

Members Guide 2021

Monroe Astronautical Rocket Society



Monroe Astronautical Rocket Society is a 501c3 Not-for-Profit Corporation. MARS is Section 136 of the NAR and Prefecture 162 of the Tripoli Rocketry Association

Cover Photo by Greg Young
Dan Michael's $\frac{3}{4}$ Scale Patriot flying on 1x M1939 and 4x L1000 White Lighting



Photo's by Bill Clune



Monroe Astronautical Rocket Society



Section 136 of the National Association of Rocketry



Welcome to MARS Club 2021

Thank you for joining MARS and making us one of the BEST Rocketry clubs in the Country, if not the World!

What is MARS all about?

It's about having fun, relaxing, families, kids and rockets big and small. Whether you are flying MicroMax or a 150lb Complex N-powered "BFR", you will always be appreciated in our club.

New Members will discover what existing members already know, that MARS is a super friendly, accessible club with some of the most knowledgeable people in our hobby. Guests and visitors discover our fantastic flying field, our highly organized operations and most importantly our Extremely SAFE launches.

Your support, helps your club, support you - pads, rails, rods, electronic launch equipment, etc. Included is your membership card for the year. Please plan to wear it at launches as it serves double duty as a name badge. Still have a plastic badge holder from last year or NYPOWER? Please recycle. Don't have a plastic holder? Ask for one at the first launch you attend.

High power fliers: Remember, you MUST be a current member of either the NAR or TRA to fly any High Power Rocket at a MARS launch. We suggest you keep your national membership card in the same plastic holder your club badge is in. Then it's handy should the LCO/RSO decide to ask you for proof of insurance.

See you soon!
MARS Board of Directors

Up to date schedule's and status maintained on our award winning, secure website at <https://marsclub.org>



2021 Launch Schedule Events

NYPOWER May 29th–31st

AirShow July 10th – 11th

NARAM62 July 24th–30th

Club Launches

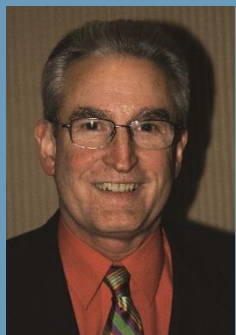
- June 19^h & 20th
- August 14th & 15th
- September 18th & 19th
- October 2nd & 3rd



Your 2021 MARS Board of Trustees



MaryBeth Clune
President/NYP Director



Greg Young
Vice President



Brett Carrier
Secretary



Janice Jurus
Treasurer

MARS 2021 COMMITTEES

Membership

Bill Clune - Chair
Dougy Snyder
Brett Carrier

Education/Outreach

Michele McCortney
Joe Jarvis
Scott Pinkham

Tripoli Prefect

Dennis Jurus

NYPOWER-23

MaryBeth Clune
Greg Young
Bill Clune
Tom McCarthy
John Sentiff
Dennis Jurus
Todd Smith
Brett Carrier
Eric Gallo
Dan Michael

Launch Operations

Bill Clune - Chair
Dennis Jurus
Tom McCarthy
Dan MacNeal
John Derimiggio
Dave Plankenhorn
Dan Michael
Todd Smith
Evan Brown
Greg Young
MaryBeth Clune

NAR Senior Advisor

Bill Clune

Website Content

Bill Clune
Dan Michael
Tom McCarthy

Equipment and Capital Expense

Bill Clune
Dennis Jurus
Tom McCarthy

NAR Certification Team

Dennis Jurus L3CC
Dan Michael L3CC
Bill Clune
Greg Young
MaryBeth Clune

2020 Membership

250+ members
2,000+ flights



Photo by Bill Clune
Pavel with his "Frosty the Skidmark"

MARS Launches

MARS Tries to keep club launches as relaxed and fun as possible while still being diligent about safety. The layout of the pads in relation to the parking lot and the flight line ensures that safe distances (as outline by the NAR/TRA safety code) are established. The MARS launch control system ensures that only the launch control officer can launch rockets, and then only after a range and sky check for safety. NO rocket will be launched by surprise or by accident.

In order to maintain the excellent record of safety both at MARS launches and in rocketry in general, MARS has several guidelines that must be followed by all launch attendees. Please help your club maintain these guidelines by policing yourself and being alert to unsafe situations.

