CIAMFlyer
Introduction to the Model Aircraft World
CIAM Flyer 4-2018

50 YEARS OF SPACE MODELLING : GENESIS & EVOLUTION

by Stuart Lodge

Books and journals began appearing at an early stage. This collection includes USA, USSR, Poland and Romania. Note Estes' Model Rocket Contest Guide, featuring American NAR contest events, which was where it all started.

Embryonic Developments 1966

1966 ~ Dubnický Maj, Czechoslovakia (ČSSR) hosted the first FAI event, attracting nations, ČSSR, USSR, Poland, Romania and Yugoslavia. Classes flown, Parachute, Streamer & Boost Glider Duration and Scale models. Propellant impulses unrecorded, model specifications non-existent, meaning that the rockets resembled pencils! Most Boost Gliders ejected their motors, when transitioning into gliders.

Ellie Stine (USA) nailed the Bronze in S3-Parachute Duration at 1972's 1st WSMC, Vrsac, Yugoslavia, seen here tweaking a tiny S5-Scale Altitude rocket. Father Harry Stine was President of the FAI Jury at this inaugural event.

1967 ~ 9th NARAM took place 'Stateside, with many of the FAI classes flown at Dubnicki Maj.

1968 ~ Bernard Biales (USA) trialled a radio controlled 'Rocket Glider', the model retaining its motor case throughout the flight. This was a 'life changing' moment, although not to feature in FAI events for some time. FAI-CIAM formalised Space Modelling contest classes into:
S1-Altitude
S2-Altitude Payload
S3-Parachute Duration
S4-Boost Glider Duration
S5-Scale Altitude
S7-Scale
Kits of model rockets were finding their way to shops in Eastern Europe, books being written and crucially, Model Rocket Motors were being manufactured for use in contest events. Remember, Estes & Centuri products were not available outside the USA. In addition, Harry Stine's Handbook of Model Rocketry & The New Model Rocketry Manual, migrated to various nations, providing kit concepts and rocket motor specifications, priceless to anyone wishing to manufacture these things.

1971 ~ Inaugural 'Criterium of Rocket Models' Champs of Eastern Europe – hosted by Romania. National Championships of individual nations had begun to appear, from 1967 onwards and like we were now on the way to the first World Space Modelling Championships (WSMC).

1972 ~ Vršac in Yugoslavia hosted the 1st WSMC, despite FAI's refusal to sanction 1971's event. Things were becoming much more formal, with FAI-CIAM publishing rocket specifications, linked to alphabetic motor impulses eg. S6B-Streamer Duration, with a 'B' class, 5 Newton second (Ns) motor.

1974 ~ 2nd WSMC hosted at Dubnica nad vahom, ČSSR, featuring classes' definitions as we see them today.

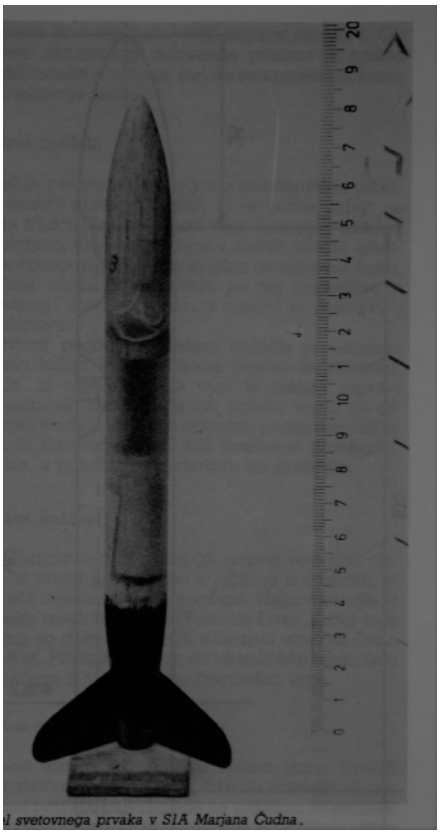
1979 ~ Inaugural 1st European Space Modelling Championships (EuSMC) were hosted by Lleida, in Spain.

