SOUTHWEST OHIO ROCKETRY ASSOCIATION (SORA)
LAUNCH REPORT SEPTEMBER 14, 2025
1:00PM TO 4:00PM NAR SECTION #624

Launch Conditions: clear skies, temps in mid 80s, wind 5mph

Total Number of Launches: 31 **Rockets Recovered:** 30 **Lost:** 1 **Found Rocket (not launched):** 0

Total Number of 100% Fully Successful Flights: 23 **Success Rate**: 75.6%

Number of Individuals Who Launched Their Rockets: 7 **Number of Family/Friends/Observers:** 2

Number of First-Time flyers: 0

Teams and Competitions: 1 **NARTREK: 0** **Scouts/Home School/4-H:** 0

Types and Number of Motors: 38 total

Micro	1/4A	1/2A	A	B	C	D	E	F	G
0	0	0	1	16	12	5	2	1	1

2-motor clustered rocket	1
3-motor clustered rocket	1
Two-stage rocket	2
Three-stage rocket	1

Total Newtons: 622.5

Failures: 9 total: 1 chute tangle, 1 chute not deployed, 2 cute separations, 2 bad motors (motors did not meet thrust rating), 1 nose cone separation, 2 underpowered (rocketeer selected wrong motor) (Not counted: one rocket was lost in high weeds after a perfect flight)

Ground Fires: 0 **Damage to vehicles/facilities:** 0 **Medical Incidents:** 0

Donations and drink/food sale, sale of merchandise:

straight out donations: $15
mugs: 0 at $10 = $0
food/drinks: 14 at $1ea = $10
hats: 0 at $10 = $0
t-shirts: 0 at $20 = $0
stickers: 0 at $0.25 = $0
new memberships 0 @$5 = $0

Total Deposited to account ($25)

Rocket Topics and Issues:

1. This was a rescheduled launch (one week later) due to Rick and Robb both being unavailable to run the launch. However, we had really good weather and 31 launches.
2. Harold showed his skill launching a canted (tilted) two motor cluster on B4-4s with a perfect flight.
3. We broke the record books with multiple multi-stage successful launches. Well done!
4. The rocket gods were not happy with Rick. Two of his mid-power rockets (AGM-84 and AIM-54) had, um, how do we say it…." less than perfect flights" resulting in severe damage. Neither the E12-6 and F23-4FJ motors used produced anywhere near the listed amount of thrust. "E" motors have had a known production problem and the F23 was probably too old (4 years). Now Rick has the opportunity to test his repair skills on what were two beautifully made rockets.
5. After a beautiful flight, John Doscher's rocket was lost in the high weeds on the west side of the field. If found, please bring to the next meeting or launch. Thanks! Where's a drone and camera when you need one?
6. Thanks to Robb for doing a great job as Launch Control Officer and Safety Officer!

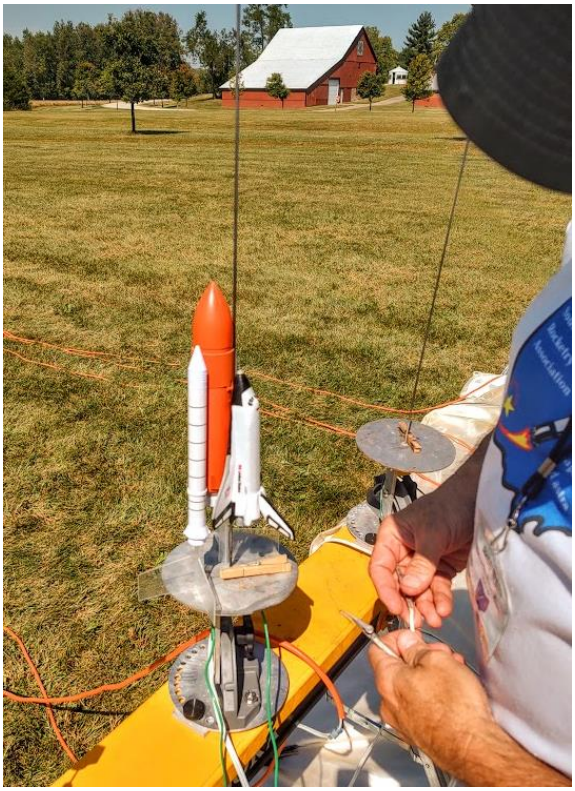
NOTE!!!!!!!

Next business/lecture meeting: Because the Lebanon Library is going through a remodel, the next meeting will be at the Loveland Library. 6:30PM October 7th. 649 Loveland Madeira Road, Loveland Ohio 45140

Next Launch: Sunday, October 12th, 2025. Meet at Hisey Park. Setup 11:00, launch 1:00PM

The Club's Motto……"Sapientia ducet ad astra" – "Wisdom leads to the stars!"

Getting set up for the launch…

	
Harold's Denebola Dynamo	Its great to see our rocketeers making more complex models.
	
Rick's AGM-84 on the high power pad.	Robb's Space Shuttle with a perfectly balanced shuttle that glided beautifully back onto the field.

Rick's AIM-54A . A bad E12-6 motor caused the failure.

Being safe on the high power pad – fire blanket and water extinguisher and a perfect launch.

Wiring up a cluster rocket.

Two canted motor cluster performed flawlessly!

Black Brandt and Super Loki ready to go.

Harold's "Uridim Unleashed" scratch built rocket

F23-4FJ bad motor, fours old, smoke is good, arc is bad….

FUN FACTS: The vast majority of model rocketeers use either black powder motors or composite motors. Composite motors provide three times as much thrust per propellant weight compared to black powder. Composite motors are more expensive but are often required when hobbyists need motors with Total Impulse ratings of F, G, and higher.

Composite motors can be "single use" that are used almost exactly like low power black powder motors. The main difference in setup is that the igniter is inserted all the way into the motor till it reaches the top (forward) delay charge. As such, the motor burns through its entire core the entire length of the motor rather than just at the bottom end as a black powder motor does.

"Reloadable" composite motors have a higher initial cost due to the need for an aluminum metal casing tube with metal end closures, but the "kit" that contains the guts of the working part of the motor is often cheaper in the long run than single use. The "kit" contains the individual parts of the motor such as O-rings, cylinders of packed propellant powder in cardboard tubes, forward/aft closures, adjustable delay charge, explosive charge powder, and seals. Reloadables require attention to detail and give the rocketeer a greater feel for what it is like to assemble a more "realistic" complex rocket. Ammonium perchlorate motors are what NASA solid fuel boosters are composed of -but a much larger scale!

Motor casing

motor parts

Fun Facts Addendum… The solid fuel Space Shuttle external composite motor composition was:

70% ammonium perchlorate (oxidizer)
16% aluminum powder (fuel)
12% PBAN chemical (fuel and binder) (PBAN = polybutadiene acrylonitrile)
1.96% Epoxy (curing agent)
0.4% Iron Oxide (catalyst)