

The Journal of **FAI Space Modelling**
The British Space Modelling Association

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The moment we've been waiting for!

The interspace..

*Book of Space
Travels*

...is now available. Details were provided in the last issue. Packed with personalities, places, history, World Cups, Major Champs, stories, and brilliant photographs. Well done, Traplet Publications. Prices shown below..

Price

UK £12 + £2 postage

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Editorial 2012...what a season! ...but in some ways, the end of an era too. From 2013 onwards, a new suite of Space Modelling contest rules go live. This issue features the final World Cups of the season; World Cup final standings; lots more from Jason Wentworth and naturally, interspace.. *Space Modeller of the Year!* ..And trust me, the recipient this time is awesome!

Libya...a novel nation has entered the international Space modelling scene! An amazing character called Rafa Husni contacted me in the summer wanting to know about FAI Space Modelling...actually model rockets generally, even coming to the UK to develop his knowledge. At this stage it got harder, Rafa wanted to enter the World Space Modelling Championships, in Slovakia, during August. He was unable to obtain a visa to travel and things were put on hold until...Ljubljana came to the rescue! Rafa and his charming wife Sultana came to the 34th Ljubljana Cup and had a great time; full report in these pages. Not without problems...Libya is not a member of FAI and so special arrangements needed to be put in place. It is to be hoped that Rafa will continue to develop Space Modelling in his own country and on the North African coast generally.

Time for everyone to reflect on the good things Space Modelling has achieved in the last few years. Despite global recession, Space Modelling, far from shrinking, we seem to be stronger now than at any other time in its history. Good decision making by the powers that be is essential to ensure this trend continues.

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2013's provisional Space Models' calendar is included, resembling this year's closely. Naturally, be sure to check out the FAI website before committing to any travels. Off we go..

Succulent Sava Space Modelling... *2nd Fenix Cup ~ 22-23 September '12, Vincovci- CRO*

by the Editor

FOLLOWING UP on the fantastic success of 2011's inaugural World Cup in Croatia, round two went live at Aerodrom Sopot in super conditions. Contest Director, Darko Krajinovic, plus the team from *Aero klub 'Fenix'* at nearby Ceric, laid down the canvas for another masterpiece. Croatia, Slovenia, Serbia, Macedonia, Bulgaria, Russia, Germany and Romania provided the composition and colour in this splendid World Cup. Results..

S4A-Boost Glider World Cup

Serbia has enjoyed an amazing season in Space Modelling up to now, capping this off with an awesome 17 medals at the recent World Space Modelling Champs, in Slovakia. The line up was strong in this event, combining the key features of Aero and Space Modelling, Zoran Atanasoski (MKD), Marjan Jenko (SLO), Tomislav Cvitic & Romano Suti (both CRO) looking to impress. But Serbia once more laid down the marker, filling the top-4 spots in an opening event that featured good flying throughout. Well Done, Vlada 'Cirpy' Cipicic.

1 Vladimir CIPCIC	SRB	180	165	160	= 505s
2 Zivan JOSIPOVIC	SRB	180	171	149	= 500s
3 Zoran KATANIC	SRB	180	180	137	= 497s

S6A-Streamer Duration World Cup

Always the biggest field, S6A-Streamer Duration is always the most fiercely contested and the startlist at Fenix was intimidating. Bransislav Krcecinac, Niklola Borovac & Zoran Katanic (all SRB); Gligorco Cejkov & Boris Atanasoski (both MKD), plus Daniel Dietrich & Jonas Buechl (both GER) were good to go at the start. But a subtly changing weathergauge proved a game changer halfway through the event. Once more we saw Serbia come good, with junior, Miodrag Cipicic scoring Gold, hotly pursued by Zoran Katanic; Jonas Buechl doing splendidly for Bronze.

1 Miodrag CIPCIC	SRB	180	180	180	= 540s
2 Zoran KATANIC	SRB	180	180	126	= 486s
3 Jonas BUECHL	GER	180	180	118	= 478s

S9A-Gyrocopter Duration World Cup

Bit of a roller coaster this one! The scoring went from the sublime to the ridiculous and illustrated some conceptual errors still present in this class. Notwithstanding that, there were some super performances from Germany's Jonas Buechl and Danni Dietrich. But Zeros – far too many Zeros – devalue this otherwise super class.

1 Jonas BUECHL	GER	180	109	135	= 424s
2 Josip ZUPANIC	CRO	180	0	96	= 360s
3 Daniel DIETRICH	GER	132	117	96	= 345s

S7-Scale World Cup

Judges, Nikola Cvjeticanic (SRB), locals, Damir Kuterovac, Josip Matic and Stuart Lodge (GBR) found this class a challenge – a lot of diversity in the hall. Big players, Miroslav Stancevic & Zika Josipovic with super *Saturn 1Bs*, plus Vladimir Cipicic (all SRB) with an *Ariane 1* looked to dominate from the off. No less than four *Nike Tomahawk 12* prototypes were on show, one by debutant in S7-Scale, Romano Suti (CRO), plus a couple of *Nike Apaches* by Tomislav Marjanovic and Zvonimir Plisic (both CRO). The most original model on show was a novel *Sako 4-1* hail-dispersing bid by Tomislav Cvitic (CRO)...the model about a foot tall; full-size about a foot and a half – 1:1.55 scale! The static scoring favoured the Serb big players, but that 'level playing field' – the Flying Field.. – had other ideas. Once more reliability proved the key to the silverware, Junior World

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Champion Miodrag Cipicic (SRB) nailing a magic flight for the Gold, with team mate Nikola Borovac, in Silver. Big plaudits to local, Romano Suti, getting on the podium in his first attempt at S7-Scale! Like last year though, just too many DQs in the flights.