1980 ~ 4th WSMC, at Lakehurst NJ, USA. Teams from Bulgaria, Great Britain, Canada, ČSSR, Poland, Spain, the Hosts and...Australia! Space Modelling had migrated to the Real World…brilliant. Focally, an experimental class was trialled...S8E-RC Rocket Glider Duration. Soon to feature everywhere and to evolve significantly.

Rasto Snoj sets up his Luna 1 S7-Scale model at the Championships of Yugoslavia, in the early 1980s. In real life, this Soviet moon satellite rocket preceded Juri Gagarin's Vostok by 2 years, leaving Earth's orbit, but missing the moon!

The End of the Beginning

Space Modelling up and running in Europe and globally, some challenges remining…WSMC and EuSMC not yet featuring in alternate years. FAI's formal involvement, rocket motor impulses and models' dimensions, laid down the canvas for design and performance developments. More books and magazine features were appearing in Poland, USSR, ČSSR and other States, encouraging wider participation.



Performance rockets were SMALL in the early years of FAI Space Modelling. Line up the ruler – showing centimetres – on the right and you'll get the idea...one of the reasons why so many were lost!

Model construction, was still traditional, mainly paper, cardboard and balsawood. S class rockets were small and unimpressive; S1-Altitude

performance determined by coloured smoke and theodolites – unpredictable; S4-Boost Gliders like 'chuckies' and S7-Scale models...just like now!

TeamUSSR show off their spoils at 1980's Champs of Socialist nations.

The trend towards "bigger models" began in the mid-1980s

1980s, when 18mm diameter/20cm length dimensions were introduced to 'A' 2.5Ns powered S1A-Altitude, S2A-Altitude Payload, S3A-Parachute Duration and S5-Scale Altitude. 10Ns 'C' motors were designated for S5C-Scale Altitude...but these specifications still meant tiny S5-Scale Altitude models! Performance rockets were the size of a felt-tip pen and S2-Altitude Payload soon to fall from grace…contest payload rockets took three decades to reappear! S4C-Boost Gliders saw a paradigm design shift...the 'Rogallo' (flexwing), which folded down to a Rocket for boosting, before deploying its Mylar wing area at apogee, becoming a Glider for the rest of the flight profile. Rogallos were outlawed by FAI in the 1980s – just too much performance. At the same time, Folding wing, 'rigid', Boost Gliders made their appearance, to get more boost altitude and a better glide slope. 5Ns 'B' impulse was finding its way into S1B-Altitude models and the first 2-staged models began to appear in 1981, with a World Record by Juri Soldatov. Other USSR flyers, Vladimir Minakov, Viktor Kuzmin and Aleksandr Mituriev flew similar models at the 1981 EuSMC...an event not ratified by FAI.

1983 ~ S8E-RC Rocket Glider again trialled at 5th WSMC, in Poland. with USA's Phil Barnes, Karen Dillon & Robert Parks monopolising the podium…but no medals awarded! That this class had come alive is illustrated by the fact that S8A, S8B, S8C – with no RC – World Records were set by Romanians and RC classes S8E and S8F by Soviet Union team members. Reminder, what's the difference between S4-Boost Gliders and S8-Rocket Gliders? ...Boost Gliders retain, or eject, their spent motors transitioning to a glider; Rocket Gliders retain the spent motor for the whole flight. Romania's

1984 EuSMC featured S8E-RC Rocket Glider, with a podium 1-2-3 for Bulgaria: RC Rocket Gliders here to stay. But it was just a Duration class with no tasking.

1985 ~ saw the 6th WSMC at Yambol, Bulgaria; S4-Boost Glider's (r)evolution resulting in a reduction in motor impulse from 'C' 10Ns to 'B' 5Ns, to reduce the boost altitude and improve recovery prospects! A year following, Japan was introduced to FAI Space, making things even more global.

Where are we Now? 1960s to 1986 ~ a quarter century of FAI Space Modelling. A lot happening; a lot being reported; a lot of progress... time to sort out the contents in the mixer. Classes regularly flown included S1A-Altitude, S3A-Parachute and S6A-Streamer rockets were still

John Stewart – in the blazer – introduced Model Rocketry to the UK in the 1930s. Far right, Paul Clark, who, after attending 1980's WSMC at Lakehurst NJ, USA, brought FAI Space to these shores. In the middle, John Wheddon, who attended European events with Peter Freebrey in the 1970s and beyond.

