Blue Origin’s rocket reuse achievement marred by upper stage failure

The third flight of Blue Origin’s heavy-lift New Glenn launcher began Sunday with the company’s first successful reflight of an orbital-class booster, but ended with a setback for Jeff Bezos’ flagship rocket, a key element in NASA’s Artemis lunar program.

The 321-foot-tall (98-meter) New Glenn launch vehicle ignited its seven methane-fueled BE-4 engines at 7:25 am EDT (11:25 UTC) Sunday, beginning a slow climb from its launch pad at Cape Canaveral Space Force Station, Florida.

The main engines, each producing more than a half-million pounds of thrust, accelerated the rocket past the speed of sound in about a minute-and-a-half. Three minutes into the flight, the booster switched off its engines and fell away from New Glenn’s upper stage, powered by two BE-3U engines burning liquid hydrogen and liquid oxygen.

New Glenn’s first stage continued a downrange parabolic arc, briefly soaring into space before guiding itself toward Blue Origin’s landing platform in the Atlantic Ocean nearly 400 miles southeast of Cape Canaveral. Reigniting its engines for two braking burns, the booster settled onto the ship for a smoky but on-target touchdown less than 10 minutes after liftoff.

The landing marked the end of the second flight for this booster, named *Never Tell Me The Odds*, after debuting with a good launch and recovery on Blue Origin’s previous New Glenn

mission in November. Blue Origin, founded and owned by Amazon’s Jeff Bezos, has landed and reused its smaller New Shepard suborbital booster numerous times, but New Glenn surpasses New Shepard in difficulty and scale. It flies higher, travels faster, and is three times the height of the New Shepard.

Technicians installed new engines on the booster for Sunday’s flight, but the Blue Origin intends to reuse the engines from the November launch on future New Glenn missions, according to Dave Limp, the company’s CEO.

New Glenn allows Blue Origin to reach into a broader market for launches to low-Earth orbit and beyond. SpaceX has shown it can recycle a Falcon 9 booster for reflight in just nine days, and launch Falcon 9s five or more times in one week using a fleet of reusable boosters and three active launch pads. Blue Origin officials expect reusing New Glenn boosters will unlock a vastly faster launch rate for themselves.

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