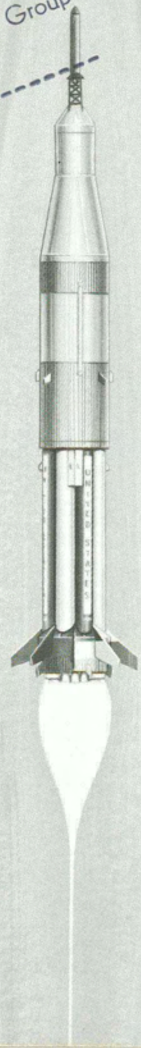
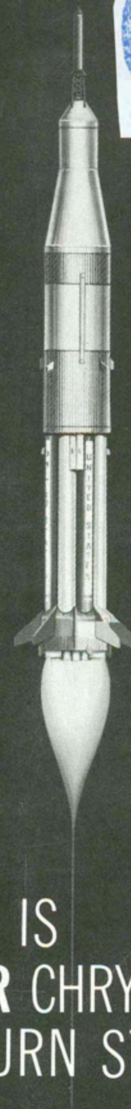
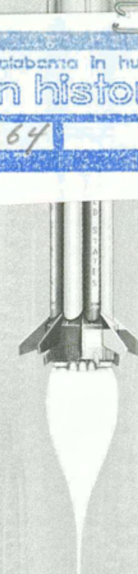


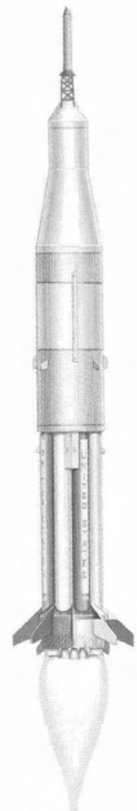




THIS IS **YOUR** CHRYSLER SATURN STORY

SPACE DIVISION **CHRYSLER** CORPORATION

A part of the NASA/CCSD
Manned Flight Awareness Program



THIS IS **YOUR** CHRYSLER SATURN STORY

SPACE DIVISION CHRYSLER CORPORATION

PRESIDENT'S MESSAGE

H.D. LOWREY

This booklet is a part of the Chrysler Corporation Space Division Manned Flight Awareness Program. You will be seeing and hearing more about this program.

Each and every one of us, and our families are directly involved in a great national effort, an unprecedented adventure by man -- the landing of men on the moon. Each of us is an important man doing an important job making products on which Project Apollo astronauts will bet their lives. Every part of every booster must be engineered, manufactured, installed and tested so thoroughly that we would bet our own lives on its faultless performance. We must make these parts right the first time -- the opportunity to correct a mistake may never occur.

Use this book to explain to your family, friends, and neighbors about the Chrysler Corporation Space Division and the work that you do here.

I ask that everyone renew the acceptance of his job responsibilities. Do your work to the best of your abilities. Never be slow to ask for guidance if you are unsure. I assure you that I will personally guide you if the need arises.

FOREWORD

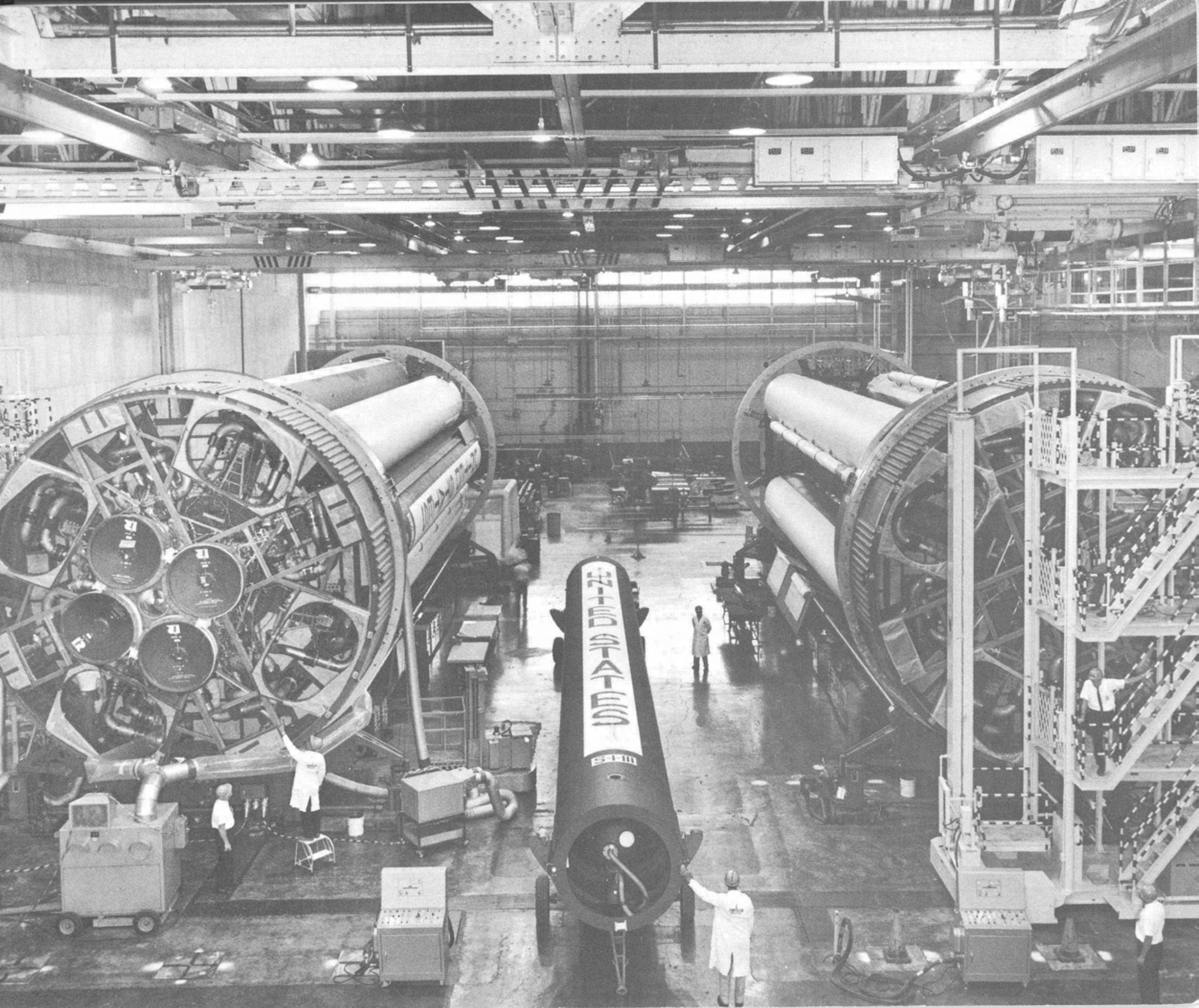
In a huge manufacturing facility at New Orleans, Louisiana -- the Michoud Operations -- Government and private industry are joined in the building of the world's largest space booster currently in production, the Saturn I/IB. Your job with the Chrysler Corporation Space Division is to assist the National Aeronautics and Space Administration (NASA) in its monumental task.

We build the boosters for NASA, our customer, whose George C. Marshall Space Flight Center in Huntsville, Alabama, directs the work at Michoud. The director of this center, Dr. Wernher von Braun, has a team of the best rocket scientists in the business. As of October, 1964, NASA has designed, built and successfully launched seven Saturn I vehicles. This record is unequalled. There are also NASA personnel at Michoud and at Cape Kennedy. These people work side by side with our people on the production floor, inspecting, directing, and accepting our product, the booster. There are other NASA people here doing the many administration, engineering and other tasks that must be done at such a large facility. The NASA people are here to help us deliver our product on time and as reliable as humanly possible.

Although you are aware of your particular responsibility in this great national effort, it may be difficult to comprehend the scope of the Saturn Program from day-to-day observations. The purpose of this booklet is to describe the Saturn Program and give you a better understanding of its size and complexity. You are one of about 300,000 people working on the Saturn Program.

TABLE OF CONTENTS

CHRYSLER AND THE SATURN


UNITED STATES
S-I-III

"Spacecraft and spacecraft components do not lend themselves to normal assembly line techniques. They are, instead, "manufactured" in the original sense of the term — made by hand. Our progress in space does not demand that hundreds, or thousands, or millions of spacecraft come rolling off the production lines. We are satisfied with only a few — provided that each and every component in every one of them works perfectly. Thus the space program of necessity stimulated a return to craftsmanship, with special measures to stir the interest of the individual worker in perfection of accomplishment and pride of membership in a select group to whose product the success of a mission or life of an astronaut may be entrusted."

From a speech: "Why Go to the Moon?"
by Hugh L. Dryden, Deputy Administrator
National Aeronautics and
Space Administration

"The emphasis in our Manned Flight Awareness Program is on the word awareness. . . NASA Headquarters is behind the Manned Flight Awareness Program; I am personally behind it and our entire Marshall team is behind it. We want you and your company behind it."

Remarks of Dr. Wernher von Braun
Director of Marshall Space Flight Center
to the Manned Flight
Awareness Program Conference
September, 1964

CHRYSLER AND THE SPACE AGE

With the launch and orbit of Russia's Sputnik I, the Space Age began for both the United States and Chrysler Corporation.

The United States, at that time, had developed a variety of military missiles and had modified several of these missiles for space research. The Chrysler-built Redstone was lengthened and mated with solid fuel upper stages. This vehicle, designated the Jupiter C, orbited our nation's first satellite. With further modification, the Redstone was the booster used for the two suborbital Mercury flights, manned by our first astronauts, Shepard and Grissom. Chrysler's Jupiter booster was also modified by adding solid fuel upper stages and, as Juno II, orbited a number of the Pioneer and Explorer satellites.

It became obvious, however, that a booster with more than a million pounds of thrust would have to be developed in order to enter into the peace time exploration of space.

Research and development of a single rocket engine with more than a million pounds of thrust would have required years - years of precious time the United States could not afford to lose in its race into space. The idea of producing such a powerful booster by clus-

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1. The Army Redstone ballistic missile
2. The Jupiter-C space vehicle

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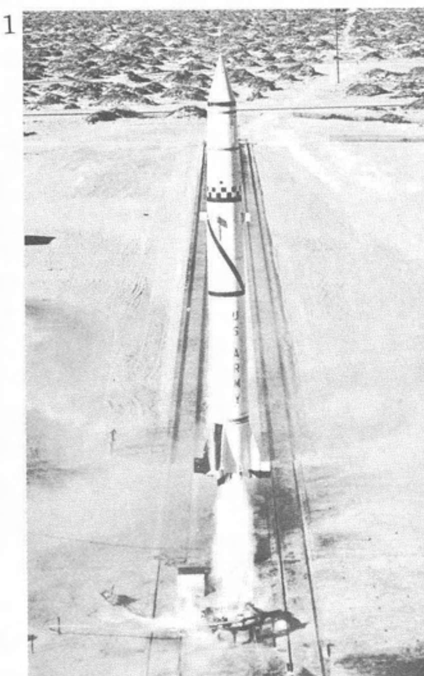
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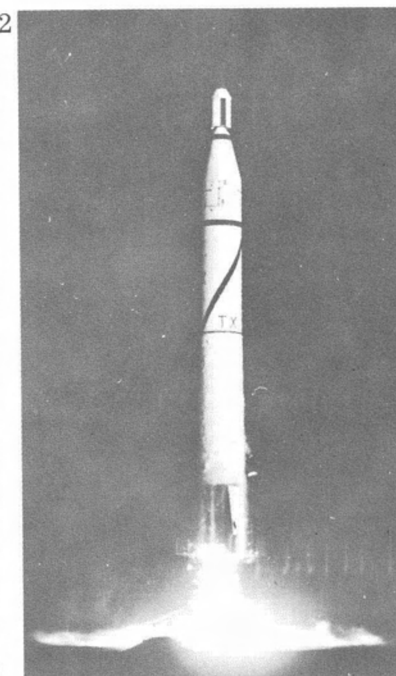

tering already proven tanks and engines from the Redstone and Jupiter missiles was advanced and quickly implemented.

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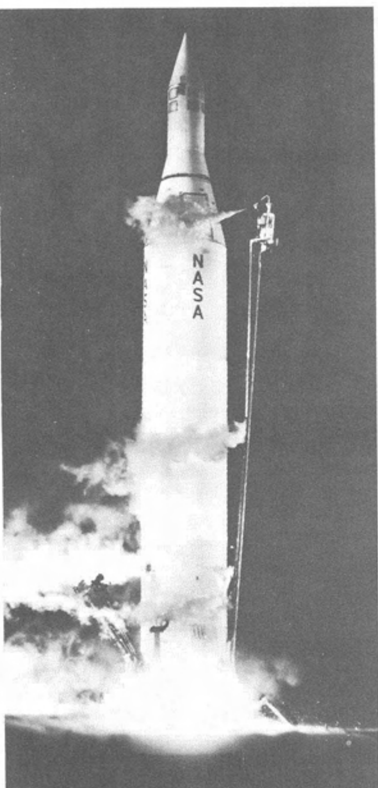
3. The Juno II space vehicle

4. The Mercury-Redstone vehicle



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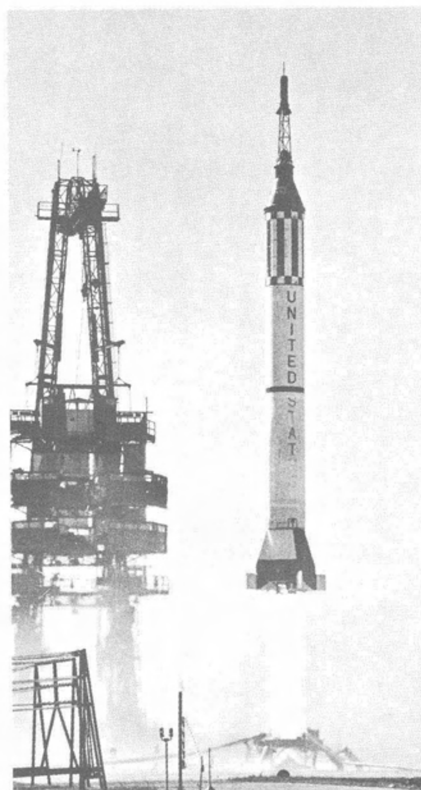

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In October, 1958, a Government order to develop an eight-engine, clustered-tank booster was issued. Three years later on October 15, 1961, NASA successfully launched the first Saturn I.

