Special memory used
Apollo computers built by Instrumentation Lab

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Core rope Memories
Guidance computers employ
high-density fixed core rope mem-
ories — tiny iron-nickel cores
wove together with thousands of
copper wires and encapsulated in
plastic. This type of memory has
the advantage of being permanent
and virtually indestructible. Since
a flight determines its own
receiving sequence, all flight pro-
grams must be written before the
memory can be constructed.

Guidance and navigation sys-
tems in the command and lunar
modules are very similar and con-
sist of three principal subsystems:
an inertial measurement unit of
gyroscopes and accelerometers
isolated from spacecraft motion
by nonmagnetic spherical gimbals
providing a stable on-board frame of
reference in which spacecraft
position is tracked; an optical sub-
system that enables astronauts to
make navigational fixes in space
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earth and moon; and the computer
subsystem.

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Core rope memory has many
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the fixed memory portion has a
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Dr. Richard H. Battin, Associate
Director of the Instrumentation
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development of Flight programs for
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New computer
High-speed computers are used to
generate and verify mission
programs. The machine which
handles these chores is an IBM
360/75, which recently replaced two
Honeywell 1800 machines.

After the programs have been
verified, computers produce reels
of perforated tapes which are sent
to the Raytheon C., to control
and check the weaving machines.
With all, it takes approximately
one year to compile an Apollo flight
guidance program.

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