

2017 European Spacemodeling Championships



August, 2017

ESMC Contest Overview



- We were warmly welcomed by all the teams
 - Many of the Europeans were happy to see us
 - We are now “familiar faces”
- The Russians and Serbians were in attendance
 - UK and Canada did not attend
- 226 people total attended
 - 109 Seniors and 76 Juniors from 17 countries
- We learned a lot that will help us better prepare for 2018
- We were the “best dressed” team!

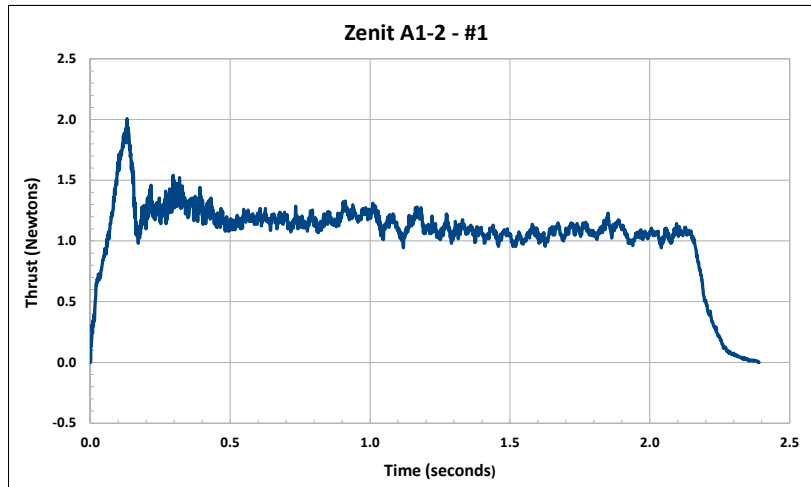


ESMC Held in Wloclawek (not Nowy Targ)



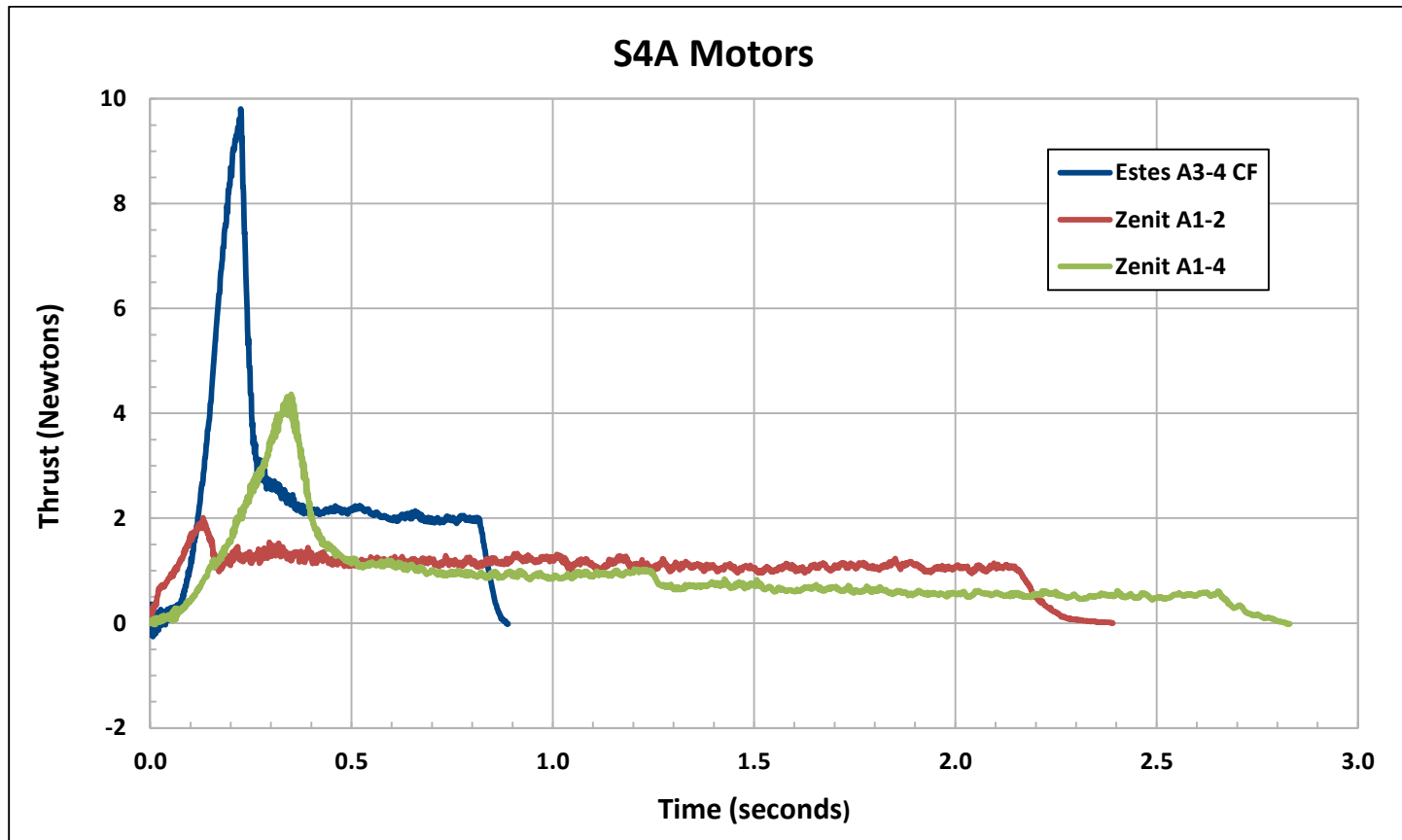
- Town name is pronounced "Votes-wah-vek" (verified by a local)
- <https://upload.wikimedia.org/wikipedia/commons/6/61/Pl-W%C5%82oc%C5%82awek.ogg>