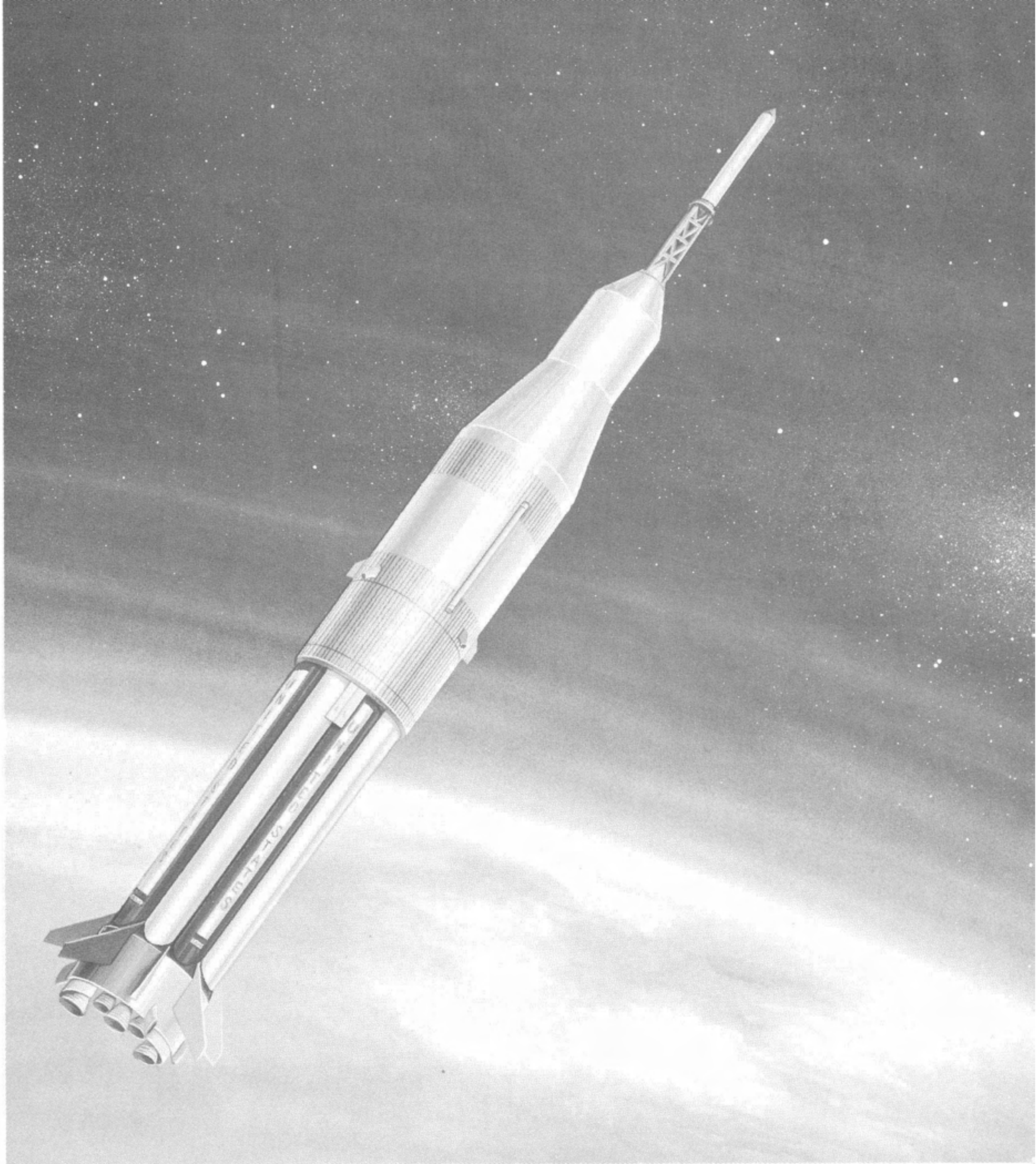
Chrysler Corporation, with its experience on the Redstone and Jupiter programs, was selected to build the Saturn I booster. Following this contract award in December 1961, the Space Division was formed and a small group of key personnel moved into the Michoud Plant at New Orleans. Within two years, the first Chrysler-built Saturn I booster was assembled and ready for test.

Today, you are one of nearly 5,000 employees of the Chrysler Corporation Space Division working on the Saturn Program at the Michoud plant, Huntsville, and Cape Kennedy.

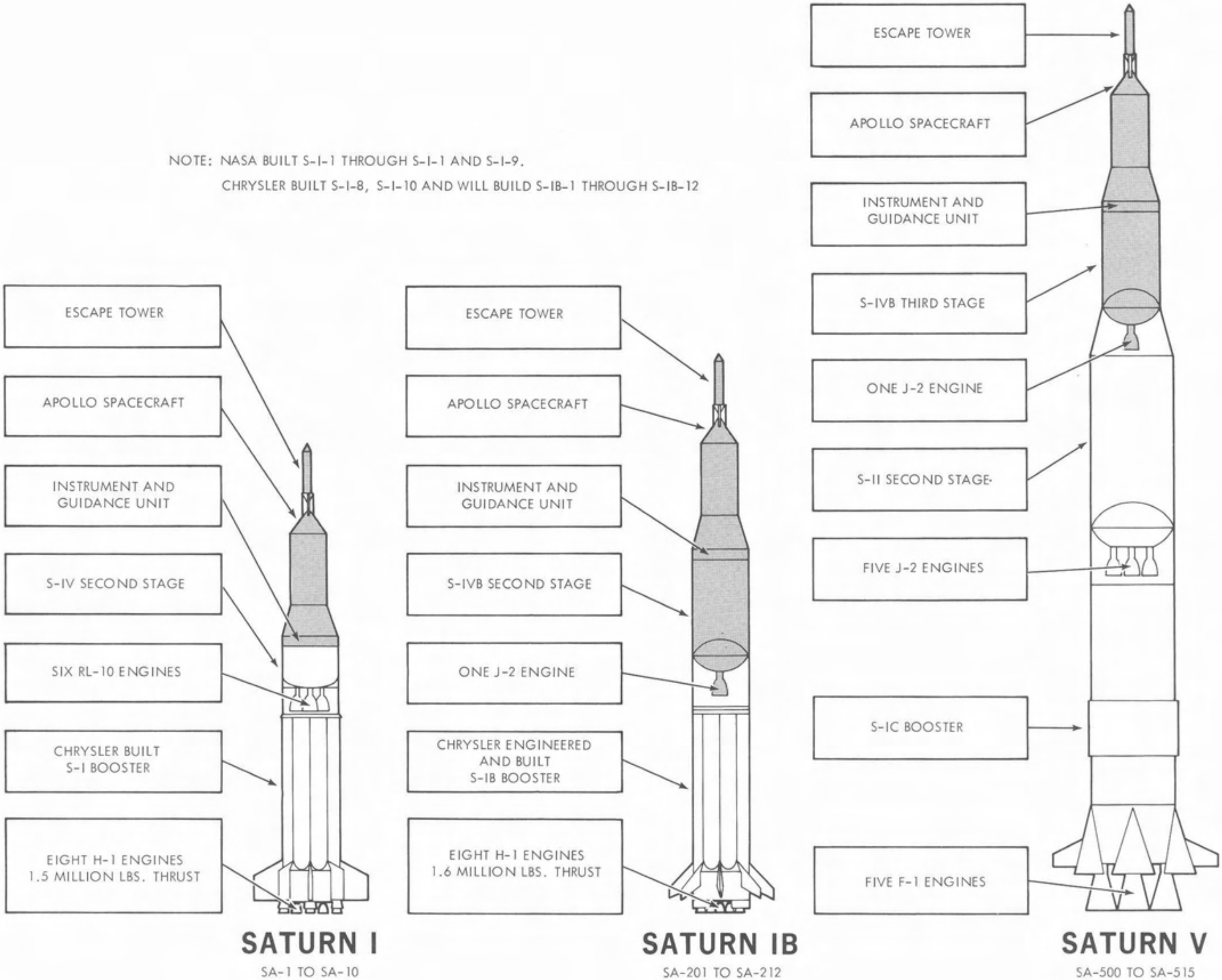
You, as a Space Division employee, can be proud of Chrysler's record in our nation's space program. No Chrysler-built booster has ever failed, a record unequalled by any other company. The greatest challenge to all of us is to maintain this record by continuing to engineer, build, test and launch the best, most reliable boosters in the industry.

THE SATURN SPACE VEHICLE

Shown here is the Saturn IB space vehicle. It is made up of three "stages" or sections. The vehicle is coasting upward in space with its first-stage engines shut down.

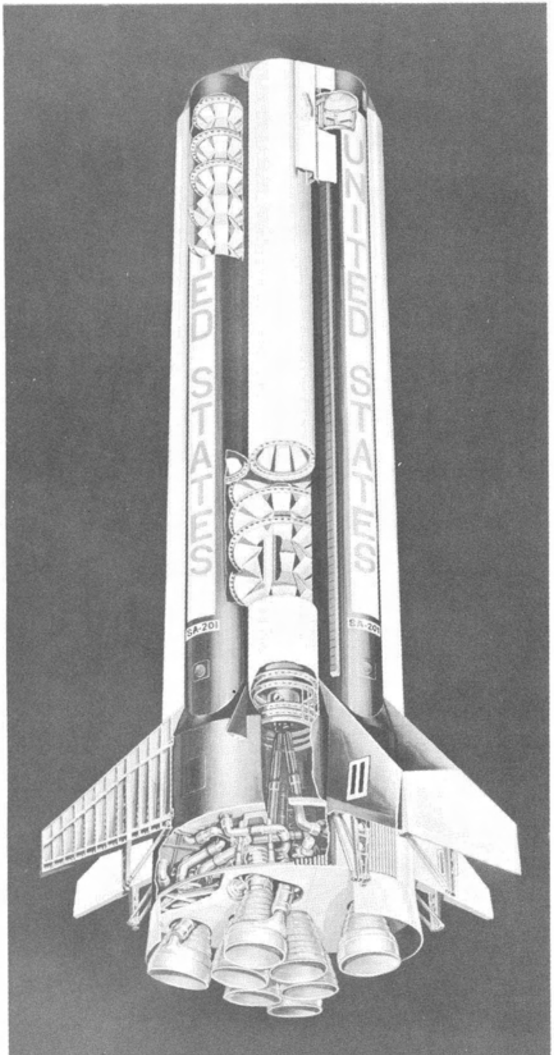


NOTE: NASA BUILT S-I-1 THROUGH S-I-1 AND S-I-9.
CHRYSLER BUILT S-I-8, S-I-10 AND WILL BUILD S-IB-1 THROUGH S-IB-12



THE SATURN FAMILY

The Saturn family has its beginning with Redstone and Jupiter. Parts that were designed, tested and proven reliable through actual flight on these missiles are today flying again on Saturn. For example, the central LOX tank is of the same dimensions as the Jupiter booster tank. The smaller tanks clustered around the central tank are the same dimensions as the Redstone booster tanks. This approach of using flight tested and proven hardware will continue throughout the Saturn program. Saturn I with its S-IV upper stage will, after testing and improvement, become the Saturn IB with its S-IVB upper stage. The Saturn IVB in turn will be flight proven as part of the S-IB and then used on the Saturn V. This approach is also applied to the Apollo capsule which will first be flown on the S-IB, put into orbit, checked out, and only then will it be used on Saturn V. This, then, is the story of the Saturn family - a story of continuing test and development with each step contributing to the next important step.



THE SATURN IB BOOSTER

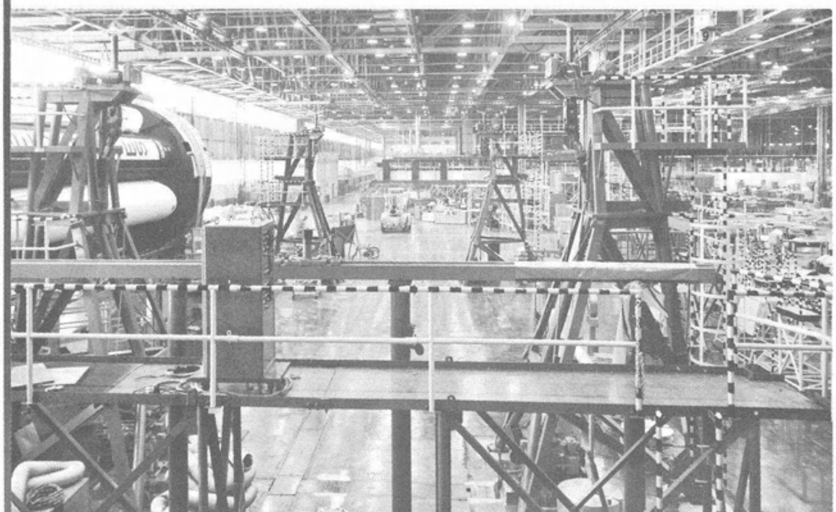
At the left is a cutaway view of the Saturn IB booster. The booster is basically a cluster of tanks holding liquid oxygen and kerosene fuels and rocket engines to provide "thrust" or push.