1 Miodrag CIPICIC	SRB	<i>Bumper WAC-87</i> 680 + 121 = 801pt
2 Nikola BOROVAC	SRB	<i>Nike Tomahawk 12</i> 577 + 135 = 710pt
3 Romano SUTI	CRO	<i>Nike Tomahawk 12</i> 577 + 93 = 670pt

S8E/P-RC Rocket Glider Spot L'g World Cup

Good class, with a startlist from across Europe, Gligorco Cejkov (MKD); Angel Todorov & Nikolay Peychev (BUL); Bojan Kranjic, Romano Suti & Martin Dodlek (all CRO); Blaz Grgic, Bojan Kranjec & Mitja Zgajner (both SLO). Perfect flying conditions meant a really excellent standard of flying, with the target tapes getting nailed regularly; Romano Suti's lack of recent experience showed through with two erratic boosts however! The final five through to the flyoff round were Angel Todorov, Grigoriy Sergienko (RUS), Blaz Grgic & Mitja Zgajner and Bojan Kranjec, with the final scores fractions of a percentage point different...just MAGIC! Well done once more to Mitja Zgajner, the best S8E/P-RC Rocket Glider jockey on the planet.

1 Mitja ZGAJNER	SLO	1000 1000 984 + 984 = 3968pt
2 Blaz GRGIC	SLO	989 984 1000 + 986 = 3959pt
3 Grigoriy SERGIENKO	RUS	969 1000 986 + 1000 = 3955pt

S3½A-Parachute Duration

Funny, it's sometimes good to try something different and the Fenix Cup organizers did just that, halving the propellant Specific Impulse to 1.25Ns. But boy, was the scoring still good in the cooling late afternoon air! Maric Forlan, Branko Gelencer, Josip Zupanic & Kristijan Poc looked good for the hosts; Danni Dietrich & Jonas Buechl (both GER) always a threat and Djordje Petrovic (SRB), plus a fleet of others sure to impress in a contest where all

competitors recorded three flight scores – almost unique in S3-Parachute! The podium was truly close and with no time for a flyoff, the Gold was shared and *Well Done* to junior Ziga Puskic (SLO) getting a medal at this first attempt.

1= Janko RUPNIK	SLO	122 300 300 = 722s
2= Josip ZUPANIC	CRO	300 219 203 = 722s
3 Ziga PUSKIC	SLO	178 300 242 = 720s

Sava Sunset.. The Fenix event also hosted the 2012 Croatian National Championships, which featured young people and both sexes, ensuring a future for the activity in this region. A number of locals went home with some serious 'heavy metal'...not all provided by organiser and rock guitarist, Darko Krajinovic! Super, and time to remind ourselves that the river Sava now features no less than FOUR World Cups... *Belgrade*; *Sirmium* – Sremska Mitrovica (both Serbia), plus *Fenix* – Vincovci (Croatia) and the legendary *Ljubljana* (Slovenia). This Balkan corridor is what Space Modelling is all about.

Well done to Darko Krajinovic, Maja & Anita Juric and the rest of the amazing team at Aero klub 'Ceric'. This just proves how enthusiasm and commitment can make up for lack of experience. The FAI Jury of Jozse Cuden (SLO), Slobodan Maksic (SRB) and Egon Engelsberger (CRO) had little to do except enjoy the action, with RSOs Marjan Cuden and Zvonimir Plisic getting all the DQ calls right. S7-Scale Judges, Nikola Cvjeticanin, Damir Kuterovac, Josip Matic and Stuart Lodge, had a challenging time in the hall scrutinising a wide spectrum of prototypes. Accommodation was very pleasant at Hostel 'Kristal', with all of us well fed and watered there and also at the Aero klub throughout the

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event. Thanks are due to sponsors, the Karlovacko brewery, who were very generous with the 'water'.. Awesome.

Kosmodrome corker...

*Baikonur Cup ~ 18-21
September '12, from the
Kosmodrome-RUS/KAZ*

KOSMODROME...the very word that conjures so many memories, so much happened here that made the 'Space Race' so amazing. Yet another World Cup and time to congratulate Evgeniy Proshalignin and his team from the international Space School for an amazing event. Podiums..

S4A-Boost Glider World Cup (14 starters)

- | | | | | |
|------------------------|-----|-----|-----|------------|
| 1 Igor IBRAGIMOV | UZB | 168 | 174 | 110 = 522s |
| 2 Gennady POLTAVETS | RUS | 96 | 180 | 180 = 456s |
| 3 Shamsiddinjon DUSIEV | UZB | 131 | 180 | 98 = 408s |

S6A-Streamer Duration World Cup (20 starters)

- | | | | | |
|----------------------|-----|-----|-----|------------|
| 1 Vladimir MENSNIKOV | RUS | 125 | 154 | 83 = 362s |
| 2 Vladimir MINKEVICH | RUS | 124 | 93 | 140 = 357s |
| 3 Aliaksandr LIPAI | BLR | 102 | 77 | 166 = 345s |

S9A-Gyrocopter D'tion World Cup (19 starters)

