

This Initial Development Plan as it is called (SHEDIO ARHIKIS ANAPTIKSIS) was borrowed from the Cyprus Sports Organisation, which is the highest sports authority in Cyprus and use a similar plan in almost all its sports activities.

The plan basically includes what we all do in our local club, but in a better more organized way. It includes the basic theory of flight, basic building techniques, aeromodelling camps, visits to Airsport centers, airports, and finally Aeromodelling Demonstrations.

Great importance is given to the initial presentation of aeromodelling in Primary schools. Two 45 minute periods are used, where the first 15 minutes is spent in basic theory of flight and generally explaining to children (of age 5-12) the main components of an airplane and how in very simple words it flies. The rest of the time is spent in building a basic hand launch glider. After building is completed all the youngsters go to the school yard and fly their gliders. This of course is the best part. The excitement of the children is usually unbelievable.

Once the first presentation is done children participate in aeromodelling camps which are usually done during the Summer holidays. At these our dedicated instructors, have the luxury of time and are able to choose young talents and promote them more into the sport.

National Champion in novice aerobatics Nicolas Georgiades

We have been using this plan for the past three years and in 1996 we had our first success. The National Champion in the radio controlled aerobatics in Novice category was an eleven year boy competing with competitors of 30-35 years of age. It is worth mentioning that this boy lost his model the day before the competition, due to interference. He worked all night with his father, fixed the model, competed the next day and won.

The above example is the kind of an airsport athlete that we are aiming for. An athlete who is competing in good spirit with all remaining resources to the last minute .

Children from Pernera Primary School during initial aeromodelling presentations.

Same children in the school playground flying their gliders

another promising young flier Chris Bouras

INTERNATIONAL AEROMODELLING SPORTING CALENDAR 1997

(Approved by the CIAM Bureau Meeting on 5/6 December 1996)

WORLD CHAMPIONSHIPS

11-16 August — **Sumperk, CZECH REPUBLIC** — **WORLD AEROMODELLING CHAMPIONSHIP FOR R/C F3D**

(MUDr. Adolf Klein, Pod Senovaznou 44a, 787 01 Sumperk, Czech Republic, Tel.& Fax. + 42 - 649 - 216468)

18-24 August — **Sazena, CZECH REPUBLIC** — **WORLD AEROMODELLING CHAMPIONSHIP FOR FREE FLIGHT, F1A, F1B, F1C (SENIORS)**

(Jiri Kalina, Tasovska 365, 155 00 Praha 5, Czech Republic, Tel. + 42 - 2 -3016537)

29 August - 6 September — **Deblin, POLAND** — **WORLD AEROMODELLING CHAMPIONSHIP FOR R/C F3A**

(Dorota Wlodarczyk, Aeroklub Polski, Krakowskie Przedmiescie 55, 00-071 Warszawa, Poland, Tel. & Fax. + 48 - 22 - 266-333)

7-14 September — **Golbasi-Ankara, TURKEY** — **WORLD AEROMODELLING CHAMPIONSHIP FOR R/C F3C (1st World Air Games)**

(Secretary General Mehmet Tiritoglu, Turkish Aeronautical Association,
Ataturk Bulvari N33 Opera, 06100 Ankara, Turkey, Tel. + 90 - 312 - 310 44 56, Fax. + 90 - 312 - 3104690 or 3100413)

9-14 September — **Rana near Louny, CZECH REPUBLIC** — **WORLD AEROMODELLING CHAMPIONSHIP FOR FREE FLIGHT, F1E (SENIORS & JUNIORS)**

(Ing. Ivan Horejsi, Nad Prehradou 15, 321 02 Plzen, Czech Republic, Tel. & Fax. + 42 - 19 - 530023)

14-21 September — **Golbasi-Ankara, TURKEY** — **WORLD AEROMODELLING CHAMPIONSHIP FOR R/C F3B (1st World Air Games)**

(Secretary General Mehmet Tiritoglu, Turkish Aeronautical Association,
Ataturk Bulvari N33 Opera, 06100 Ankara, Turkey, Tel. + 90 - 312 - 310 44 56, Fax. + 90 - 312 - 3104690 or 3100413)

CONTINENTAL CHAMPIONSHIPS

13-19 July — **Valladolid, SPAIN** — **EUROPEAN AEROMODELLING CHAMPIONSHIP FOR C/L F2A, F2B, F2C, F2D**

(Antonio Rojas Ramos, Guadalete, N2, Bajo, 47005 Valladolid, Spain,
Tel. +34 - 83 - 291541, Fax. + 34 - 83 - 308719 Email: aerosafa@vasertel.es - Web: www.vasertel.es/~aerosafa/)