The center tank, almost nine feet in diameter, is the largest of the booster's fuel tanks. Four black and four white tanks, each about six feet in diameter, are alternately clustered around the center tank. The black tanks contain a kerosene type fuel, the center and white tanks contain liquid oxygen (oxygen which has been supercooled and pressurized into liquid). In each of the tanks you can see accordian-like "anti-slosh" baffles. These baffles are built into each tank to restrict the sloshing of fuel and assure that the vehicle stays in balance and under control.

The fuels flow from the tanks into common pipes. In the event an engine shuts down, the remaining engines would obtain fuel from all the tanks through these pipes.

SATURN AT MICHOUD

The manufacturing building during renovation



The same area today

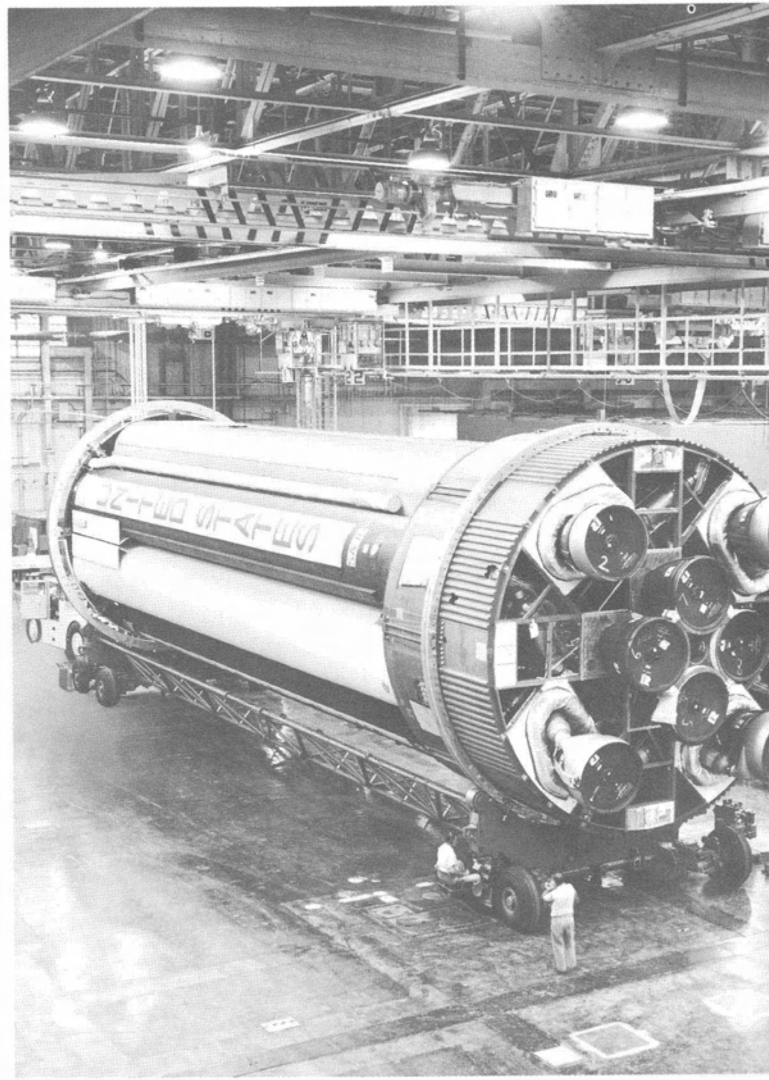
MICHOUD OPERATIONS

In September, 1961, the manufacturing facility shown on the preceding page and at the left was chosen by NASA as the site for Saturn space vehicle fabrication. The major buildings of this facility, now the Marshall Space Flight Center, Michoud Operations, were constructed during World War II for the manufacture of Liberty ships. The buildings were renovated for use by the Saturn Program contractors.

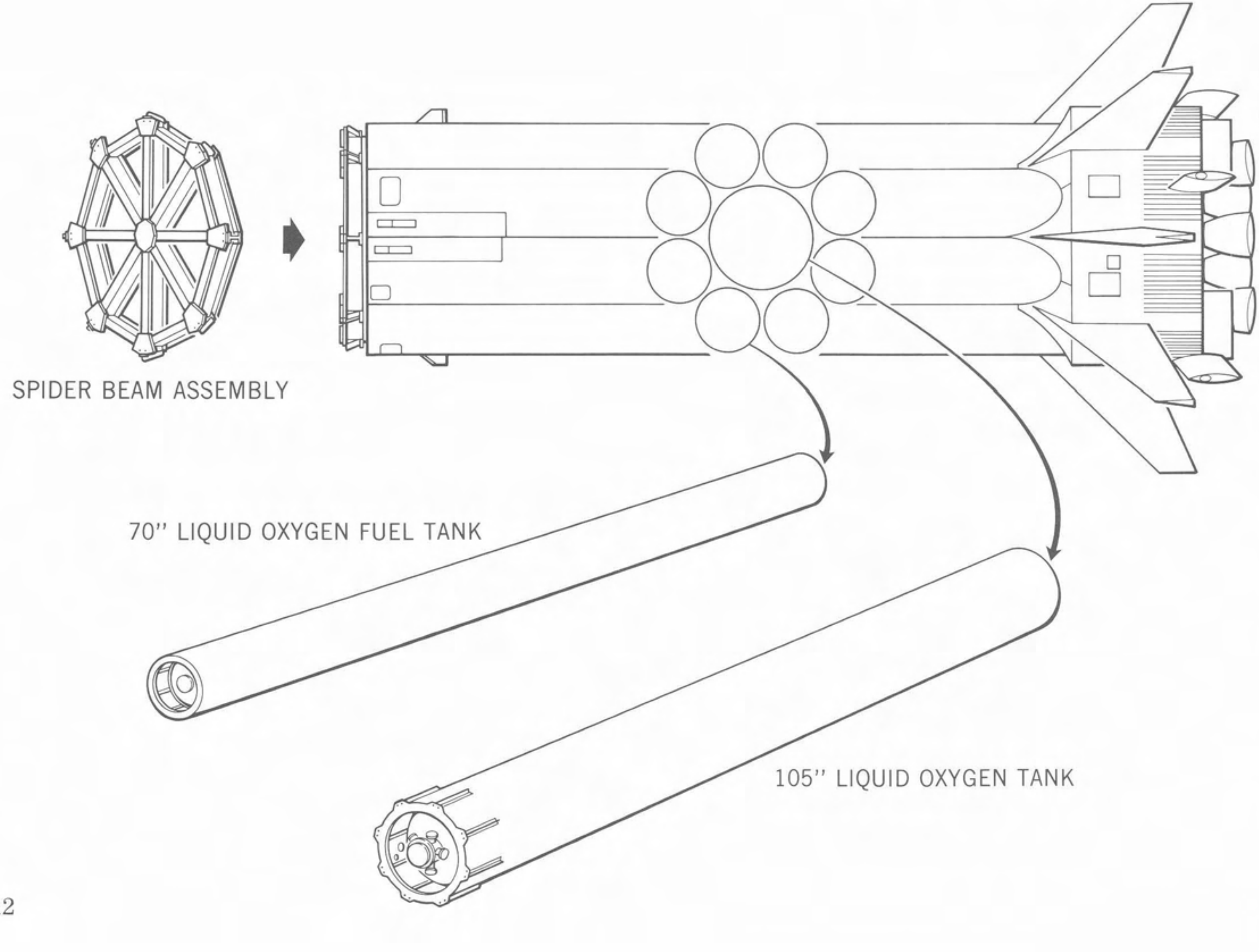
The facility now consists of two administration buildings, a large manufacturing building, and a newly constructed engineering building, all of which are fully air conditioned.

In addition to housing NASA (our customer), Michoud Operations accommodates Chrysler and Boeing, the two major Michoud Saturn contractors, and various other subcontractors supplying facilities support, food services, and data processing services.

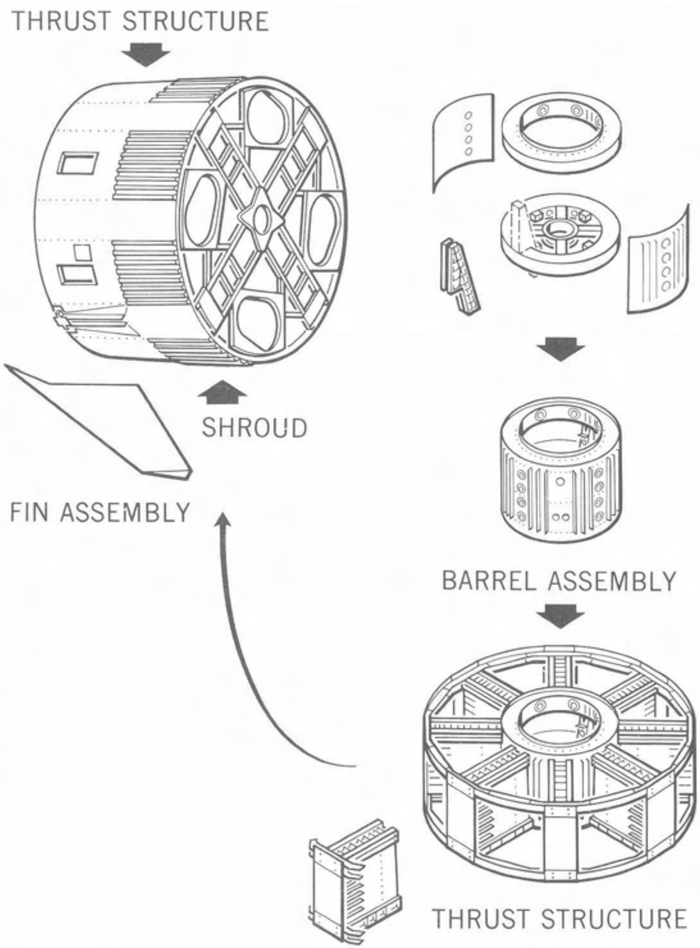
Shown at the right is our booster in the manufacturing building.



MAJOR BOOSTER



STRUCTURAL COMPONENTS



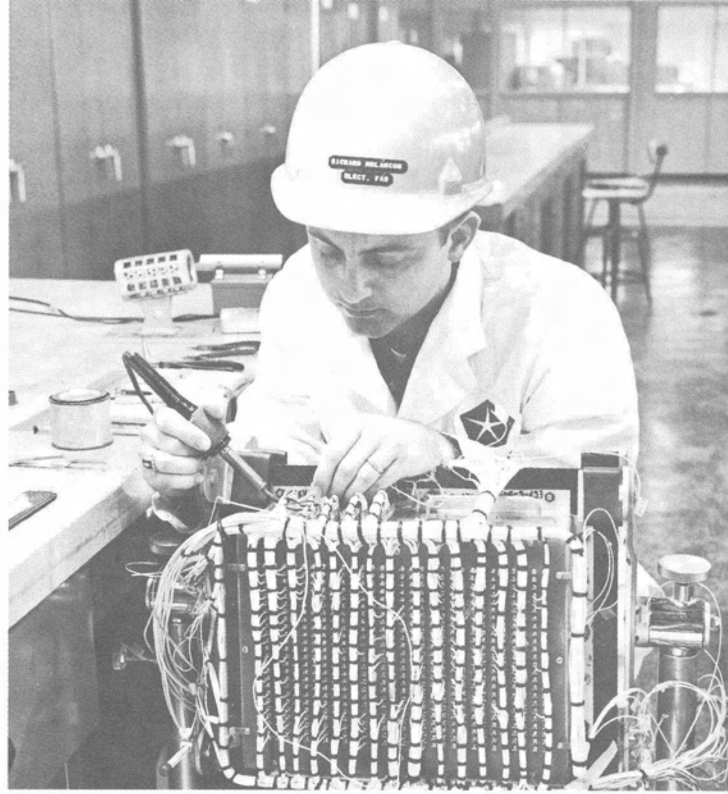
At the left is an exploded view of the Saturn IB booster.

Most of the booster's working parts are in the tail area which is composed of a thrust structure, eight rocket engines, a shroud with four engine skirts, eight fins, and the majority of the booster's mechanical and electrical systems.

The thrust structure supports the back end of the tank cluster as well as the shroud, engine skirts, and swept-back fins.

The spider beam provides support for the forward end of the tank cluster and for additional booster operation systems.