- | | | | | |
|-------------------|-----|-----|-----|------------|
| 1 Igor IBRAGIMOV | UZB | 180 | 180 | 180 = 540s |
| 2 Sergey SHYLYK | UZB | 180 | 127 | 180 = 487s |
| 3 Olga IBRAGIMOVA | UZB | 128 | 84 | 180 = 392s |

S7-Scale World Cup (23 starters)

- | | | | | |
|-----------------------|-----|-------------------------|--|--|
| 1 Stepan IVCHENKO | UKR | <i>Trailblazer-11F</i> | | |
| | | 661 + 150 = 811pts | | |
| 2 Sergey TRUSH | UKR | <i>Trailblazer HD70</i> | | |
| | | 663 + 140 = 803pts | | |
| 3 Oleksandr ZAGORODNY | UKR | <i>Black Brant VIII</i> | | |
| | | 600 + 101 = 701pts | | |

S8E/P-RC Rocket Glider World Cup (8 starters)

- | | | | | |
|-------------------|-----|------|-----|----------------------|
| 1 Juri FILICHOV | KAZ | | | |
| | | 1000 | 824 | 870 + 1000 = 3545pts |
| 2 Alexei KORIAPIN | RUS | | | |

914 870 1000 + 6920 = 3476pts

3 Eduard YURK

KAZ

922 790 786 + 717 = 3215pts

Well done too, the FAI jury of Alexey Oxenenko (KAZ), Oleksandr Progerebniak (UKR), Alexei Koriapin and Vladimir Minakov (both RUS), who had little to do in a well-run event. S7-Scale Judges, Vladimir Minakov, Olga Ibragimova and Azim Domlatjanov presided over a small but impressive array in the hall. Well done too RSOs Oleksandr Zagorodny (UKR) and Vladimir Minkevich (BLR). Nice one.

**Korkyt Ata Cup... *Hot on the heels of Baikonur ~ 25-28
September '12, another from the Kosmodrome-RUS/KAZ***

KOSMODROME...Part 2! Much the same organisation team and a similar competitors' startlist, but a discrete event, with plenty going on. Some really good scoring too, across the spectrum of classes.

S4A-Boost Glider World Cup (11 starters)

- | | | | | |
|------------------------|-----|-----|-----|------------|
| 1 Aliaksandr LIPAI | BLR | 166 | 180 | 180 = 626s |
| 2 Shamsiddinjon DUSIEV | UZB | 180 | 154 | 180 = 514s |
| 3 Olga IBRAGIMOVA | UZB | 135 | 133 | 114 = 382s |

S6A-Streamer Duration World Cup (20 starters)

- | | | | | |
|------------------------|-----|-----|-----|------------|
| 1 Sergey SHYLYK | UKR | 180 | 103 | 109 = 392s |
| 2 Shamsiddinjon DUSIEV | RUS | 79 | 180 | 110 = 369s |
| 3 Stepan IVCHENKO | UKR | 180 | 70 | 114 = 364s |

S9A-Gyrocopter D'tion World Cup (15 starters)

- | | | | | |
|--------------------|-----|-----|-----|------------|
| 1 Valeriy GAVRILOV | UZB | 143 | 180 | 180 = 503s |
| 2 Mukhidden DUSIEV | UZB | 164 | 133 | 180 = 477s |
| 3 Sergey TRUSH | UKR | 135 | 96 | 180 = 411s |

S7-Scale World Cup (5 starters)

- | | | | | |
|-------------------|-----|-------------------------|--|--|
| 1 Stepan IVCHENKO | UKR | <i>Trailblazer-11F</i> | | |
| | | 661 + 154 = 815pts | | |
| 2 Sergey SHYLYK | UKR | <i>Trailblazer HD70</i> | | |

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		649 + 154 = 803pts
3 Oleksandr ZAGORODNY	UKR	<i>Black Brant VIII</i>
		600 + 115 = 715pts
S8E/P-RC Rocket Glider World Cup (7 starters)		
1 Andrey SHREDROV	UKR	
		1000 934 906 + 657 = 3497pts
2 Alexei KORIAPIN	RUS	
		909 1000 782 + 754 = 3436pts
3 Eduard YURK	KAZ	
		519 961 1000 + 698 = 3178pts

The *Almaty Aeromodel Club, Agency of Tourism and Sports* and the *Association of Light Aircraft of the Republic of Kazakhstan* came up with a World Cup to remember. CD Evgeny Proshalignin must be pretty pleased with the outcome. The FAI Jury mimicked the Baikonur Cup and had little to do, other than sign off the scores; similarly, the S7-Scale judges. Super.

34th Ljubljana Cup... *the First and the Last ~ 5-7 October '12* *by the Editor*

BULGARIA, Croatia, Czech Republic, Libya, Macedonia, Poland, Romania, Russia, Serbia, Slovenia, Slovakia, Switzerland, Turkey and United Kingdom...14 nations! *ARK Komarov* hosted the very first Ljubljana Cup, thirty four years ago and this is where Space Modelling's World Cup finishes every year, Ljubljana is always the World Cup Finale. Most notable in the list above is Libya, Rafa Husni needing special arrangements to participate, as his country is not a member of FAI. Contest Director Tone Sijanec was licking his lips at the start. Record number of nations, this was going to be Magic!