Altitude much too small; S8E-RC Rocket Glider needing a tasking upgrade to attract AERO Modellers. But Space Modelling was boosting away from its 1960's genesis and uniting flyers from all over, against the backdrop of a changing Real World, especially in Eastern Europe.

1987 ~ Your scribe selected for Team GBR to travel to what was then Yugoslavia, to fly at 7th World Space Modelling Championships...exciting! Your scribe now 'hands on' and the History...Evolution too, more personal and 'Real World', with S1-Altitude, S3A-Parachute Duration and S6A-Parachute Duration, 20cm long/20mm diameter; S5-Scale Altitude, not much bigger...unimpressive. S4-Boost Gliders, were mostly Rogallos – flexwings; S8E-RC Rocket Glider, a Duration-only class. S7-Scale as awesome as it is now! S1-Altitude was flown with 5 Newton second (Ns) 'B' motors, normally single-staged, to astonishing altitudes.

7th WSMC featured Bulgaria, Czechoslovakia (ČSSR), Switzerland, West Germany, Poland, Romania, Spain, USSR, USA and the Hosts. Eleven nations and the standard across the classes just stellar. Model construction 'state of the art', composites and propellants, 19 Decembar, MRD, ZVS Dubnica and novel Delta propellants, by Jiří Táborský. S1A-Altitude was monopolised by the hosts, 1st Marjan Čuden, 2nd Bogo Štempihar, 3rd Miroslav Stancević...the first two Slovenians, who didn't like being called Yugoslavs!

Catalyst to Transition 1988-89-90 ~ St Leonhard Modellraketen Festivals (MRF), in Bavaria, 'though not technically FAI events, changed the world of Space Modelling! A combination of FAI and National Association of Rocketry (NAR) classes were flown together. 1989's 2nd MRF featured big(ger) 35cm long/30mm diameter, S3A-Parachute and S6A-Streamer Duration models; S8E-RC Rocket Glider still Duration only. NAR classes included 'Helicopter' Duration – significant, as five years on, similar S9A-'Gyrocopter' Duration, became part of FAI events.

The MRFs united us and ensured we survived challenging Real World

events now in motion. Nations in play... France, Netherlands, Switzerland, Austria, West Germany, East Germany, ČSSR, Yugoslavia, Poland, Bulgaria, United Kingdom...observers from USA too. Germany 'united' – Bundesrepublik Deutschland - for 1990's 3rd MRF, with ČSSR becoming ČSFR, at a similar time. Oliver Missbach and Pavel Miladinović-Černoch were responsible for setting up these MRFs, merging East and Western Europe...just stellar! Late-1980s to mid-1990s, which could have seen the end of FAI Space, featured so much innovation, both in event structure and models' evolution... so much was happening!

1990 ~ Rogallo gliders reclassified as S10-Flexwing Duration, with only rigid/folders now able to be used in S4B-Boost Glider. Performance was less, but more came back to fly again! The concept of S9A-Gyrocopter Duration found its way into the FAI Sporting Code.

1991 ~ 'Tasking' trialled in S8E-RC Rocket Glider...S8E/P-Provisional. Progressive and featured precision Flight Duration & Spot Landing, running parallel with S8E-RC Rocket Glider Duration at European World Cups.

1992 ~ The World Cup was trialled around Europe featuring only S8E-RC Rocket Glider Duration. Inaugural winners were, 1st Stefan Mokran (ČSFR); 2nd Jiří Táborský (ČSFR); 3rd Hans Stoll (SUI).

1993 ~ S6A-Streamer Duration, S4B-Boost Glider & S7-Scale added to World Cup array.S9A-Gyrocopter Duration now routinely flown as an 'open' class in World Cup events around Europe.

1994 ~ 10th WSMC at Leśno, Poland, saw Juniors' Teams as a discrete entity, flying in parallel with Seniors. Another defining moment in Space Modelling. 1995 ~ World Cup now consisted of three classes – S6A-Streamer Duration, S7-

Scale and S8E-RC Rocket Glider Duration – very competitive.