1



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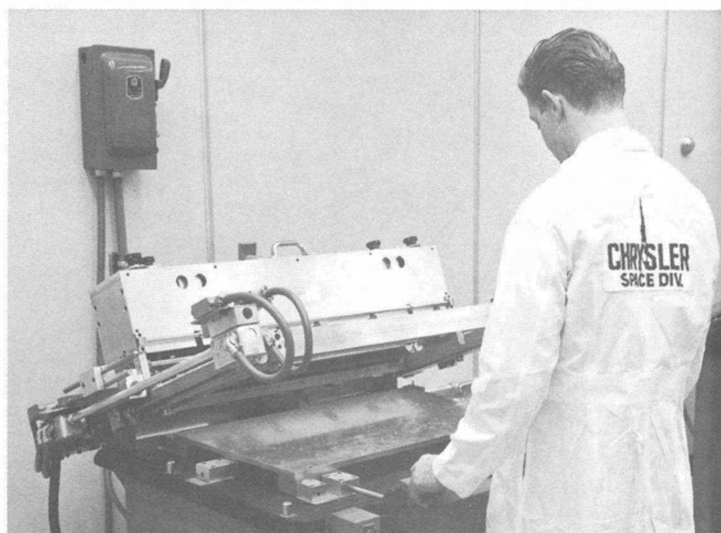
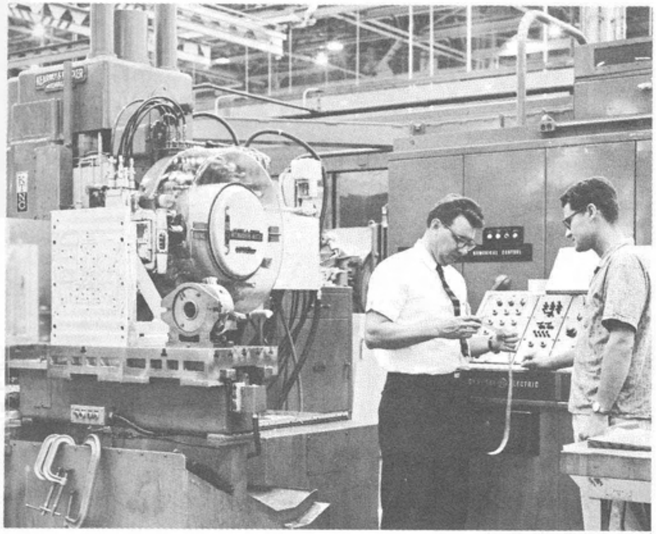


MANUFACTURING

1. Work on one of the booster's electrical distribution panels nears completion in electrical fabrication area.
2. A technician adjusts the automatic silk screen printer used to make miniaturized electronic circuits for the booster's control systems.
3. One of the booster's complex structural components is fabricated on a remote-controlled milling machine.
4. Another booster component takes form on this imposing vertical milling machine.
5. A booster engine undergoes one of the many minor modifications made by Chrysler.

3



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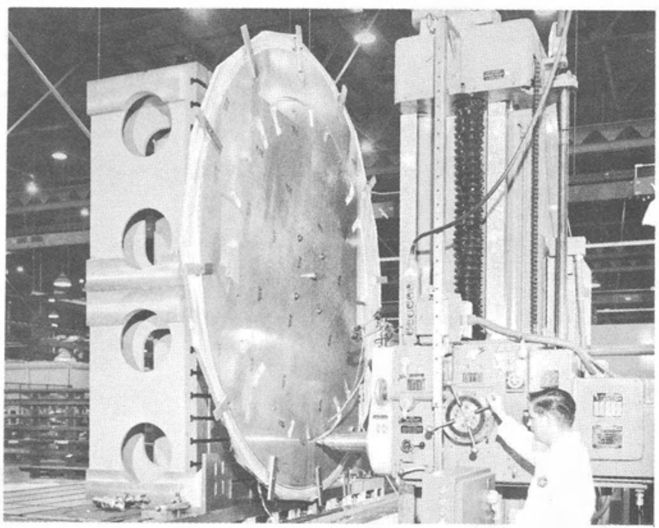

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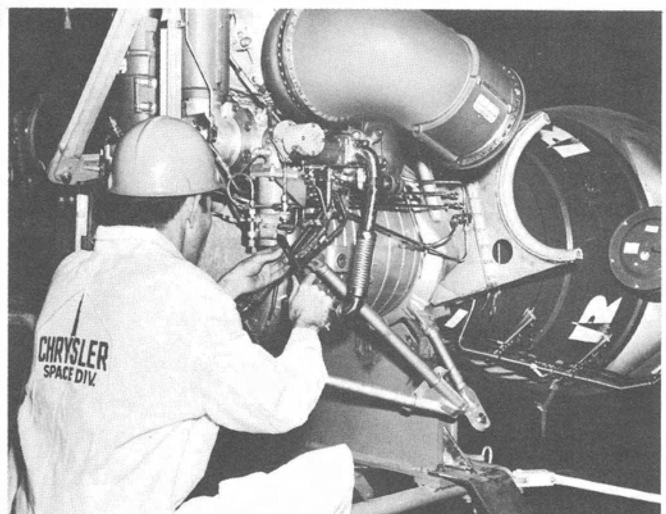

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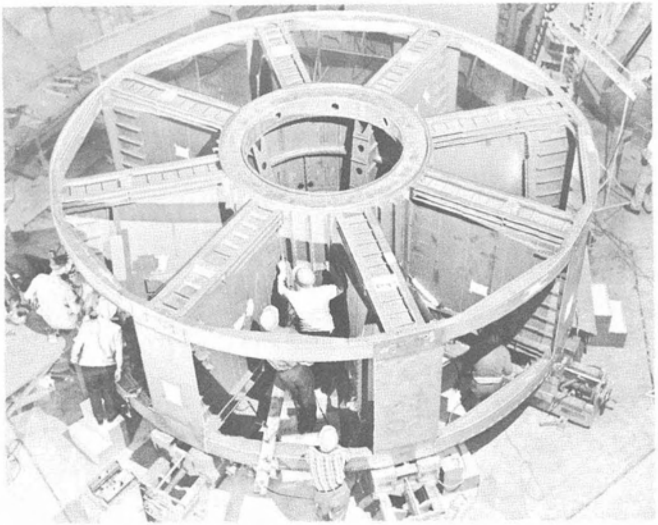

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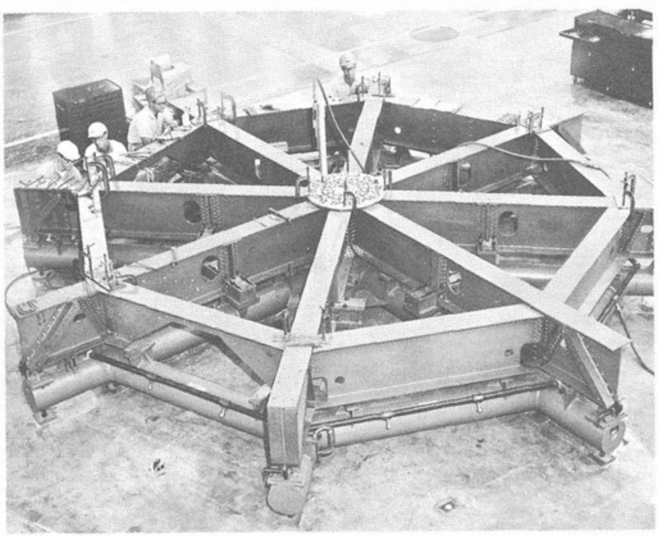


ASSEMBLY

1. Following fabrication of the booster's major structural components, assembly of the massive thrust structure begins.

2. As the thrust structure is assembled, work begins on the eight-legged spider beam.

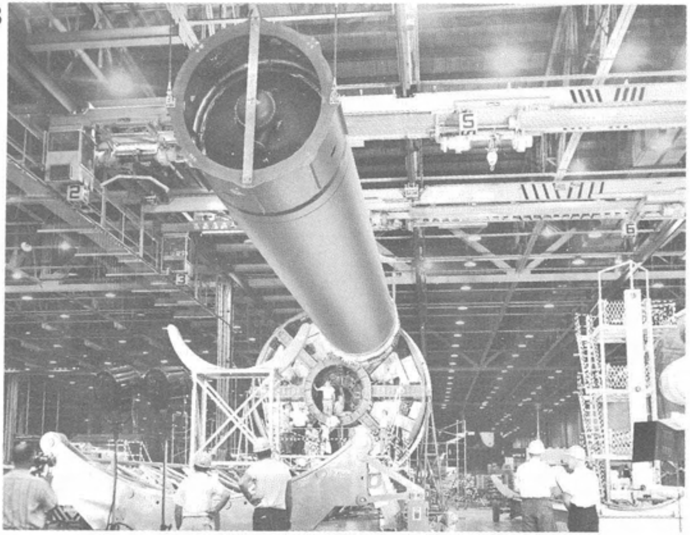
3. Once the thrust structure is assembled, it is carefully maneuvered into an upright position and the center LOX tank is secured over the barrel assembly.

4. The assembled spider beam, with its high-pressure nitrogen spheres, is then attached to the forward end of the center LOX tank.

5. This mammoth assembly is then rotated on its clustering rings and each of the eight outer tanks is positioned and secured fore and aft in the booster structure.

6. After the propellant tanks have been clustered, final operations including the installation of various tubing and wiring, measuring instruments, and rocket engines are completed and the booster is readied for final functional checkout.

3



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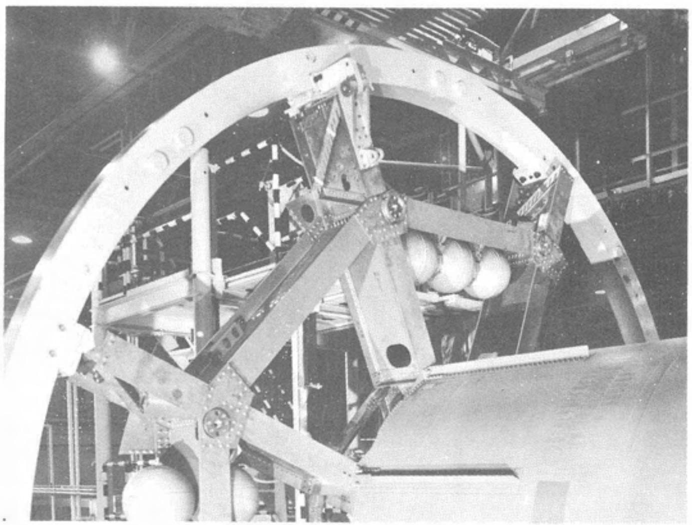

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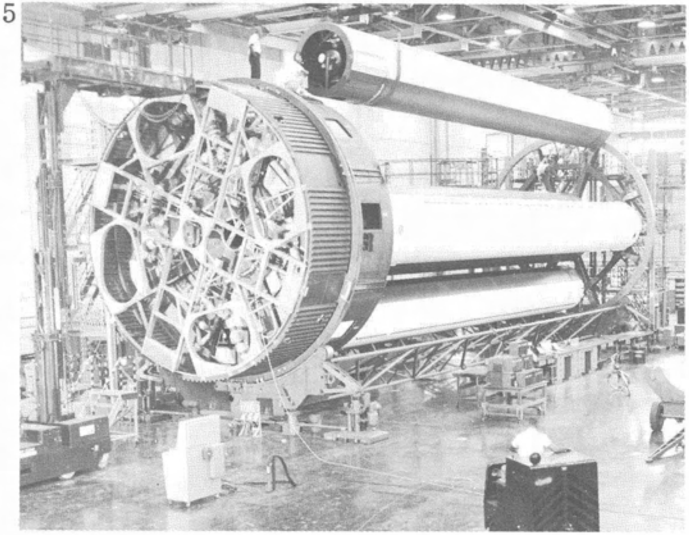

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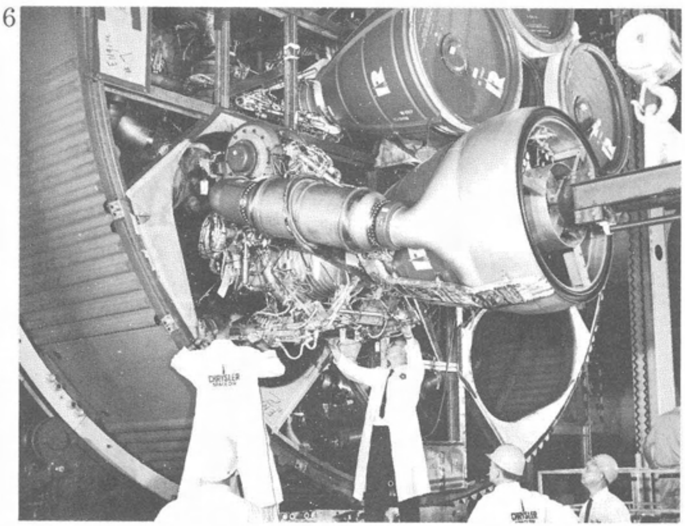


TESTING

1. Metal used in the booster's structure is strength tested here in the metallurgical lab.

2. Many of the booster's precision parts are assembled and tested in this clean room facility.

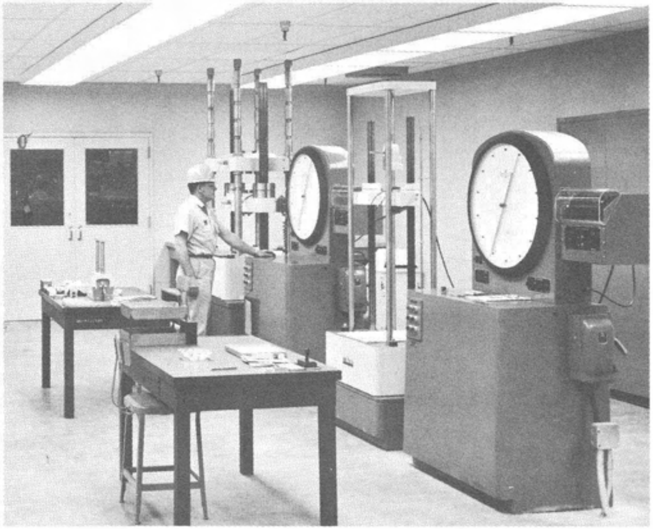
3. Completed booster components are tested here in the engineering environmental test laboratory.