S3A-Parachute Duration

First up on Friday afternoon, flat calm conditions and sunny, the scene was set for the overture. Marian Gres, Josef Barcek & Michal Zitnan (all SVK); Zdenek Kolar, Pavel Brony & Viktorka Trzylova (all CZE); Krzysztof Przybytek, Antoni Biernacki & Ewa Dudziak-Przybytek (all POL), plus a melee of locals, looked to test the timekeepers. Big numbers were essential to get a sniff of the podium, with minor errors very costly. Libya's Rafa Husni paid dearly for a round 2 zero, which just might have cost a podium...20th still a good show in his first ever Space Models contest. The flyoff round crystallized fairly early on, with Ewa Dudziak-Przybytek and outstanding Slovene Junior, Ziga Puksic, going head-to-head. Ziga suffered a 'chute malfunction, whilst Ewa boosted a beauty...and a great Golden Dragon!

1 Ewa DUDZIAK-PRZYBYTEK POL

		300 300 300 = 540 + 367s
1 Ziga PUKSIC	SLO	300 300 300 = 540 + 174s
3 Peter MATUSKA	SVK	300 300 267 = 267s

S4A-Boost Glider World Cup

Saturday morning and S4A up first...Boost Glider is always testing and a class that has never really decided on a 'perfect' design. Chuck glider lookalikes, tubed flying wings and exotic composite 'folders' shared the rampa, with the metal not smelted until the last flights. Vladimir Cipic, Zika Josipovic and the best Space Modeller of 2012, Zoran Katanic (all SRB) looked to impress, but plenty of others, including Jan Sebestsa (CZE), Marjan Jenko (SLO), Szymon Byrtek (POL), plus a raft of others looking to upset the apple cart. Stellar numbers all round and Zoran Katanic just signed off a stellar year..

1 Zoran KATANIC	SRB	165 180 180 = 525s
2 Krzysztof PRZYBYTEK	POL	180 137 180 = 497s
3 Antoni BIERNACKY	POL	180 128 180 = 488s

S6A-Streamer Duration World Cup

One thing's for sure, this is always the Big One at any World Cup; Ljubljana's just Massive, with ~60 in the mixer! Lots of folks with plenty to prove...Brits, John Jacomb, Mike Francies & Nigel Bathe; Jaromir Chalupa, Alexander Kozlov, Viktorka Trzylova &

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Pavel Brony (all CZE); Vladimir Khokhlov, Elena Khurkova & Gennady Poltavets (all RUS) and Tomislav Cvitic & Alastazja Polatavets (CRO), just a few of the contenders. Plenty more in the wings, waiting to carve out a reputation in this simplest, but most competitive discipline. Players like Berk Ender Ozogren (TUR), Ziga Puksic & Alja Makuc (both SLO) and Maryana Savova (BUL), desperate to nail a podium or two. Weather conditions pretty much perfect, but the scoring lacking consistency...those mountains create some funny wind currents.. The podium when it came was a good one.

1 Alezxdner KOZLOV CZE 134 158 127 = 409s
2 Vladimir CIPCIC SRB 121 143 126 = 390s
3 Ewa DUDZIAK-PRZYBYTEK POL
148 92 112 = 351s

S9A-Gyrocopter Duration World Cup

Left us in a bit of a spin, with some magical scoring in the top half and amazing inconsistency lower down. Poland is never poor in this one, featuring Szymon Biertek, Krzytof Przybytek & Antoni Biernacky; Ratislav Kicura, Zdenek Kolar & Peter Matuska (all SVK); Bulgaria featured the family Savov...Valentin, Hristina & Maryana & Nikolay Peychev and Jan Sebesta & Bedrich Pavka (both CZE) and Russians, Kiril Stokov, Gennady Poltavets & Elena Kurkova, looking to shoot a good series. Consistency has long been an issue in this class, with far to many flights terminating in a Zero score...maybe time for some rules' scrutiny. At the end, junior Maryana Savova stunned all the guys with a superlative Golden Dragon!

1 Maryana SAVOVA BUL 180 102 180 = 462s
2 Vladimir KHOKLOV RUS 106 160 180 = 446s
3 Antoni BIERNACKY POL 82 180 180 = 442s

S8E/P-RC Rocket Glider Spot World Cup

Calm weather, entry of nearly 30 and plenty of big names in the startlist promised a blinder. Flight objectives fairly simple, a flight duration of precisely six minutes, aiming to land on a target tape at that very moment; points lost for being early or late and for missing the tape. The flyers boost in sets of five, with the top set going again in a flyoff round. This

one mattered for Eduard Wowry, Antoni Biernacky & Pawel Janisiewicz (all POL); Slovenes Tomaz Starin, Blaz Grgic, plus twins Mitja & Matjan Zgajner; much was hoped of Bulgarians Nikolay Peychev, Angel Todorov & Valentin Valchev too. Nige Bathe & Mike Francies (both GBR) and Swiss, Turi Hunziker, Hans Stoll, Martin Eichenberger were gagging for something from the weekend too.

The landing tapes got a regal beating throughout, with the top-10 ebbing and flowing throughout the three qualifying flights. The flyoff set comprised Mitja Zgajner, Blaz Grgic & Tomaz Starin, Eduard Wowry and Valentin Valchev...whose final flight nailed it.

