

Excerpts from THIS NEW OCEAN, a history of Project Mercury, show that the deployed balloon experiment on MA-7 in May 1962 (and MA-9 a year later) was not intended for tracking exercises or any other rendezvous/proximity operations tasks, but was an eyeball visibility test while tethered. However, it WAS the first object deployed from a manned vehicle.

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The Fisher panel first met at Cape Canaveral on April 24, 1962, and decided to emphasize five suggested experiments: releasing a multi-colored balloon that would remain tethered to the capsule, observing the behavior of liquid in a weightless state inside a closed glass bottle, using a special light meter to determine the visibility of a ground flare, making weather photographs with hand-held cameras, and studying the airglow layer—for which Carpenter would receive special training. The tethered balloon was a 30-inch mylar inflatable sphere, which was folded, packaged, and housed with its gas expansion bottle in the antenna canister. The whole balloon package weighed two pounds. Divided into five sections of different colors—uncolored aluminum, yellow, orange, white, and a phosphorescent coating that appeared white by day and blue by night—the balloon was to be cast off near perigee after the first orbital pass to float freely at the end of a 100-foot nylon line. The purposes of the balloon experiment were to study the effects of space on the reflection properties of colored surfaces through visual observation and photographic studies and to obtain aerodynamic drag measurements by use of a strain gauge.⁶⁹

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MA-7:
Although his fuel usage was high during the second circumnavigation, Carpenter still managed to continue the experiments. Just as he passed over the Cape, for example, an hour and 38 minutes from launch, Carpenter deployed the multicolored balloon. For a few seconds he saw the confetti spray, signaling deployment. Then, as the line lazily played out, he realized that the balloon had not inflated properly; only two of the five colors—orange and dull aluminum—were visible, the orange clearly the more brilliant. Two small, earlike appendages about six to eight inches each, described as “sausages,” emerged on the sides of the partially inflated sphere. The movement of the half-inflated balloon was erratic and unpredictable, but Carpenter managed to obtain a few drag resistance measurements. A little more than a half hour after the balloon was launched, Carpenter began some spacecraft maneuvers and the tether line twined to some extent about the capsule’s antenna canister. Carpenter wanted to get rid of the balloon and attempted to release it going into the third orbit over the Cape, but the partially successful experimental device stayed doggedly near the spacecraft.⁶⁷

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MA-9:
Also on his sixth orbit, after nine hours in space, the astronaut set his cameras, attitude, and switches to deploy a tethered balloon, similar to the one tried on MA-7, for aerodynamic studies of drag and for more visual experiments. The balloon, a 30-inch-diameter Mylar sphere painted fluorescent orange, was to be inflated with nitrogen and attached by a 100-foot nylon line to the spacecraft antenna canister; a strain gauge in the canister should be able to measure the differences in pull on the balloon at apogee (166 miles) and perigee (100 miles). Cooper carefully went through his checklist, then tried to eject the balloon package, but nothing happened. He tried again, and still nothing happened. Because the antenna canister was later lost, no one ever knew why the tethered balloon failed to eject. But the second failure of this experiment was more severely disappointing than the first.

Except from THIS NEW OCEAN, a history of Project Mercury, show that the deployed balloon experiment on MA-7 in May 1962 (and MA-8 a year later) was not intended for tracking exercise or any other unambiguously operations tasks, but was an orbital vehicle. However, it WAS the first object deployed from a manned vehicle.

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The F-4B plane first met at Cape Canaveral on April 24, 1962.
to maintain the suggested experiment...
would remain tethered to the...
weights were inside a closed...
the stability of a ground...
control and tracking the...
trial training. The tethered...
was folded, packaged, and...
center. The whole balloon...
extent of...
preparations...
had to be cut off...
end of a 100-foot...
study the effects of...
visual observation and...
measurements by one of a...
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11 "Project Mercury Mission Directive for Mercury-Atlas Mission 7 (MA-7, Spacecraft 18)," NASA Project Mercury working paper No. 222, April 9, 1962; "Postlaunch Memorandum Report for MA-7"; *Results of the Second United States Manned Orbital Space Flight, May 24, 1962*, NASA SP-6 (Washington, 1962), 11-13. In the order listed in the text, the experiments were proposed by the Langley Research Center, Lewis Research Center, Massachusetts Institute of Technology Instrumentation Laboratory, the Weather Bureau, and Goddard Space Flight Center.

12 "Postlaunch Memorandum Report for MA-7." Shortly after retrofire the balloon disappeared, and about seven minutes later, Carpenter lost sight of the tether.

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