4. Booster engines are pressure tested here in the engine test cell.

5. In this mockup area, various booster components are mounted and checked for physical compatibility.

6. Before the booster is shipped for static testing, a final visual check of all major booster components is made.

1



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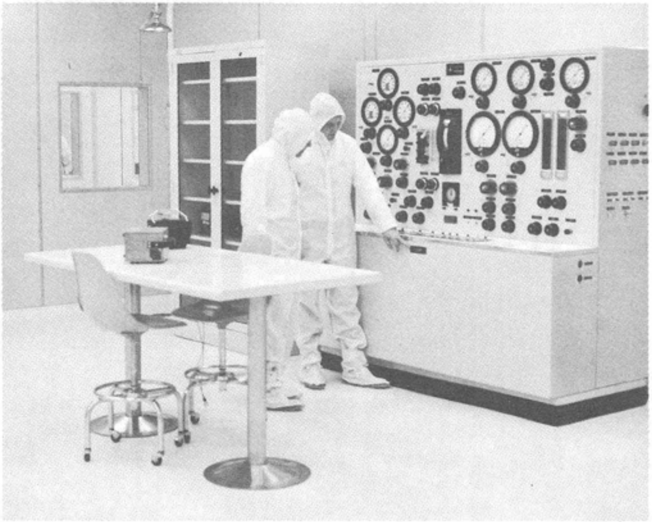

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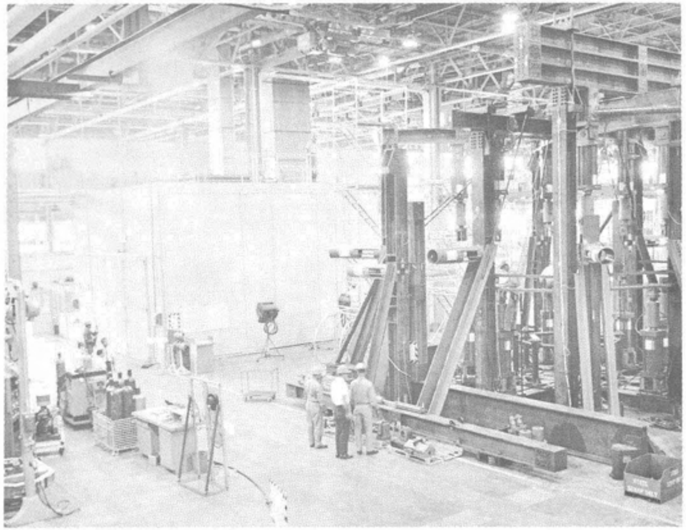

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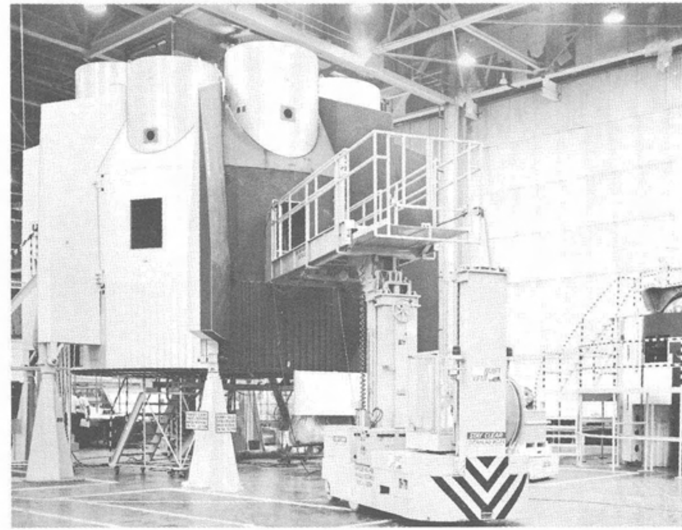

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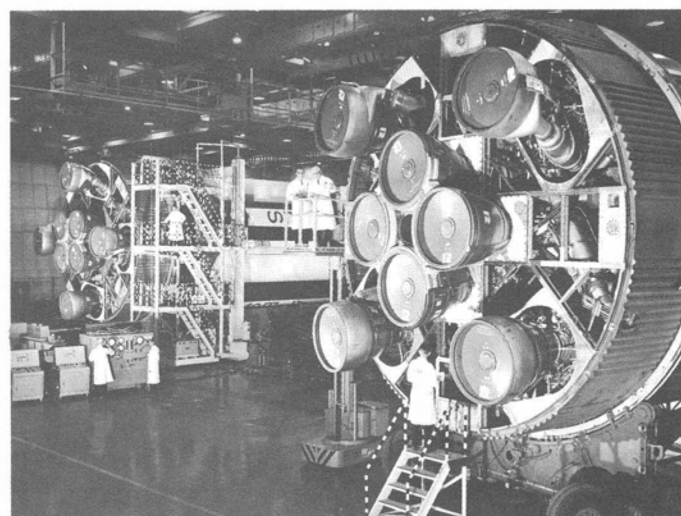

OUR FIRST BOOSTER ACCEPTANCE

Each assembled and tested booster must be accepted by NASA before leaving Michoud. At the formal acceptance ceremony for Chrysler's first S-I booster (shown at the right), NASA's Dr. Wernher von Braun observed, "Quality and reliability are things you cannot inspect into a rocket. They must be built into it . . . with an almost religious dedication and devotion to perfection . . ."

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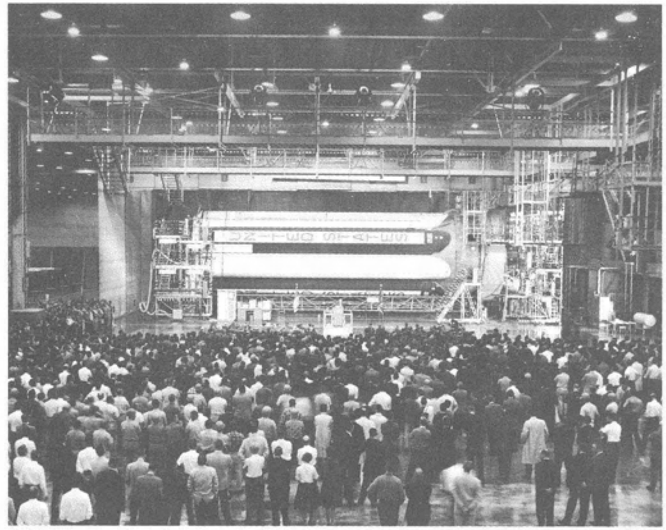
1. Chrysler Corporation Space Division personnel gather to witness the formal acceptance ceremony for the first Chrysler-built booster, S-I-8.

2. Dr. Wernher von Braun, Director of NASA's George C. Marshall Space Flight Center, and Mr. L. A. Townsend, President of the Chrysler Corporation.

1



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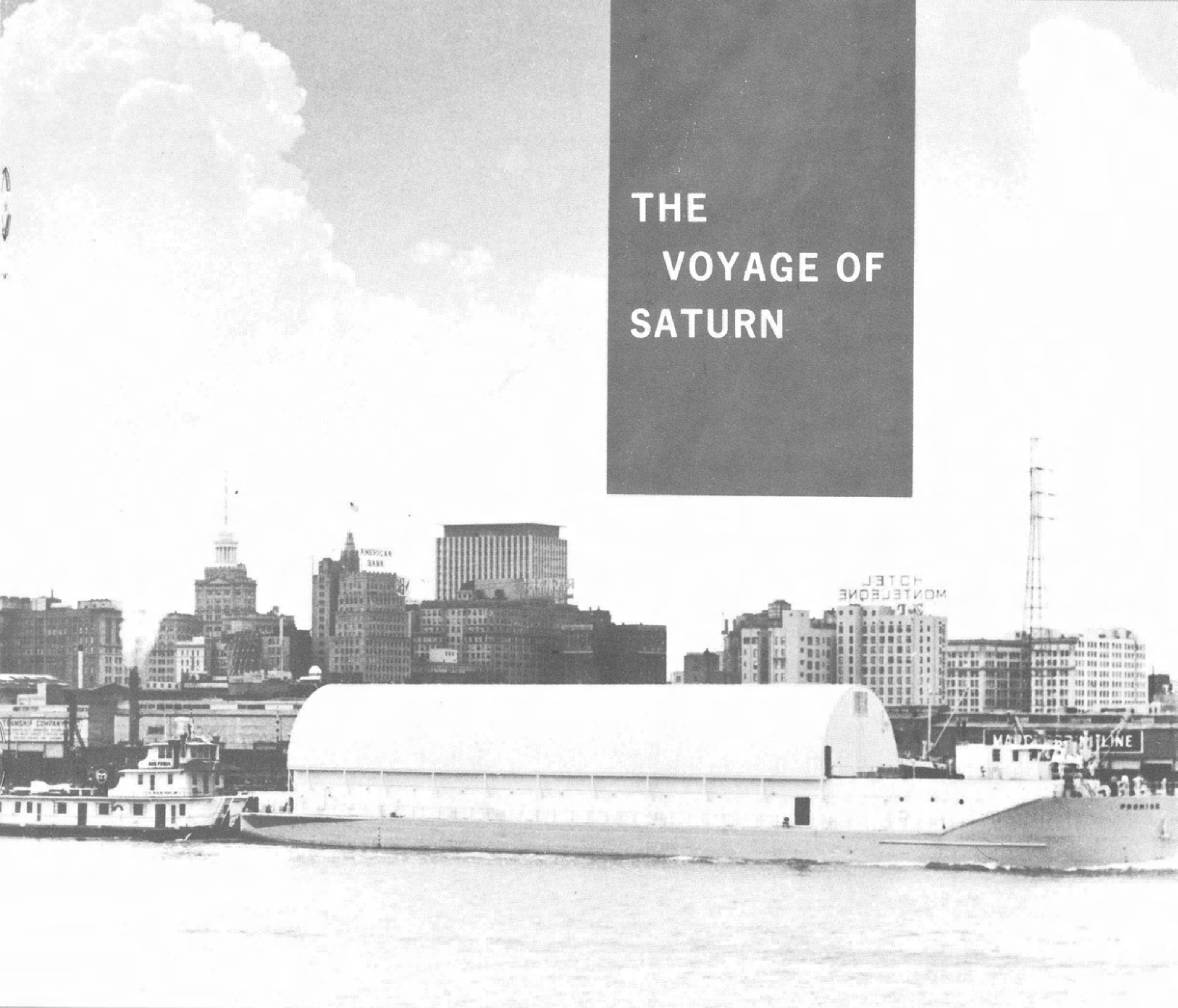
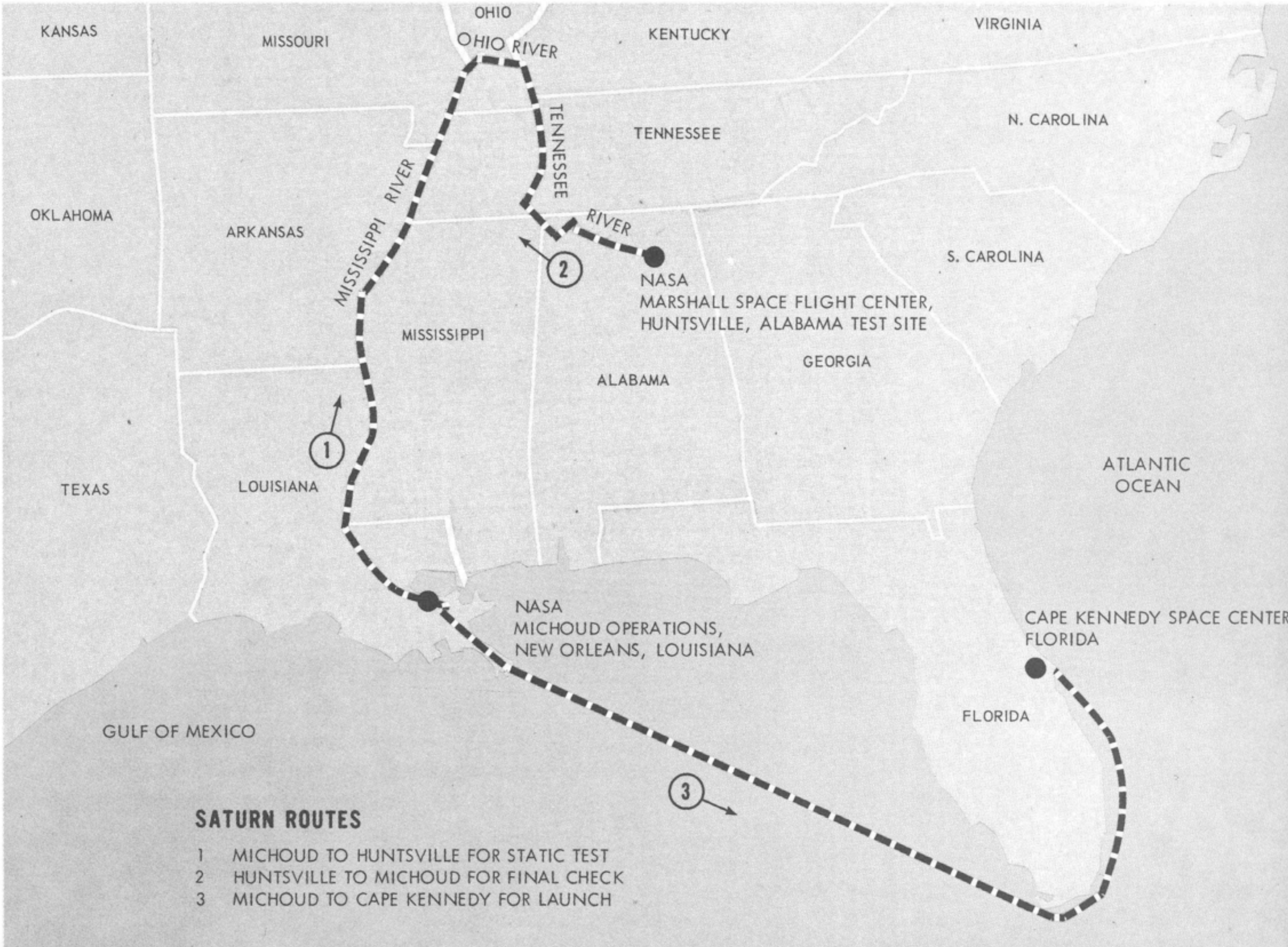
THE VOYAGE OF SATURN