1 Valentin VALCHEV BUL
1000 996 1000 + 1000 = 3996pt
2 Blaz GRGIC SLO
996 1000 987 + 996 = 3979pt
3 Eduard WOWRY POL
976 1000 1000 + 998 = 3974pt

S7-Scale World Cup

Stuart Lodge – Judges' President, Andrija Ducak (SRB) & Andrej Vrbec (SLO) were to oversee a hall packed with quality and diversity. This was the last time the existing rules for S7-Scale will apply and we were all committed to seeing this and the 2012 season off in style. Two different marques of *Ariane*, by Marian Gres (SVK) and Zdenek Kolar (CZE) looked favorites at the start; *Mercury Redstone*, by Tomislav Cvitic (CRO); Viking 10 by junior Viktorka Trzylova and a *Sonda 1-2* by Jan Sebesta (both CZE); *Nike Apache* by Zvonimir Plisic (CRO); *Taurus Tomahawk B* by junior Dejan Stancevic (SRB)...impressive enough. But for the first time in history an *Apollo 13 Lunar/Command Module* was entered by John Jacomb (GBR), not the whole *Saturn 5*...but just the bit that lapped the Moon and returned safely to Earth. Diversity...no two prototypes were the same, a pretty rare event and the judges were to have a hard time in their deliberations.

Perfect conditions, so perfect flying?!? Shame it isn't usually as simple as that, but this time the favourites Marian Gres and Zdenek 'Coca' Kolar delivered with multi stage/motor flights with special

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effects and lots of parachutes and streamers. The race on for third! Simpler prototypes deliver less in the way of flight scores and all of the others in the field were within reach. John Jacomb's *Apollo 13* got unlucky and did not emulate the real thing...Splatt and Zero! Zvonimir Plisic was good with a *Nike Apache*, but not quite as impressive as Dejan Stancevic' *Taurus Tomahawk B*...what a super podium it was..

1 Zdenek KOLAR	CZE	<i>Ariane 44LP</i> 750 + 200 = 950pt
2 Marian GRES	SVK	<i>Ariane 01</i> 680 + 205 = 885pt
3 Dejan STANCEVIC	SRB	<i>Taurus Tomahawk B</i> 566 + 100 = 666pt

Ljubljana l'affaire d'amour...

There a *superlative* Ljubljana Cups and *GREAT* Ljubljana Cups; this one an example of the latter. It's good to recount that the FAI Jury of Srdjan Pelagic (SRB), Vera Pavkova (CZE), Joze Cuden (SLO) + Andrija Ducak (SRB) - alternate, had little to preside over, due to the excellence of the administration. Contest Director Tone Sijanec. RSO Marjan Cuden (SLO) and the administration team of Nina & Miha Cuden, plus Blaz Grgic, got most things right. Hospitality at the health spa of Terme Snovik was just...Snovik! It was wonderful to see Libyans, Rafa Husni and his wife Sultana and it's hoped that the country will affiliate to FAI and allow him to build Space Modelling on the North African coast. Performers...didn't husband & wife, Krzysztof and Ewa Dudziak-Przybytek do well...3 Dragons!

Ljubljana was where it all started in 1978...the *First*; this one was the 34th and the *Last* of 2012. Awesome!

Time for some Scale...*Over to our 'archivist' Jason Wentworth*

HERE is to be found scale & historical data on the *Bullpup-Cajun* and *Bullpup-*

Apache sounding rockets - links are provided below. Due to the small size of the first stage, models of these vehicles might be great for S5-Scale Altitude contests. Some data is incomplete, but perhaps some of the people you know might be able to help. Roy Houchin is currently searching for data

on these rockets. Organizations that sponsored the Bullpup-Cajun/Apache vehicles - the payload people were from there, that is - included the National Science Foundation (NSF), University of Denver and the University of Alaska. I believe the peoples' last names may also be given - I glanced quickly through the sites given below.

The unusual-looking *Cajun* fins in the *Bullpup-Cajun* photo on Gunter's Space Page look like the upper stage fins on the *MQR-13* (also called *XMQ 13A*). *BMTS* (*Ballistic Missile Target System*). These were *Nike-Cajun* and *Nike-Apache* vehicles that were equipped with special nose cones that housed radar reflectors and they were used as missile targets. If you could obtain their upper stage fin dimensions, that would fill many of the scale data gaps for the *Bullpup-Cajun/Apache*. Here are the links:>

http://space.skyrocket.de/doc_lau/bullpup_su.htm

(*Bullpup-Cajun* photo)

<http://forum.nasaspaceflight.com/index.php?topic=23015.0>

(also includes *Ute-Tomahawk*, *Dualhawk* etc.)

www.astronautix.com/lvs/bulcajun.htm

(*Bullpup-Cajun* information)

<http://www.astronautix.com/lvs/bulpache.htm>

(*Bullpup-Apache* information)

www.astronautix.com/stages/bulache1.htm

(yet more *Bullpup-Apache* information)

http://en.wikipedia.org/wiki/MQR-13_BMTS

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(MQR-13 appeared to use same upper stage fins as Bullpup-Cajun/Apache)

www.designation-systems.net/dusrm/r-13.html

(more MQR-13 [modified Nike-Cajun/Apache] data)

http://en.wikipedia.org/wiki/MQR-13_BMTS

(Wikipedia MQR-13 article)

www.neildavisalaska.com/PokerFlatrocketlaunches.pdf

(Poker Flat list with payload-sponsoring organization[s])

www.rocket-services.co.uk/spacelists/sounding_rockets/decades/1970-1974.htm

(sounding rockets 1970 - 1974) [my good friend, John Pitfield is the compiler - Ed]

http://archive.org/stream/astronauticsaero70unit/astronauticsaero70unit_djvu.txt

(mentions Bullpup-Cajun study in it)

From Indonesia

Indonesia's space agency, LAPAN see:

www.lapan.go.id/

..is developing a small satellite launch vehicle called RPS-01, which is also sometimes called RX-550.

