

Feel the burn: Rocket motor burn puts on weekend show

Note: On Saturday, Sept. 23, a joint team from Sandia, Kirtland Air Force Base (KAFB), and the NNSA's Sandia Site Office (SSO) successfully destroyed a Spartan rocket motor that had become unsafe for future use. In doing so, the team produced valuable information for the US Army Defense Munitions Center. The booster's final cautious trek along closed roads, from a bunker in Manzano Mountain to the southernmost reaches of KAFB, and subsequent destruction by burn-off of its solid fuel rocket propellant was by all accounts a risky operation. More than a year of planning, however, helped ensure the operation went off without a hitch. Steven Yesner (5020) tells the story of the Spartan's destruction from his perspective as the Sandia project lead.



Photos by Charles Eberle (5402), Martin Jinzo (5434), and Roger W. Smith (10322) caught the action during the Spartan rocket burn. Photo captions, beginning clockwise with the photo directly above, are:

- Motor container being delivered by the Sandia Logistics team. (Photo by Martin Jinzo)
- Spartan motor during burn on Thunder Range. (Martin Jinzo)
- Logistics team members prepare the motor inside the burn enclosure. (Martin Jinzo)
- The Unified Command, Rescue Recon, and EOD teams prepare for reentry following the burn. (Charles Eberle)
- Martin Jinzo connects the remote firing set. (Roger W. Smith)
- A member of the Thunder Range support group examines the motor's remains inside the enclosure following the burn. (Charles Eberle)
- A Kirtland Explosives Ordnance Disposal squad member places cutting charges on the motor prior to burn. (Martin Jinzo)
- Dave Crutchfield (KAFB, left) and John Wallace (Army) examine a fragment of the motor casing thrown from the enclosure. (Charles Eberle)



High-stakes operation goes exactly as expected



A crack in the rocket's solid propellant had retired the old Spartan booster from flight status years ago, and now we were hauling it to Thunder Range on a flatbed truck to test a disposal technique the Army hoped to use on 46 other retired motors in its inventory. The radio relayed the transport truck's position at Checkpoint 4, the halfway point along the nine-mile journey from Manzano Mountain. Now there was no going back.

For me, arranging to dispose of the rocket motor had been an arduous personal journey of research and analysis, planning and revisions, presentations and negotiations, notifications, cancellations, and rescheduling.

Burning the motor's 12,000 lbs of propellant (equivalent to 7,500 lbs of TNT), which if accidentally detonated would affect everything within a mile, was a high-visibility, high-stakes operation in every respect. I had stayed up late the night before going over the details, and I had arrived at the meeting spot before dawn, eager to get started.

At a safe distance, two miles east of the range, our escort convoy of emergency response vehicles broke off to form a command post, from which the operation would be directed. Incident Commander Bill Wolf (10336), Deputy Fire Chief Don Ballard (KAFB), Safety Officer Charlie Eberle (5402), and I ticked off tasks in the test procedure as the teams called in their reports.

The motor was unloaded by forklift into an enclosure made of huge concrete blocks. The Kirtland EOD (Explosives Ordnance Disposal) team then placed the explosive charges along the length of the motor and retreated to a safe distance. We were ready.

It reminded me, a former theater stage hand, of opening night, standing backstage in the wings, following the script to prompt for lines, actors ready for their entrance and exit cues. The audience, including 5000 VP Jerry McDowell and SSO Team Lead Gary Schmidtke, listened and watched as the finale approached.

Problems with monitoring equipment and contacting air traffic control held things up briefly. As we waited, winds shifted to a more favorable direction, and the cloud cover broke — near-ideal conditions for the burn-off.

When the sensors were ready and all personnel were safe and accounted for, meteorologist Gina Deola (10333) confirmed that conditions were "go." Range supervisor Bill McKinley (5916) and his outstanding team came through again with a direct number for the Albuquerque Sunport's air traffic control tower just as a commercial flight came in over the Manzanos on final approach. A few seconds later, the jet banked sharply to the south and started to climb. With the airspace cleared, we began the 10-second countdown.

The initial fireball caused by the explosives charges resembled a large fireworks ground display. It quickly morphed into a strong fire and column of smoke that lasted just two minutes and was visible, we heard later, from Rio Rancho.

When the firing team — explosives safety officer Roger Smith (10322), explosives specialists Ray Peabody (5434) and Martin Jinzo (5434), Kirtland EOD lead SSgt Joseph Biberston (KAFB) and his squad, range safety officer David Crutchfield (KAFB), and munitions specialist Reggie Smith (Anniston Army Depot) — returned from their forward position, you could see the awe and relief in their faces.

On Sunday, following a 24-hour cooling-off period, the EOD and Rescue/Recon teams suited up for reentry, aided by KAFB Fire Department, Incident Command, and medic support. As the teams made their way to ground zero, they reported no toxicity or unburned propellant and very little debris or residue outside of the enclosure. The burn had performed better than expected; it would be up to the Army Defense Munitions Center to stage the sequel. I had a sudden craving for BBQ and a beer, and a night off.

Story by Steve Yesner • Photos by Martin Jinzo, Charles Eberle, and Roger W. Smith



STEVEN YESNER, Spartan Project Lead, Defense Systems and Assessments Division, Operations, Planning, and Integration (5020)



- More than 140 people were involved in planning the Spartan destruction operation, and some 75 people supported the field operations. The following groups were involved:
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| Sandia | 3300 Medic Support | 3600 Media Relations and Communications | Kirtland AFB | 377 MSG/CED Explosives Ordnance Disposal |
| 4200 Project Management | 5000 Explosives Applications | 5400 Range Operations | 377 MSG/CEP Fire Department | 377 ABW/SFS Security Force |
| 5900 Logistics | 10200 ES&H and Emergency Management | 10300 Facilities Support | | NWC/SEW Weapons Safety |
| 10800 | | | NNSA/SSO | Safety and Health |
| | | | | NEPA and Environment |
| | | | | Waste Management |
| | | | | Explosive Safety |
| | | | | Public Affairs |