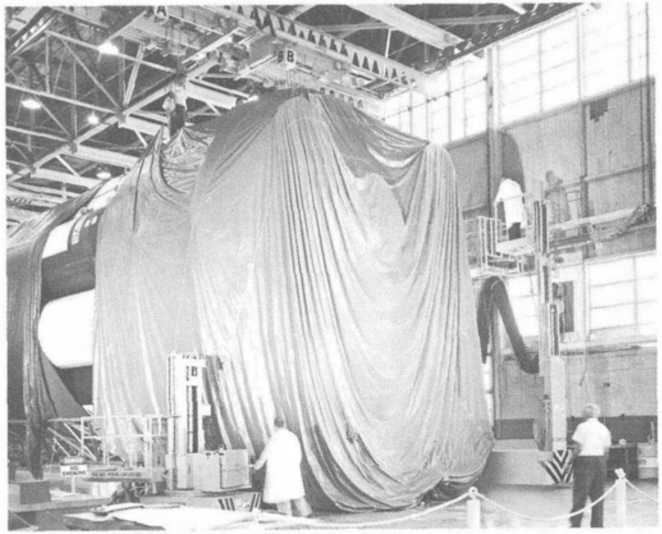




KANSAS
MISSOURI
OHIO
OHIO RIVER
KENTUCKY
VIRGINIA
TENNESSEE RIVER
TENNESSEE
N. CAROLINA
OKLAHOMA
ARKANSAS
MISSISSIPPI RIVER
S. CAROLINA
NASA
MARSHALL SPACE FLIGHT CENTER,
HUNTSVILLE, ALABAMA TEST SITE
MISSISSIPPI
GEORGIA
ALABAMA
ATLANTIC
OCEAN
TEXAS
LOUISIANA
NASA
MICHOUD OPERATIONS,
NEW ORLEANS, LOUISIANA
CAPE KENNEDY SPACE CENTER,
FLORIDA
FLORIDA
GULF OF MEXICO
1
2
3
SATURN ROUTES
1 MICHOUD TO HUNTSVILLE FOR STATIC TEST
2 HUNTSVILLE TO MICHOUD FOR FINAL CHECK
3 MICHOUD TO CAPE KENNEDY FOR LAUNCH

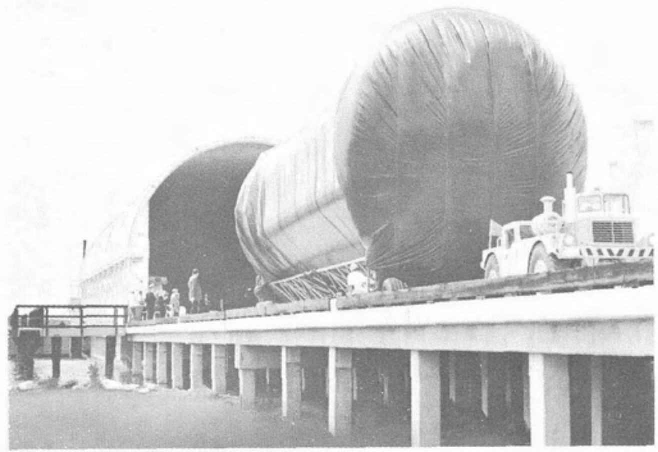
MICHOUD....
HUNTSVILLE....
CAPE KENNEDY !

After acceptance, NASA authorizes Chrysler to move the booster to Huntsville, Alabama for static firing. It is moved by barge over the water route shown at the left.

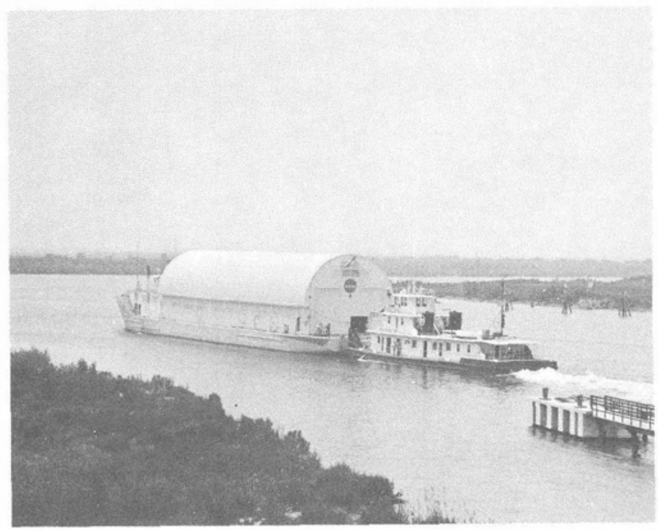


Before the booster is moved from the plant, it must be carefully prepared for its trip. The engines and all openings in the booster are sealed against dirt. Dehydrator units are attached to the fuel tanks to prevent moisture from collecting inside them. The entire booster is covered with plastic-coated cloth to protect it against the weather. The covered booster is shown at upper right.

At lower right, the booster is shown being hauled from the plant to the docking area. The booster and the old sugar mill chimney form an interesting contrast - man's oldest use of forced combustion, a chimney furnace, and his newest, a Saturn booster.



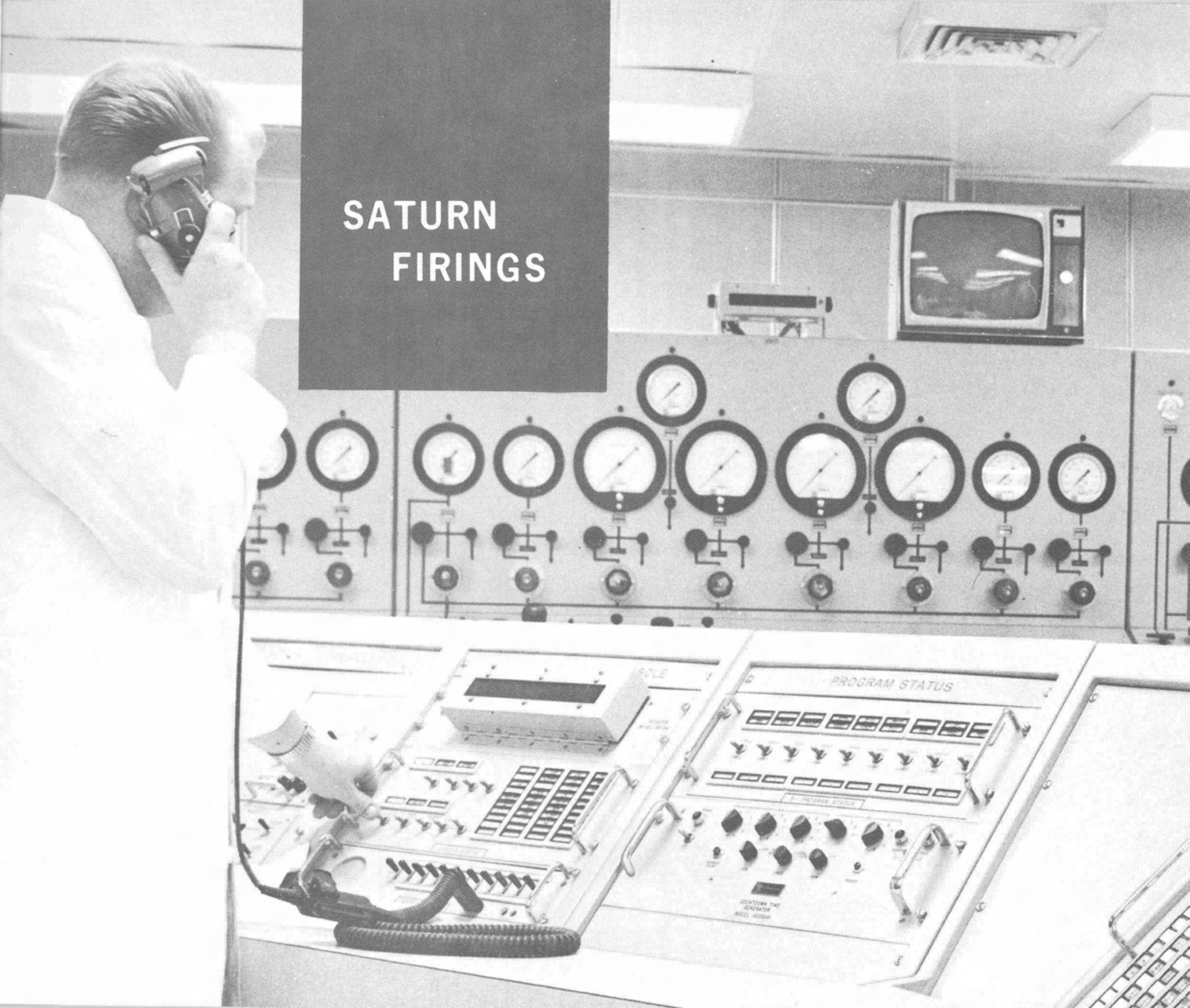
Because of the size and weight of the booster, a special barge had to be built. Over 260 feet long, this barge will support up to 2,000 tons of cargo. The booster is first rolled into the barge's special enclosure as shown on the upper right. The cover is then secured in place and from that time on the Chrysler barge crew closely monitors and maintains temperature and humidity conditions within the enclosure.

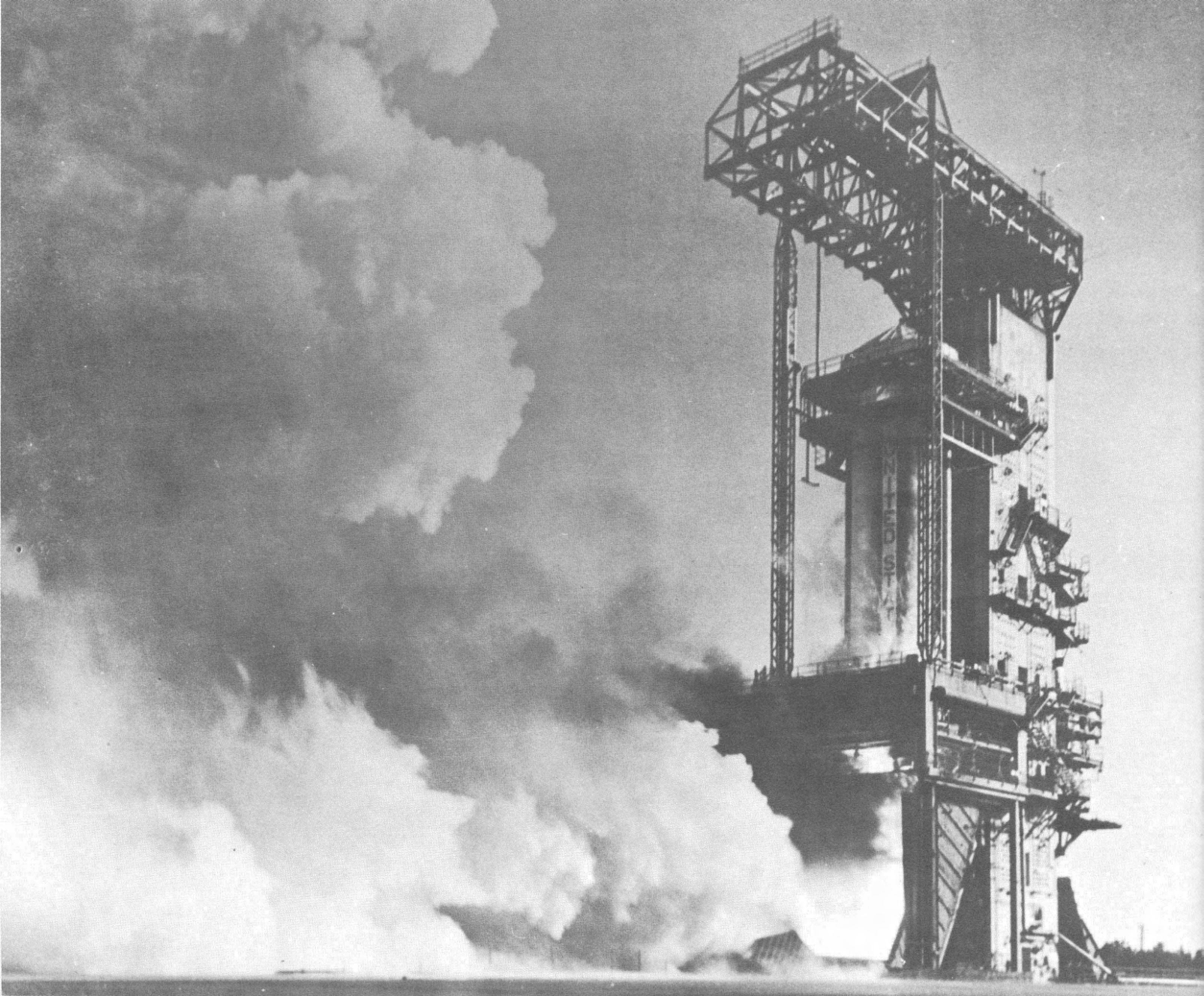


Still another interesting contrast is evident here, as man's newest and fastest means of transportation, the Saturn booster, is moved to and from its various test and launch areas by one of the oldest and slowest modes of transportation known to man, a river barge.