19-26 July — **Poprad, SLOVAKIA** — **EUROPEAN AEROMODELLING CHAMPIONSHIP FOR R/C F3J (SENIORS & JUNIORS)**

(Miroslav Sulc, Na Letisko 2093, 058 01 Poprad, Slovakia)

19-26 July — **Suceava, ROMANIA** — **EUROPEAN AEROMODELLING CHAMPIONSHIP FOR SCALE MODELS, F4B, F4C**

(Mihail Zanciu, Federatia Romana de Modelism, Str. Vasile Conta N16,
Sector 2, 70139 Bucharest, Romania, Tel. + 40 - 1 - 211 01 60, Fax. + 40 - 1 - 210 01 61)

7-14 September — **Golbasi-Ankara, TURKEY** — **EUROPEAN AEROMODELLING CHAMPIONSHIP FOR FREE FLIGHT FOR JUNIORS, F1A, F1B, F1C.(1st World Air Games)**

(Secretary General Mehmet Tiritoglu, Turkish Aeronautical Association,
Ataturk Bulvari N33 Opera, 06100 Ankara, Turkey, Tel. + 90 - 312 - 310 44 56, Fax. + 90 - 312 - 3104690 or 3100413)

14-21 September — **Golbasi-Ankara, TURKEY** — **EUROPEAN AEROMODELLING CHAMPIONSHIP FOR SPACE MODELS (SENIORS), S1B, S3A, S4B, S5B, S6A, S7, S8E (1st World Air Games)**

(Secretary General Mehmet Tiritoglu, Turkish Aeronautical Association,
Ataturk Bulvari N33 Opera, 06100 Ankara, Turkey, Tel. + 90 - 312 - 310 44 56, Fax. + 90 - 312 - 3104690 or 3100413)

30 September - 5 October — **Slanic Prahova, ROMANIA** — **EUROPEAN AEROMODELLING CHAMPIONSHIP FOR INDOOR MODELS, F1D**

(Mihail Zancia, Federatia Romana de Modelism, Str. Vasile Conta N2, Sector 2,
70139 Bucharest, Romania, Tel. + 40 - 1 - 211 01 60, Fax. + 40 - 1 - 210 01 61)

1st WORLD AIR GAMES - TURKEY 1997

THE 1ST WORLD AIR GAMES are one of the greatest events the FAI is going to produce. The Turkish Aeronautical Association was entrusted to organize the Games in Turkey between the dates of 13-21 September 1997.

The World Air Games will be a first in the history of Aviation as well as in the history of the world. There will be 17 different Championships in various aviation categories, such as Aeromodelling & Spacemodelling, Ballooning, Hang-gliding, Paragliding, Aerobatics, Helicopters, Microlights, Formation Skydiving, Skysurfing, Style and Accuracy Landing, Gliding, Air Rally FIying and Long Range Air Rally Flying. All these events will be run simultaneously at eight different venues in Turkey.

Last year the Turkish Aeronautical Association held the 1st World Air Games Test Competitions. The test competitions for the Aeromodelling and Spacemodelling Championships were held at the Ankara Golbasi flying venue. The competitions were organized in the same categories that will be run at the WAG in 1997, which are FF FlA-B-C (Senior,Junior), F3C, F3B and SM SlB-S3A-S4B-SSC-S6A-S7-S8E.

The Golbasi flying venue at Ankara is very suitable with regard to surface and meteorology and is about 35 km away from Ankara where the accommodation facilities are established. 98 competitors from seven countries (Israel, Kazakhstan, Ukraine, Poland, Germany, Russia and Turkey) participated in the test competitions. Participation at the WAG in 1997 is estimated to be 4 times larger.

The 1st World Air Games Aeromodelling and Spacemodelling Championships '97 will be run in 4 different categories:

World Cup	F l A-B-C (Seniors)
Open European Championships	F l A-B-J (Juniors)
World Championships	F3B
World Championships	F3C
Open European Charmpionships	SM (SIB-S3A-S4B-S5B-S6A-S7-S8E)

Between the dates of 7 - 13 September '97 the F/F and F3C Championships and between the dates of 14 - 21 September '97 the F3B and SM Championships will be conducted.

Due to a decision taken by the organizers of the Championships there will be both an individual and team classification in the F/F World Cup. In the Open European Championships there will be two different classifications; a general classification and a classification that applies only for competitors from Europe.

Apart from having the honour to participate is an event that is to be the first in aviation history, the competitors will also have the chance to enjoy the historical and natural beauties of Turkey.

As the organizers, our greatest ambition is to make a success out of the 1st World Air Games Aeromodelling and Spacemodelling Championships.

* For further information about the 1st WAG '97 Aeromodelling and Spacemodelling Championships you can contact the Turkish Aeronautical Association.

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