Local MARS Launch Rules:

At MARS launches the (RSO) range safety officer will designate the rail angles depending on the wind speed and direction. The angles are designed to keep rockets from flying over the flight line and towards the Museum buildings. There may be temporary altitude restrictions if the wind blows towards the Museum to prevent recovery drift into buildings/airplanes.

MARS requires all rockets flying on F powered and higher to use rail buttons. With the exception of spools, saucers and mono-copters ALL Rockets F powered and above both sport and competition models must be flown off an appropriate size rail OR flown out of an RSO approved tower! Launch rails are superior to round rods in every way and are an integral part of our system to control rocket flights. As stated above saucers, spools and mono-copters are exempt from the rail button requirement.

Specific requirements for composite clusters:

- All must use commercially made E-matches as the primary ignition source for each motor, and include details about any secondary pyrogens used.
- E-matches to be used in a harness are to be individually measured for resistance. E-matches should match within 10%. Others outside of that range are not to be used for the intended flight.
- E-matches must be wired in parallel.
- The rocket must be capable of a maximum of a 5-1 thrust to weight ratio with all engines ignited, a 4-1 ratio with one engine failing to ignite, and a 1-1 ratio in the event 2 engines fail to ignite
- You may not use a configuration that includes a central motor larger than 2 designations compared to surrounding motors, i.e. a central J with surrounding H's is fine, but a central K with surrounding H's is not.
- All composite clusters must be flown from a rail even the newer Quest/Aerotech A-E motors.

Specific requirements for composite multi staging:

- Must use electronics that are capable of detecting, and set to prevent staging beyond 10 degrees of vertical.
- Timers will not be allowed
- Maiden flights will not be allowed. The flier must have at least previously flown the sustainer and attached booster in a one stage configuration successfully.

Range Duty Description's

Although not all these position are fully needed for our monthly launches the basic functions are still handled by someone.

- **LCO:** This is the MC of the launch. They do all of the announcing, and with the help of the LCO spotter, makes sure the sky and the range are clear of planes and people before ordering the launch of a rocket. They work in conjunction with the RSO to help ensure safety of the range and field at all times.
- **LCO Assistant:** The assistant organizes, and subsequently stores the flight cards received from the range boss. their primary function is operating the launch controllers. This position enables the LCO to keep the launch flowing smoothly.
- **LCO Spotter:** The spotter is responsible for tracking all flights during descent and notifying the LCO if a rocket is heading into any area that could impact personnel or vehicles, either on the range or behind the flight line.
- **Safety Check:** This position is responsible for safety checking all rockets*. They evaluate low, mid and high power rockets for the likelihood of a safe and successful flight. They must be L2 certified. The safety checks may be assisted by other fliers, who are not HP certified, to safety check LP rockets. HP flights employing L, M and N motors will be safety checked by 2 previously assigned BFR managers only. All flier/safety check staff concerns identified needing resolution will be referred to the RSO for final decision.
- **Range Boss:** The RB assigns each flier who has been through safety check a pad for their rocket prior to entry onto the range. This position is fast paced, one where he/she will get the opportunity to see every rocket that's flown. The RB will collect the flight cards from the fliers and then present them to the LCO assistant once the pads on that side of the range have been loaded to keep the flow moving smoothly and the range operating efficiently. The RB reports to the RSO.
- **Low Power Pad Managers:** The LPR pad manager position assists with installation of low power rockets on the pads (many times helping children). He/she helps keep the range clean by making sure used igniters end up in the trash buckets. The LPR pad manager reports to the LCO.
- **High Power Pad Managers:** The HPR pad manager position assists fliers installing high power rockets on the pads. He/she helps keep the range clean by making sure used igniters end up in the trash buckets. The HPR pad manager (not the flier) is responsible for setting the rail angle of all pads prior to launch. The rail angles will be determined by the RSO based on conditions encountered during the launch. He/she is responsible for operation of the fire extinguisher in the event of a fire, until additional help arrives. The HPR pad manager reports to the LCO.
- **Range Safety Officer:** The RSO is responsible for ensuring the overall safe operation of the launch event. He/she will determine rail and rod angles to be used during the launch based on prevailing conditions. The RSO will work with the LCO, the RB, and the Safety Checks to assist with any issues needing resolution, respond to any range/field emergencies, and help ensure smooth flow of the launch. He/she is responsible for the launch waiver and as such his/her decision on matters is final. The RSO position has been assigned to senior MARS staff familiar with operations at the Geneseo field.