The barge route shown on the preceding page covers more than 3,000 miles of inland waterways and the Gulf of Mexico. As the barge is moved over this extensive route, it is accompanied at all times by a U.S. Coast Guard vessel to ensure that nothing will interfere with Saturn's eventual mission in outer space.

SATURN FIRINGS





STATIC TEST

On the NASA test stand at Huntsville, Alabama, the Saturn I/IB boosters come to life for the first time. Before this test, a booster is a towering structure of carefully engineered and manufactured parts. Once a booster is successfully static fired, then and only then, does it qualify as a reliable booster for a manned space vehicle.

After the booster is unloaded from the Michoud barge, it is transported to the test area and securely mounted in the test tower. All electrical and mechanical connections are made. All systems are checked and approved. The booster is then fueled.

Once this preparation is complete, the firing switches are thrown and the booster's engines roar to life. With all eight engines developing full power, the booster is subjected to some of the most severe stresses it will ever face - even more severe than those encountered during vehicle launch. This is due to the fact that an airborne booster can dissipate some of the forces acting upon it through movement; a rigidly restrained booster must bear the punishment of all stresses and vibrations acting upon it.

During a normal static test, the booster is fired twice. Its first firing is of short duration and establishes that all systems aboard the booster are functioning properly. After this first test, the booster is then fully fueled and fired for a period equivalent to actual flight time to demonstrate the correct functional performance of all airborne systems under simulated launch conditions and to provide the data necessary to calculate a potential flight trajectory for the vehicle.

As each booster is fired, NASA and Chrysler personnel monitor and control all test activities from the blockhouse. Some 700 separate measurements of each test are automatically made and recorded at this control center. Over 300 more measurements are recorded and evaluated at the nearby NASA Computation and Quality Laboratories.

Once this data has been analyzed and the test judged a success, the booster is transported back to the Michoud Operations for post static test rework and eventual shipment to Cape Kennedy.

CAPE KENNEDY PRE-LAUNCH OPERATIONS

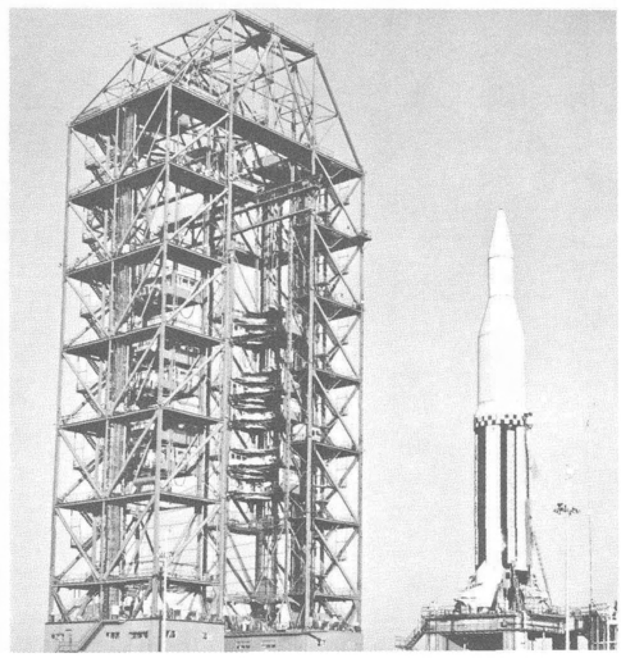
Despite Saturn's overpowering size, preparation of the vehicle for launch is a delicate and detailed operation.

First, the various stages, each manufactured by a different contractor and shipped from a different part of the country, must be unloaded at Cape Kennedy and carefully transported to launch complex 37 shown at the left.

Then, the stages must be hauled aloft and "mated" vertically in the service tower as shown on the upper right.

After the stages are mated and Saturn's electrical and mechanical systems are checked out, the large service tower shown at the lower right is wheeled away. The smaller umbilical tower remains connected to the vehicle, until seconds before the launch. Through swinging service masts connected to this tower, the vehicle is supplied the electrical, hydraulic, and pneumatic services required for engine start.

The vehicle is also fueled through masts connected to this tower. Shortly before launch, kerosene, LOX (liquid oxygen) and liquid hydrogen are pumped into the appropriate tanks of the stages and the final launch countdown is begun.



LAUNCH

1

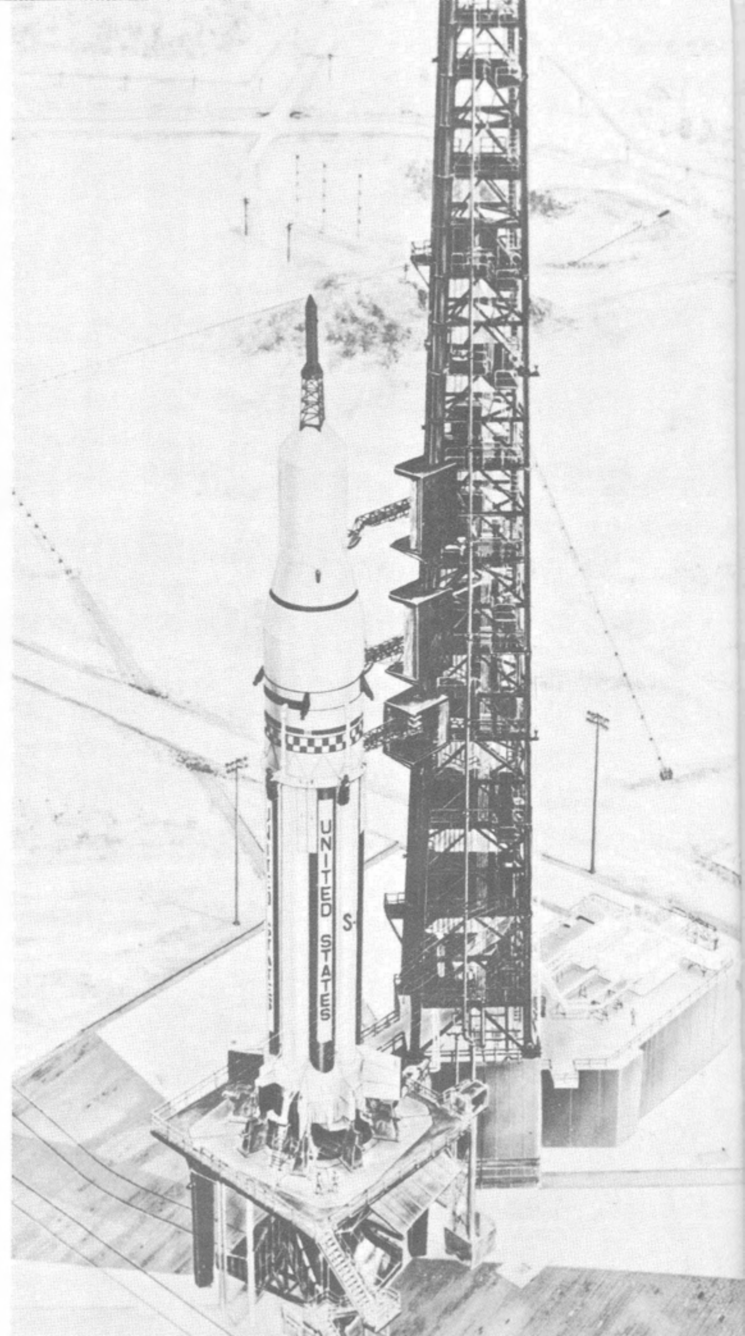
We have static tested our SA-8 and SA-10 boosters. We have not as yet launched one. Until now, our Cape personnel have been in a supporting role to NASA, but the day will soon come when:

Chrysler personnel at Cape Kennedy will fill the fuel tanks. They will report - ALL SYSTEMS GO.

This is the moment that all of us, those at Michoud, Huntsville, Cape Kennedy, and in Detroit, have worked toward. Confident and yet feeling the goose pimples grow, the launch crew completes their final preparations.

A loudspeaker blares! Ten...nine...... four...three...two...one...LIFTOFF!

With static test behind it, the mammoth Saturn booster again spews forth its fiery inferno. Majestically rising on its thundering plume, Saturn roars away toward the southeast and its mission far above the earth! Moments later, the payload is successfully fired into orbit! Another Saturn launch is a complete success!



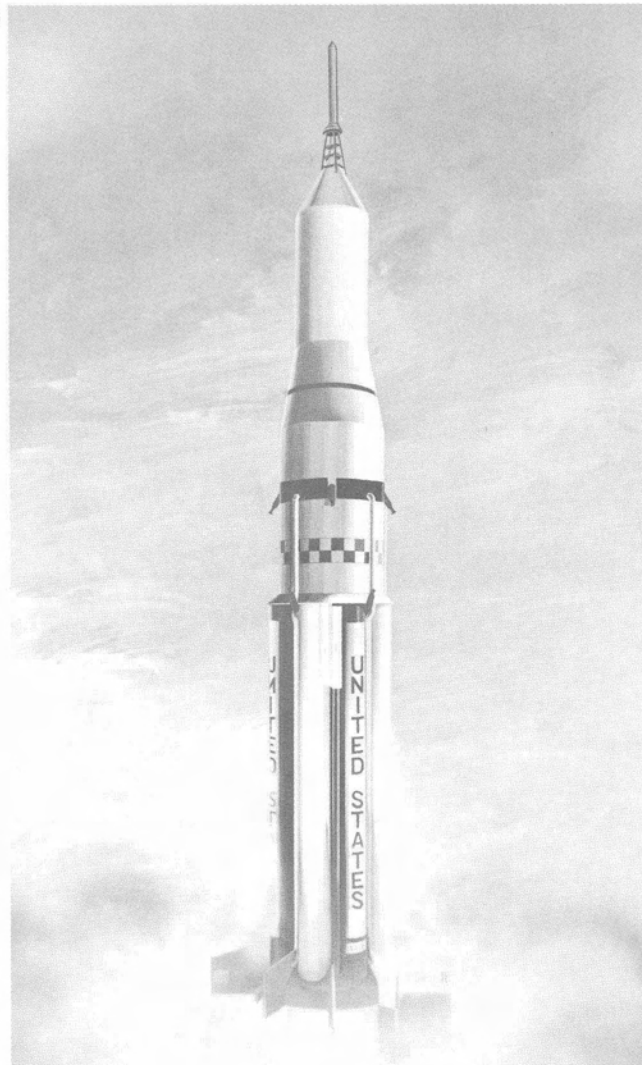
1. The Saturn has been subjected to an all-systems test and simulated flight test, has been fueled, and now stands ready for flight.

2. The command to launch has been given and data electronically relayed to the blockhouse spells out the beginning of another successful Saturn launch.

3. Slowly at first and then with increasing speed, Saturn lifts off the launch pad and roars away from Cape Kennedy.

2

3



THE PAYLOAD AND YOU

We would like you to look at the payload in successful orbit as the pay-off of our combined and individual day-to-day work. Such a pay-off was impossible for the billions of humans that came before us; they could only look to the heavens and wonder what was out there!

This book will help you to understand the Saturn Program; the program is big, it is important, you are important to it. Remember:

QUALITY...

RELIABILITY...

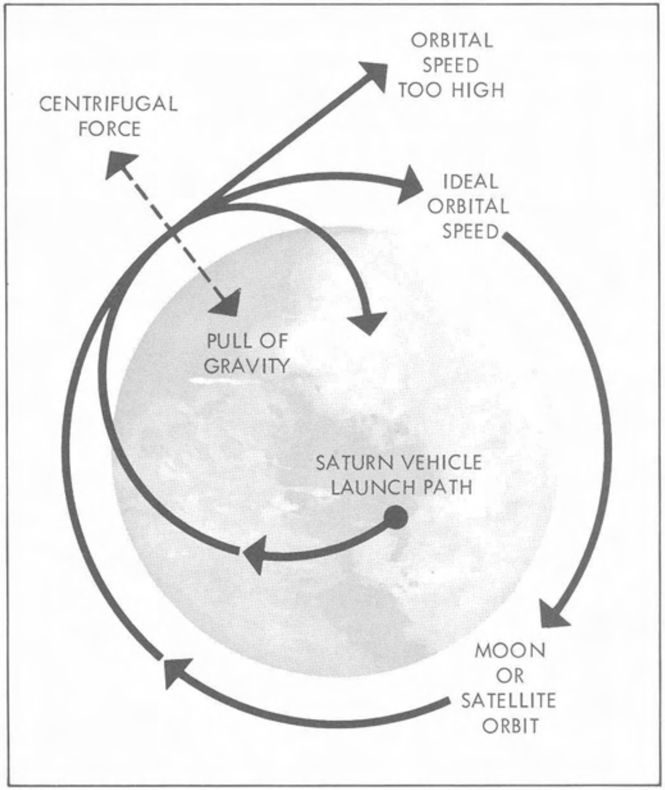
MISSION SUCCESS ...

CREW SAFETY...

ALL ARE IN YOUR HANDS !