European Motors / Igniters



- Ukrainian Zenit motors worked well
- Nozzles should be scraped out a bit (clay) before installing igniters
- “J” igniters worked well
 - Need to bring SIP adapters
 - Nichrome wire & LiPo’s also worked
- We performed static testing of Euro motors
 - 10mm Zenit (Ukraine)
 - 10mm Jambol Jet (Bulgaria)
 - 13mm C2 and C1.5 motors for S5C
- We also plan to buy motors from Bulgaria and Poland for WSMC
- Need to tailor the ejection charges for each event before we submit them

Zenit Motor Static Test Data



Note: Zenit A1-2 and A1-4 have different thrust-time curves, not just different delay times

Static test data will be uploaded to the "FAI Spacemodeling" pages on the NAR web site



Contest Field Was Lightly-Used Airfield



First ditch



Corral (with gate)



Contest Field

★ Models recovered in these areas



- From a recovery standpoint, this was the most challenging field we've seen for a WSMC or ESMC
- Many & varied obstacles to access and visibility

Observations About the Contest Field



“Free Beer With Emma”
increases chance of
model recovery



- Field is ~20 minute drive from the hotel
- Field is a decent thermal generator
 - Lift was moderately easy to find
- Lots of obstacles around the field
 - Ditches, trees, fences, ponds, corn
 - Big recovery teams will have an advantage
- We were allowed to park cars directly behind our team tent
- Launch range was nicely set up, but poorly located on the field regarding recovery
- RSOs were lenient but consistent
- Timers usually just one good one in the pair
 - Need to keep an eye on the timers to be sure they haven't given up too early
- Need to be very careful what is being said on the recovery radios
 - Many Europeans understand English

Prep Area Observations



- Not enough tables or chairs in our tent area to support our normal way of doing things
- Walmart-like store in town
 - We may need to purchase some tables and chairs to bring to the field
- Scores were kept real time in a tent in the front of the range
 - No Jumbotron like Ukraine
- Wi-fi available on the field, but not very functional
- Restroom facilities were adequate
- Food and water were somewhat less than expected, but will most likely be addressed by WSMC



US Team Tent at the ESMC



Larger teams received multiple adjacent tents



Weather! We Had Lots of It!

- Be prepared for cool, wet weather!
- They will not halt a round unless there is a downpour!
- Be prepared to stand over your rocket on the launch stand with an umbrella, or you may miss launching in a round
- We did fly on the reserve day
 - Seniors flew S1B



S1B Observations



- Zenit motors worked well (A2-0/A1-8)
- US results
 - Matt Steele: 634m (8th place)
 - Steve Kristal: 570m
 - Mike Nowak: 444m
 - US Team finished 4th
- Sustainers were extremely difficult to see and recover
 - RSO: “model to control”
 - 17% track lost rate
 - 20% DQ rate
- Many models were returned by other competitors
 - Good sportsmanship
- US piston launchers worked well



S2/P Observations

- S2/P had been scheduled as a demonstration event
 - To be flown on the reserve day
- **ESMC decided not to fly S2/P**
 - Not sure why
 - Reserve day being used for weather-postponed events
 - Tired from week of competition under challenging conditions?
 - Level of interest? No awards?
- Will need to verify how S2/P will be flown at 2018 WSMC
 - Scheduling on the reserve day may be a bad idea
 - Range, personnel (timekeepers, altimeter processing, etc.)
 - Bad to travel to Poland, then find your event isn't being flown!



