

PAPER MATE

CAPRI MARK III*

ALL
NEW
FROM
TIP
TO CLIP!

only
\$2.49

In your choice of eight
new, modern colors.



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FOR FATHERS DAY, GRADUATIONS,
BIRTHDAYS—ANY GIFT OCCASION

the **MARK III***
GOLDEN CAPRI

Jewelry finished in
ELECTROPLATED GOLD **\$2.95**
in Attractive Gift Box

YOU HAVE
2 POINTS
2 INK
SUPPLIES!

AND
THEY'RE
PIGGY-
BACK!



What is a satellite?

It's the payload of a multistage missile, containing instruments for researching outer space. Where a *Dart* is thrown 1,000 yards and an ICBM 5,000 miles, a satellite is thrown so hard it keeps right on going. What happens is that it is thrown out of the earth's dense atmosphere and given another burst of speed in space, enough to balance the pull of gravity.

For example, let's follow a flight of the Navy's *Vanguard*, which launched America's second satellite. Unlike the *Jupiter-C*, which adapted missiles originally built for military purposes, the three-stage *Vanguard* was built from the ground up as a satellite launcher.

exposing the third stage and the satellite.

After burnout the whole assembly coasts to an altitude of 300 miles. There a rocket-powered turntable spins the third stage. Special reverse rockets slow down the second stage, and the third stage coasts clear.

When the third stage's path is roughly parallel to the earth's surface, a delay fuse ignites its engine, which powers the satellite to a speed of 18,000 m.p.h. At burnout the satellite is sprung loose by a special explosive spring.

The path of the assembly when the third stage starts burning, and its speed at burnout are critical for a successful orbit. If it's still going away from the earth when ignited, the satellite will make a narrow

GUARANTEED NOT TO SKIP ON ANY SURFACE!



WON'T SKIP OVER GREASE SPOTS,
HAND PRINTS, OR FINGER PRINTS
ON PAPER... WON'T EVEN SKIP
OVER A SMEAR OF BUTTER



What's the secret? Paper Mate's
new writing formula with

DETERGENT ACTION



The Capri Mark III* cleans its own
path through grease spots,
handprints and fingerprints on
paper... ends skipping forever.

Paper Mate's new formula with detergent action literally cuts a path through things that cause ordinary pens to skip—slick surface film, oily fingerprints, you name it! Detergent action is your guarantee of skip-free writing everytime on any writing surface!

The first stage has a liquid-rocket engine (kerosene fuel, liquid-oxygen oxidizer). The second stage contains a liquid-rocket engine (hydrazine fuel, nitric-acid oxidizer) and the *Vanguard's* inertial-type guidance system. The third stage (solid-rocket engine) and the satellite are mounted inside the nose cone of the second stage. The first two stages are steered by moving the engines. The third stage is not steered, but is given directional stability by spinning it like a rifle bullet.

When launched, the first stage powers the *Vanguard* (straight up at first, then on a curving path) to an altitude of 35 miles and a speed of 4,000 m.p.h. At burnout, six explosive bolts separate the first stage, and the second-stage engine is automatically ignited, powering the missile to an altitude of 130 miles and a speed of 9,000 m.p.h. During this time the nose cone drops off,

semi-orbit, flying out into space, then turning too sharply and flying right back at the earth, burning up when striking the atmosphere. If it's pointed back toward the earth when it begins burning, it will re-enter the atmosphere almost immediately with the same result.

If its speed is too slow (much less than 18,000 m.p.h.), it won't offset gravity and will start "scraping" the atmosphere, slowing down even more. If its speed is too fast (more than 25,000 m.p.h.), the assembly will fly right on out into space. Future interplanetary missiles, incidentally, must achieve this "escape" velocity.

What's next?

The moon and Mars. Experts claim that, with more powerful missiles than the first satellite launchers, it can be done—and soon.

All aboard!

*PAPER MATE'S NEW MODEL CAPRI WITH SKIP-FREE WRITING REFILL™
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