(Indonesian nomenclature practice is to call their rockets "RX" [Rocket EXperimental], followed by their diameters in millimeters; thus, the RX-550 is 550 mm in diameter.) The vehicle's rocket motors are from their indigenously-developed sounding rockets (the RX-420 and RX-320). Below are five links to scale data on these rockets:

www.b14643.de/Spacerockets_1/Rest_World/RPS-01/Description/Frame.htm

(includes RPS-01 photo and drawing links)

www.globalsecurity.org/space/world/indonesia/rps.htm

(includes RX-420 [RPS-01 booster] test vehicle)

www.oldrocketforum.com/showthread.php?t=9893

(includes RX-420 [RPS-01 booster] & RX-320 test vehicles)

www.oldrocketforum.com/showthread.php?t=10000

(RX-420, RX-320, and RX-200 scale data)

www.oldrocketforum.com/showthread.php?t=10020

(RX-200 sounding rocket scale data)

From Romania..

The Romanian rocket development group called Asociația Română pentru Cosmonautică și Aeronautică (ARCA) or Romanian Cosmonautics and Aeronautics Association see:

www.arcaspace.com/

[click on the British flag for the English text]) has just finished building the first example of their original-design *Executor* turbopump-fed LOX/kerosene rocket engine see:

www.arcaspace.com/en/home.php

..which produces 23 t (metric tons) of thrust at sea level at a propellant consumption rate of 85 kg/s.

The second *Executor* engine (of their initial batch of 12 engines) is 50% completed. In addition, after ground testing of the *Executor* engines, they will be flight tested next year in the *Haas 2C* see:

www.arcaspace.com/en/haas_2C_en.htm

...an 18 m tall expendable SSTO (Single-Stage-To-Orbit) rocket which - if successful - will be the first SSTO vehicle in the world. Lightweight composite construction gives it an empty mass of 510 kg and a fully-fuelled mass at launch of 16 t, for a mass ratio of 31.37; this is considerably better than the approximately 20:1 mass ratio that is considered the minimum viable SSTO mass ratio - using the LOX/LH2 propellant combination, if memory serves.

The *Haas 2C* will be used for orbiting microsats and cubesats, which typically have masses of < 10 kg. The Bulgarian *CubeMessenger* satellite, which is being built by BOREAS (Bulgarian Orbital Research and Satellites), is scheduled to be launched aboard a *Haas 2C* vehicle next summer see:

www.arcaspace.com/en/Comunicat_Boreas.doc

...The *Haas 2C* rocket is only one of several different vehicle designs that ARCA is developing, which will be powered by one or more *Executor* rocket engines. General weblink...I recently found this huge web site

www.b14643.de/Spacerockets_1/index.htm

...that contains photographs, drawings, and detailed descriptions of sounding rockets, satellite launch vehicles, and ballistic missiles from all over the world (including current, historical, and planned vehicles).

It covers vehicles that I'd never heard of before; even

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in the case of familiar vehicles, it has photographs of them that I had never seen before. Enjoy!

In addition to the above, check out the following: Here is a tiny bit of scale data on a satellite launch vehicle based on the *BOMARC* guided missile, which Aerojet-General designed in 1954-1955 see:

www.olderocketforum.com/showthread.php?p=151478#post151478

..Does anyone you know perhaps have more information on this SLV?

Also, see:

www.olderocketforum.com/showthread.php?p=151480#post151480

.. is material on a *steam*-powered model rocket that was developed in the late 1950s! In addition, a new plastic scale model of a launch vehicle - which has PMC [Plastic Model Conversion] possibilities - is coming, as "Ye Olde Rocket Forum" member "AcroRay" posted here see:

www.olderocketforum.com/showthread.php?p=151365#post151365

..here is his text below

"Coming soon from Aoshima [he provided a link below] is a great looking, non-flying plastic kit of the H-IIB in 1/350 scale, with launch gantry, tractors, and a really cool transparent plastic fire-n-smoke piece you can put under the kit for blast-off. Nice photo at Hobbylink Japan":

<http://www.hlj.com/product/AOS00510>

...comes with a little fairing fragment as well!"

And now for something completely different.., A new company called *Rocket Crafters, Inc.* ..in Titusville, Florida see:

<http://rocketcrafters.com/>

..is developing a combined jet/rocket powered suborbital spaceplane called *Sidereus*. Front Range Airport in Watkins, Colorado, which wants to be the home of Spaceport Colorado, has signed a letter of intent with Rocket Crafters, Inc. for operations of their vehicle at the airport see:

www.space.com/18132-colorado-spaceport-suborbital-private-spaceflight.html

..the company is interested in point-to-point suborbital travel, bringing to fruition Hideo Itokawa's, G. Harry Stine's, Hsue-Shen Tsien's, and Wernher von Braun's dreams of transcontinental and intercontinental winged rocket ships.

interspace.. *Space Modeller of the Year 2012*

Zoran Katanić

Aeroklub Sremska Mitrovica~SRB

OCCASIONALLY, very little thought and no doubts arise in a decision-making process. This is one of those rare events and it's time to review Zoran Katanić' phenomenal accomplishments of 2012..

19th World Space Modelling Champs

<i>GOLD medal</i>	<i>S3A-Parachute</i>
<i>GOLD medal</i>	<i>S4A-Boost Glider</i>
<i>SILVER medal</i>	<i>S6A-Streamer</i>
<i>BRONZE medal</i>	<i>S1B-Altitude</i>

In addition..

