NSWC Indian Head Division Hits Milestone with First-Ever Mk 70 Solid Rocket Motor Cast

NSWC IHD cast its first-ever Mk 70 propellant grain into a salvaged Mk 12 booster case, a significant step toward increasing the command’s production capacity of large solid rocket motors for national defense programs. The command’s Mk 70 Production Using Salvaged Hardware (PUSH) program reuses components from Mk 12 Terrier boosters to produce certified Mk 70 boosters for fleet readiness and training requirements. (U.S. Navy photo Released)

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INDIAN HEAD, Md. – Naval Surface Warfare Center Indian Head Division (NSWC IHD) recently cast its first-ever regrained Mk 70 solid rocket motor (SRM) in the command's manufacturing facilities in Indian Head, Maryland. This effort represents a major milestone in NSWC IHD becoming the Department of War's (DoW) second source for reclaimed and re-grained SRMs.

The cast was a significant step toward increasing NSWC IHD's production capacity of large SRMs for national defense programs and to address a bottleneck in the defense industrial base. The Mk 70 is a high-performance solid rocket booster heavily used by the DoW and NASA for various missions across the globe.

"This cast was more than four years in the making. A lot of learning and adjustment went into this," NSWC IHD Cast Propellant Production Branch Manager Frank Cooper said. "The ability to cast a Mk 70 is a big first step in revitalizing the command's diminished capacity."

The team cast approximately 1,500 lbs. of propellant grain into a Mk 12 booster case before sending it to cure, which enables them to be one step closer to this summer's Mk 70 SRM static firing test.

"This Mk 70 booster is a true drop-in replacement for the customer and ultimately the fleet," NSWC IHD Surface Systems Branch systems engineer and project manager Vandit Shah said. "Our team took this from concept all the way to the actual unit. It shows collaboration across all Indian Head departments and detachments, as well as [Naval Air Weapons Station] China Lake and the U.S. Army [Futures Command, DEVCOM Aviation and Missile Center]. The government owns every aspect of this production line."

NSWC IHD's Mk 70 Production Using Salvaged Hardware (PUSH) program, funded by Test Resource Management Center (TRMC) and the Navy's Aerial Targets Program Office (PMA 208), produces

“new” Mk 70 rocket boosters by harvesting, refurbishing and refilling existing components from older, retired missile inventories like Mk 12 Terrier boosters to deliver units quicker and more cost-effectively to the fleet.

“The ability to mix, cast, cure and test a Mk 70 SRM represents a critical milestone that will propel Indian Head forward in the realm of cast composite rocket motor manufacturing, including Mk 104 dual thrust rocket motor re-grain operations in partnership with industry,” NSWC IHD Commanding Officer Capt. Steve Duba said. “The team at Indian Head Division continues to take on the Navy’s most challenging and relevant energetic systems work to meet wartime surge demand now.”

NSWC IHD – a field activity of the Naval Sea Systems Command and part of the Navy’s Science and Engineering Establishment – is the leader in ordnance, energetics, and EOD solutions. The Division focuses on energetics research, development, testing, evaluation, in-service support, manufacturing and disposal; and provides warfighters solutions to detect, locate, access, identify, render safe, recover, exploit and dispose of explosive ordnance threats.