S3A and S6A Observations

- Russians said they don't piston some of their models because the nose cones will deform (very light construction)
- US results: Emma did best, placing 20th in S6A



S4A Observations

- **S4A design uniformity**
 - One slide wing (US)
 - One slide pod (US)
 - All others were scissors/flop
 - Some commercially built
- **Scissors/flops did well**
 - Two triple maxes, three double maxes on a tough day
- **Many models used DTs**
 - Mechanical, fuse
 - No RC DTs seen
- **Some models used pistons**
- **Recovery was challenging**



S5 Observations

- **Impressive variety of prototypes**
 - Single stage and two stage models
 - MP-06-M seems to be emerging as a favorite prototype
- Judging may have evolved to “overcome” the originality rule
- Span of points was 230
 - More than twice the spread of 2016 WSMC
- Altitudes exceeded 550m
 - Well above 2016 WSMC (490m)
- Two stage models took 1st and 2nd
 - Higher static points



S5 Observations



- 1st place = SS-520-1 (SVK)
- 2nd place = TT-500-1 (SVK)
- 3rd place = MMP-06-M (RUS)

S7 Observations

- “Standard three” still dominate...
 - Soyuz, Ariane III, Saturn IB
- ... but a little bit more variety
 - Proton/Zond, Zenit, Minotaur, etc.
- Winning models were different
 - 1st = Saturn V, 2nd = Ariane I
 - Lots and lots of exquisite detail



Several spectacular crashes,
only a few catos



S7 Observations



Note: they did not enforce the new “no qualified flight, no points” rule

US S7 Models



Mike Nowak
Saturn V



Chris Flanigan
Titan III C/MOL



Marc McReynolds
M-3C



S8E/P Observations

- Inexplicably, the event was flown under the “old” rules
 - Three rounds, flyoff round
- DLGs, converted to rocket power, were the most popular approach
- Other countries have developed long burn E motors
- Lots of lift, so event was mostly a precision landing event
- Very tight scores in initial 3 rounds
 - 5th place was 2989.1 (out of 3000)
 - ... and that’s w/o China being there!



S9A Observations

- Many models used flop rotors
- Piston launchers sometimes used



General Contest Observations

- **Be ready! Be on time!**
- **Be prepared before you leave**
 - Know how you are going to transport models & gear
- **Be ready the day of your event(s)**
 - Get a good night's sleep the night before
 - Have as much done as possible before the round opens
- **Be ready at the start of the round**
 - Plan on a 20 minute window to prep and fly
- **Plan for wind and rain**
 - Weather can change very quickly, even within a round



We design, they practice

General Contest Observations – Recovery

- We should do a thorough briefing of recovery forces on practice day
 - Appoint a team member to coordinate recovery in advance of leaving the US
 - Drive folks around to familiarize them with the recovery zone
 - Distribute maps with common landmark names
 - Actually practice radio and recovery procedures
 - Have multiple vehicles (minimum 4) available
- Consider using a radio locator transmitter to aid in retrieval of S3A models



Lessons Learned

Matthew Berk
Timekeeper In Demand!



- Develop and use a checklist!
- Use practice day to familiarize yourself with the field and the motors
 - Plan on at least three test flights
 - Test models, pistons, igniters, ejection charges
- Our motors are competitive with everyone else's – if you practice with them
- Have US people, with binoculars, present in (or near) the lane to "assist" timekeepers
 - Some timekeepers were not rocket-proficient
 - May have benefited from friendly assistance
- Bring SIP pin adapters, in case you need to use "J" igniters in a non-piston setup (like S4A)
- Consider being a timekeeper
 - Great learning experience!



Lessons Learned

- **Bring an FRS radio**
 - On-field communication during deep recovery
- **Go to S5 and S7 model pickup early**
 - Take photos of all judging sheets before they are picked up
 - Judging sheets may help us better understand S5/S7 judging
- **Don't wait for the last minute to make airline reservations**
 - August fills up early in Europe
 - Availability goes down, prices go up
 - Hope to confirm WSMC location by January



Traveling to the Meet



- Travel is easy from Warsaw or Berlin
- If flying into Warsaw a day early, the Marriott Courtyard is really convenient
 - The hotel is right at the airport
 - The best deal is "room with breakfast"
- Plan your transport box
 - Check airline size/weight limits (inc carry on)
- Rental cars
 - Most rental cars have manual transmissions
 - Need intl drivers permit (AAA, 6 months)
- No border checks Germany/Poland
 - The buildings remain – now you bypass them
- Driving in Poland similar to rest of Europe
 - Great autostrada; tight in old parts of town
 - Google and Apple Maps work well in Poland



Meet Logistics

- There is a nice store close to the field
 - Snacks and drinks were well stocked and reasonably priced
- McDonalds 15-20 minutes from field
- Variety of nice restaurants in town



Accommodations Were Good

- Huge multi-building hotel/spa
 - Spacemodelers will not be the only ones there
- Hotel was comfortable but missing some things we take for granted
 - Laundry/towel service
 - Daily bed make up
 - BYO soap, shampoo, etc.
- Bring adapters for 220/50 Hz
- Breakfast and dinner every day at hotel
- We had several very nice dinners in town



A Sincere Note of Thanks!

- The organizers went out of their way to make our stay better, both flying-wise and comfort-wise



Summary

- We had a great time at the ESMC, despite the weather
- Return of the Russians makes the competition tougher
- We look forward to returning
- Remember the goals!
 - Good performance
 - Good sportsmanship
 - Good time had by all



The End



S7 Observations



- 1st place = Saturn V (CZE)
- 2nd place = Ariane I (SVK)
- 3rd place = Saturn IB (POL)
- 4th place = Soyuz U-FG (RUS)



S7 Observations