<i>GOLD medal</i>	<u>Team</u> <i>S1A-Altitude</i>
<i>GOLD medal</i>	<u>Team</u> <i>S3A-Parachute</i>
<i>SILVER medal</i>	<u>Team</u> <i>S6A-Streamer</i>
<i>BRONZE medal</i>	<u>Team</u> <i>S3A-Parachute and..</i>

..Awarded the following by the World Champs' organisers: *Best Senior Competitor* and awarded with a Cup; Gold medal; Diploma and *Yanoshik Belt* – a symbol of Tatra county. In addition to these, Zoran was also awarded with, the *Carl Neubronner*

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Challenge Trophy and **FAI Perpetual Trophy**, donated by Germany as S4A's Best Senior. To remind readers, Carl Neubronner was the German modeller who flew first Boost Gliders as far back as 1912!

A brief resume of Zoran Katanić and indeed, the whole 'Clan Katanić', is needed in order to understand the magnitude of his/their achievements and significant contributions.

Zoran is a forestry technician by training, but has been totally dedicated to Aero/Space Modelling for more than 3 decades. He has spent some 20 years as the professional coach for Aero/Space Modellers in *Aeroklub Sremska Mitrovica*. He is responsible for many more young people developing their Space Modelling skills. Unhappily, as a result of recent economic trauma, he lost this job. However, as a "*Distinguished Sportsman*", he now receives a scholarship from the *Ministry of Youth and Sports* of the *Republic of Serbia*, to enable him to prepare for competitions and represent Serbia without constraint.

Zoran Katanić also holds the 2001 FAI *Antonov Diploma* for his contribution to the development of models in Class S9-Gyrocopters. Before the 2012 World Champs, he took 2 Silver and 1 Bronze medals in previous 'Champs, plus 2 Silvers in European Space Modelling Championships.

He also established a World Record in Class S6B-Streamer of 14m 53s, in 2001 that still not been bettered. Zoran has also been very successful in the overall FAI World Cup competitions:

SILVER	1998	S6A-Streamer
BRONZE	1999	S6A-Streamer
BRONZE	2003	S6B-Streamer
GOLD	2004	S6B-Streamer
SILVER	2005	S4A-Boost Glider
BRONZE	2005	S9A-Gyrocopter
BRONZE	2006	S8E/P-RC Rocket Glider
GOLD	2007	S6A-Streamer
GOLD	2008	S6A-Streamer
SILVER	2009	S6A-Streamer
GOLD	2012	S4A-Boost Glider

SILVER 2012 S6A-Streamer
...added to these, in 2004, Zoran achieved the Gold medal slot in the *Space Modellers' International Ranking*.

Zoran is a single man and lives at home with his legendary father Radojica and mother Marica. His elder brother Dragan is an R&D electronic engineer, with a son named Mirko and daughter Vesna. All members of 'Clan Katanić' are shown below..

Space Modelling World Champions...

..Radojica ..75 years old and a father + grandfather... S6B-Streamer, in 2002 and..

Mirko ..grandson + nephew - in S1B-Altitude (Juniors), in 2006 and..

Zoran ..son of Radojica and an uncle... S3A-Parachute and S4A-Boost Glider, in 2012 and..

Vesna ..grand daughter and niece... S9A-Gyrocopter (Juniors), in 2012

Utterly unique that three generations from one family, are *all* active Sportsmen at the same time and *all* are World Champions.

Mother Marica – who appears to have won nothing in the array above – is due a **PLATINUM medal**, embossed with diamonds, the size of a dinner plate!

World Cup 2012 Final

Standings...*Over to Srdjan*

Pelagic who has all the details!

HERE we are at the end of the very, very successful Space Models' 2012 competition season. We enjoyed a huge World Championships with a participation of 23 countries and also a very lengthy World Cup season with 24 succesful events.

Here are the names of the winners:

S4A-Boost Glider		
1 Zoran Katanic	SRB	339pt
2 Zivan Josipovic	SRB	319pt

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3 Vladimir Cipcic	SRB	298pt
S6A-Streamer Duration		
1 Zoran Atanasoski	MKD	335pt
2 Aleksandr Koslov	CZE	333pt
3 Zoran Katanic	SRB	332pt
S7-Scale		
1 Zivan Josipovic	SRB	329pt
2 Zdenek Kolar	CZE	327pt
3 Jurgis Strazdas	LTU	322pt
S8E/P-RC Rocket Glider		
1 Grigoriy Sergienko	RUS	324pt
2 Vladimir Cipcic	SRB	314pt
3 Tsonev Todorov	BUL	313pt
S9A-Gyrocopter Duration		
1 Gintorus Jucevicius	LTU	339pt
2 Gennady Poltavets	RUS	335pt
3 Krzysztof Przybytek	POL	307pt

CONGRATULATIONS TO THE WINNERS!

Also thanks are offered to organisers of all events and also to ALL participants for their commitment and contributions. Time for a short statistical resume. There were 2260 entries in five classes with almost 6500 competition flights.

Participation in World Cup classes was:

Class S4A 533 entries 299 participants; 1.78 average entries/participant

Class S6A 735 entries 426; participants; 1.72 average entries/participant

Class S7 212 entries; 129 participants; 1.64 average entries/participant

Class S8E/P 259 entries; 132 participants; 1.96 average entries/participant

Class S9A 521 entries; 289 participants; 1.80 average entries/participant

I wish you to have a good relaxation during the winter time and then to get well prepared for the forthcoming competition season 2013.