1997 ~ Srdjan Pelagić elected as FAI-CIAM Space Models sub-Committee Chair. Another decisive moment, with a dynamic personality in charge, into the Millennium. The World Air Games, in Turkey, featured Aerospace activity across the spectrum, including Space Modelling.

Millennium Masterplan

Space Modelling in a very different place from where it was, a decade before. A changing 'Real World' meant so many more nations in Eastern Europe, notably Estonia, Latvia, Lithuania, Ukraine, Kazakhstan et al – from the old Soviet Union; Russia now the most dominant player in Space Modelling. Former-Yugoslavia's Slovenia, Serbia, Macedonia and others, plus discrete Czech & Slovak Republics, meant more World Cups and Open events. Serbian Ultra propellants came into play. More Young People featuring at most events: Positive.

2001 ~ 50cm long/40mm diameter - BIG - bodies for S1-Altitude, S3-Parachute Duration, S6-Streamer Duration, S9-Gyrocopter. But 5Ns 'B' motors meant

too much too performance! The World Cup now saw S4B-Boost Glider, S6B-Streamer Duration, S7-Scale, S8E/P-RC Rocket Glider Precision Landing and S9B-Gyrocopter Durations. But these 'Big' models, using 5Ns 'B' motors, boosted far too high for reliable timing, recovery and results! ..'A' 2.5Ns motors replaced these in Duration classes to the present day. S5-Scale Altitude saw similar increases in body specifications, with 55cm long, 50mm diameter bodies, boosted by 10Ns 'C' propellants – S5C; Juniors flying smaller 50cm/40mm models, on 5Ns motor impulse – S5B.

Outside the Box …

Seemingly unrelated, USA's NAR set up a nationwide schools' event called Team America Rocketry Challenge (TARC), featuring a Payload Altitude & Duration event. 1000s of young people were introduced to Model Rocketry. Canada and Japan joined the event, which grew impressively. 2007 saw the equivalent UKRoC – United Kingdom Aerospace Youth Rocketry Challenge – get started. Another generation boosting rockets.

2008 ~ 17th WSMC was hosted by Spain, near Barcelona and unique...S5-Scale Altitude and S7-Scale were not carded for either Seniors or Juniors. Fairly controversial!

2010-2013 ~ Models' specifications like 2001. For classes S1-Altitude & S5-Scale Altitude, electronic altimeters replaced traditional theodolites and much more reliable.

2014-2015 ~ A focal change went live in 2015…in S5-Scale Altitude, Seniors & Juniors. 'Pencil tipped' two stagers, were replaced by similar diameter, D-Region Tomahawk, Inta 300, Nike Black Brants, Athena, Terrier Improved Orion, PBX100/10BT, AIM 120-120A, SS-520-1. In S5-Scale Altitude and S7-Scale, the 'Originality' rule came into play; broader diversity and participation the result. Evolution...where are we now?

2016 ~ 21st WSMC, in Lviv, Ukraine, saw S2/P-Fragile Payload Altitude carded as an experimental class. 'Payload' resurfacing after three decades in the depths...full circle! Surely a spin off from TARC & UKRoC, showing that 'tasking' is where 'Performance' classes should be going: time to think 'outside the box'. Entry levels at record highs; impressive models; World Cup & Major Championships ever better; more Young People. But Real World events continue to challenge, Ukraine's 2015 &16's EuSMC & WSMC were shifted from Dnipropetrovsk in the east, to Lviv in the west, owing to the troubles with Russia. In addition, some national aeroclubs, notably Serbia, Slovakia and Slovenia have seen cuts – even removal – of their central funding, threatening their traditional contributions. Novel Space Models sub-Committee Chair, Slovenian Jože Čuden, resigned his position at 2018's CIAM Plenary Meeting, with Slovakian, Zoran Pelagić – Srdjan's nephew - taking over. But progress will continue...more technology; more tasking disciplines; more participants. More Evolution then, no...REVOLUTION!

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CIAM Flyer 4-2018
Editor: Emil Ch. Giezendanner
ebi.giezendanner@bluewin.ch