Provisional Space Travels

2013... *Where are we all tripping off to then?!?*

PROVISIONAL...be sure not to forget.

The events below need to be finalised and ratified shortly. But here we go, let's have a peep into what looks like a stellar 2013!

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14th European Space Modelling

Championships ~ *for Seniors & Juniors*

23 – 30 August 2013

Kaspichan – Bulgaria

Seniors ~ S1B-S3A-S4A-S5C-S6A-S7-S8E/P-S9A

Juniors ~ S1A-S3A-S4A-S5B-S6A-S7-S8D-S9A

5-7 April 8th Catalunya Cup ~ Lleida-ESP
S4A-S6A-S8E/P-S9A WCs + S3A

12-14 April Belarus Cup ~ Grodno-BLR
S4A-S6A-S7-S8E/P-S9A WCs + S1A-S1B

19-21 April Korolev Cup ~ Mescherino-RUS
S4A-S6A-S7-S8E/P-S9A WCs + S1A-S1B

22-23 April Veteranov Cup ~ Mescherino-RUS
S12/P

3-5 May Slovak Cup ~ Roznava, Gemer-SVK
S4A-S6A-S7-S8E/P-S9A WCs

10-12 May Kaspichan Cup ~ Kaspichan-BUL
S4A-S6A-S7-S8E/P-S9A WCs

17-19 May Krupka Cup ~ Krupka-CZE
S4A-S6A-S7-S8E/P-S9A WCs

24-26 May Buzau Cup ~ Buzau-ROM
S4A-S6A-S7-S8E/P-S9A WCs

30 May-2 June Polar Cup ~ Murmansk-RUS
S4A-S6A-S7-S8E/P-S9A WCs

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1-2 June **Krakow Cup** ~ Krakow-POL
S4A-S6A-S7-S8E/P-S9A WCs + S1B-S8D

8-9 June **12th Stip Cup** ~ Stip-MKD
S4A-S6A-S7-S8E/P-S9A WCs

15-16 June **13th Sirmium Cup** ~ Sr Mitrovica-SRB
S4A-S6A-S7-S8E/P-S9A WCs

28-30 June **Antanas Gustaitis Cup** ~
Marjampole-LTU
S4A-S6A-S7-S8E/P-S9A WCs + S1B & S3A

29-30 June **2nd Balkan Cup** ~ Dupnica-BUL
S4A-S6A-S7-S8E/P-S9A WCs

5-7 July **Liepaja Cup** ~ Liepaja-LAT
S4A-S6A-S7-S8E/P-S9A WCs

6-7 June **8th Vega Cup** ~ Zadovinek-SLO
S4A-S6A-S7-S8E/P-S9A WCs

13-14 July **12th Belgrade Cup** ~ Lisciji Jarak-SRB
S4A-S6A-S7-S8E/P-S9A WCs

19-21 July **Zielona Gora Cup** ~ Z. Gora-POL
S4A-S6A-S7-S8E/P-S9A WCs

19-21 July **Impulse Cup** ~ Shostka-UKR
S4A-S6A-S7-S8E/P-S9A WCs

25-28 **Yangel Cup** ~ Dniepropetrovsk-UKR
S4A-S6A-S7-S8E/P-S9A WCs

17-20 August **Baikonur Cup** ~ Kosmodrom-
RUS/KAZ
S4A-S6A-S7-S8E/P-S9A WCs

17-27 August **Juniors'** S3A-S4A-S6A-S7-S9A-
S12A/P

14th European Space Modelling Champs

21-22 Sept **3rd Fenix Cup** ~ Vincovci-CRO
S4A-S6A-S7-S8E/P-S9A WCs

21-22 Sept **Capitol Cup** ~ Manassas-USA
S4A-S6A-S7-S8E/P-S9A WCs

24-27 Sept **Cup of Korkyt Ata** ~ Korkyt Ata-KAZ
S4A-S6A-S7-S8E/P-S9A WCs

11-13 October **35th Ljubljana Cup** ~ Kamnik-SLO
S4A-S6A-S7-S8E/P-S9A WCs + S3A, Show Models,
High Powers, boozing, sex, drugs and rock & Roll
(Open Internationals..)

**...DRAFT DRAFT DRAFT DRAFT DRAFT
DRAFT DRAFT DRAFT DRAFT DRAFT**

Editor's note.. *Once more, just a guiding word that this is the Provisional list for 2013. Full details may be gleaned from..*

www.fai.org/aeromodelling 'page. Details of the organisers and precise venues will also be available, for forward planning.

Firkin Funnies...*a chance to sign off 2012 in style!*

from Alenka Cuden

MINI...there is nothing more **BRITISH** than the former Austin/Morris/British Leyland Mini. Winner of the Monte Carlo Rally on three occasions in the 1960s. Had some flaws, of course, but just when *WE* thought it was 'all over'...along came the **GERMANS** – specifically BMW – and turned it into the best little car around. It is manufactured in Coventry however.. Enjoy!

<http://www.youtube.com/embed/ik9AtJQXaHQ?rel=0>

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Editor's note To all readers...be sure to have a..

**Great Christmas and a
Happy New Year!!**

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..2013 will be with us before we know it. I look forward to seeing lots and lots of you around the World Cup circuit again soon.

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