SATURN'S MISSIONS

ORBITING THE PAYLOAD



Since the Saturn I and IB vehicles will be used to place payloads in orbit around the earth (one of these payloads will be a Manned Apollo Spacecraft), a short discussion of "orbit" and "how to get there" will aid in understanding this very important phase of the Saturn program.

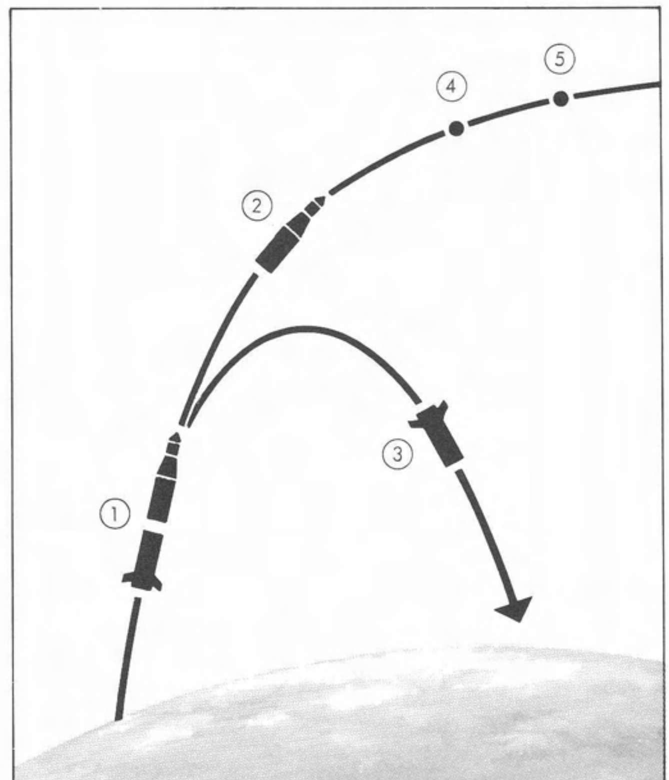
As everyone knows, earth's gravitational force draws all objects within its field toward the center of the earth. In fact, one must travel many thousands of miles away from the earth to escape this far-reaching force.

How, then, can we place research payloads several hundred miles beyond the earth's atmosphere and keep them there? We need only look at the moon for the answer. It swings with unfailing regularity over its course around our world neither crashing to earth nor streaking away into the sun. Long ago, a balance between earth's gravitational pull and the moon's tendency to fly away was achieved.

It is a known fact that objects in motion tend to travel in a straight line unless acted upon by some force. As illustrated in the diagram at the left, the moon travels just fast enough to strike a balance between this tendency to travel in a straight line away from earth and the inward pull of earth's gravity. If, for some reason, the speed of the moon were gradually increased, its tendency to travel in a straight line would predominate and it would fly off into the sun. Similarly, if the speed of the moon were gradually decreased, the force of earth's gravity would predominate and the moon would spiral down to impact on the earth.

Like the moon, if a payload were lifted to a desired altitude and accelerated to the proper speed along a path parallel to the earth's surface, it would swing into a regular orbit around the earth and stay there indefinitely.

During a Saturn IB launch, the guidance system will steer the vehicle over a curved flight path toward its orbit entry point as shown on the right. Booster burnout and separation from the remainder of the vehicle (1) will occur somewhere between 40 and 75 miles above the earth (depending upon the weight of its payload) and at a velocity of 3,000 to 5,000 miles per hour. As the booster drops back to earth (2), the second stage will fire and further accelerate the payload toward its orbit entry point (3). Somewhere short of orbital altitude, the second stage will shut down (4) and allow the payload to coast to a point approximately 350 miles above the earth. During the fuel economy maneuver, the vehicle will arc over under the influence of gravity until it is traveling parallel to the earth's surface. At this instant, the second stage will fire again (5) and accelerate the payload to final orbital speed, approximately 18,000 miles per hour.

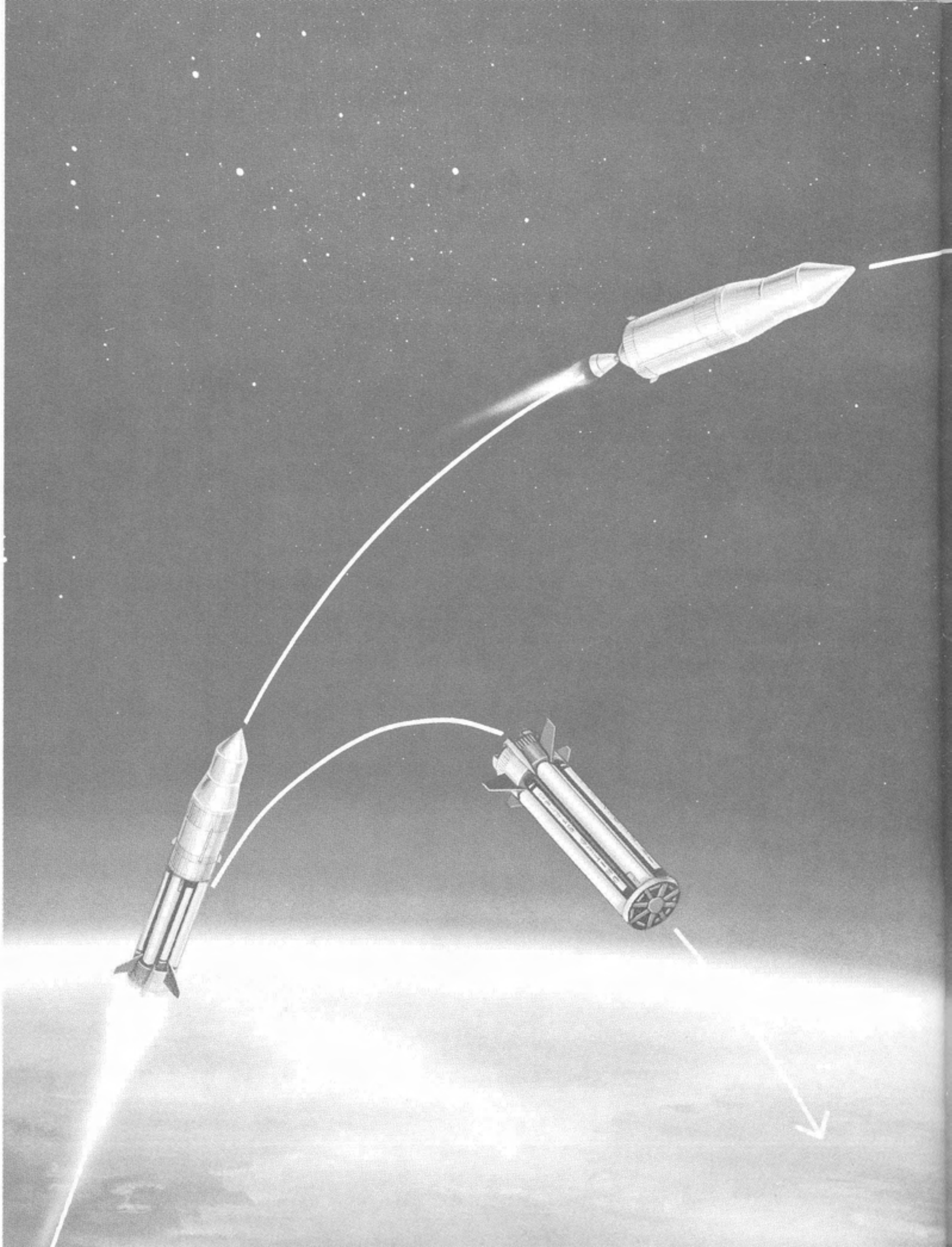


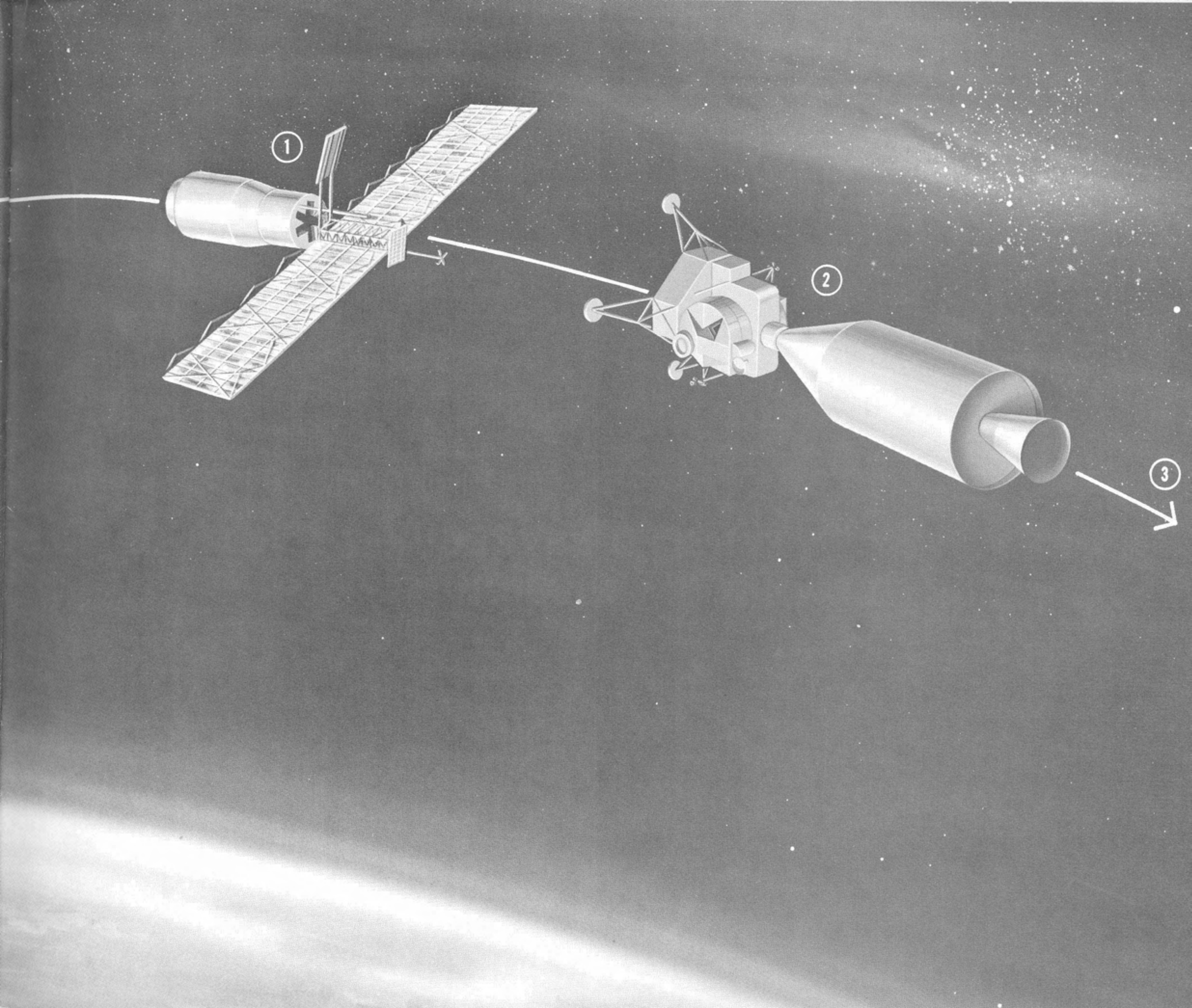
SATURN I AND IB MISSIONS

Present mission planning calls for the Saturn I and IB vehicles to orbit two types of payloads: (1) a meteoroid technology satellite and various manned and unmanned versions of (2) the Apollo spacecraft. These payloads are shown at the right as they will appear in orbit.

Saturn I vehicles will carry aloft a meteoroid technology satellite to survey the meteoroid population in outer space. Later S-IB vehicles will boost increasingly complex versions of the Apollo spacecraft into orbit until the equipment and techniques needed for a manned lunar landing and return are perfected.

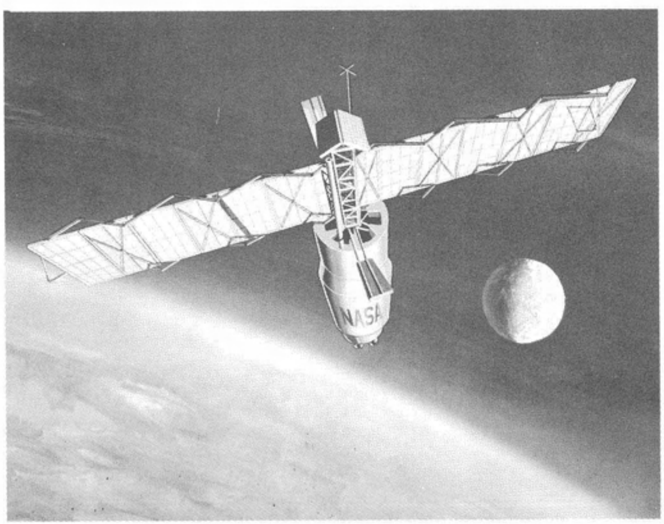
Future missions for the Saturn IB vehicle (3) are under study with an eye toward the support of lunar bases, the orbiting and provisioning of manned satellites, and deep space probes.




1
2
3

EARLY SATURN I MISSION: METEOROID TECHNOLOGY SATELLITE

Saturn I vehicles (SA-8, 9, and 10) will boost meteoroid technology satellites into orbit as part of NASA's "Pegasus" project. These satellites will gather information concerning the size and number of free flying particles (meteoroids) in the near-earth altitude range planned for manned spacecraft testing. Through this research it will be possible to accurately evaluate the hazard these meteoroids pose to manned space flight.

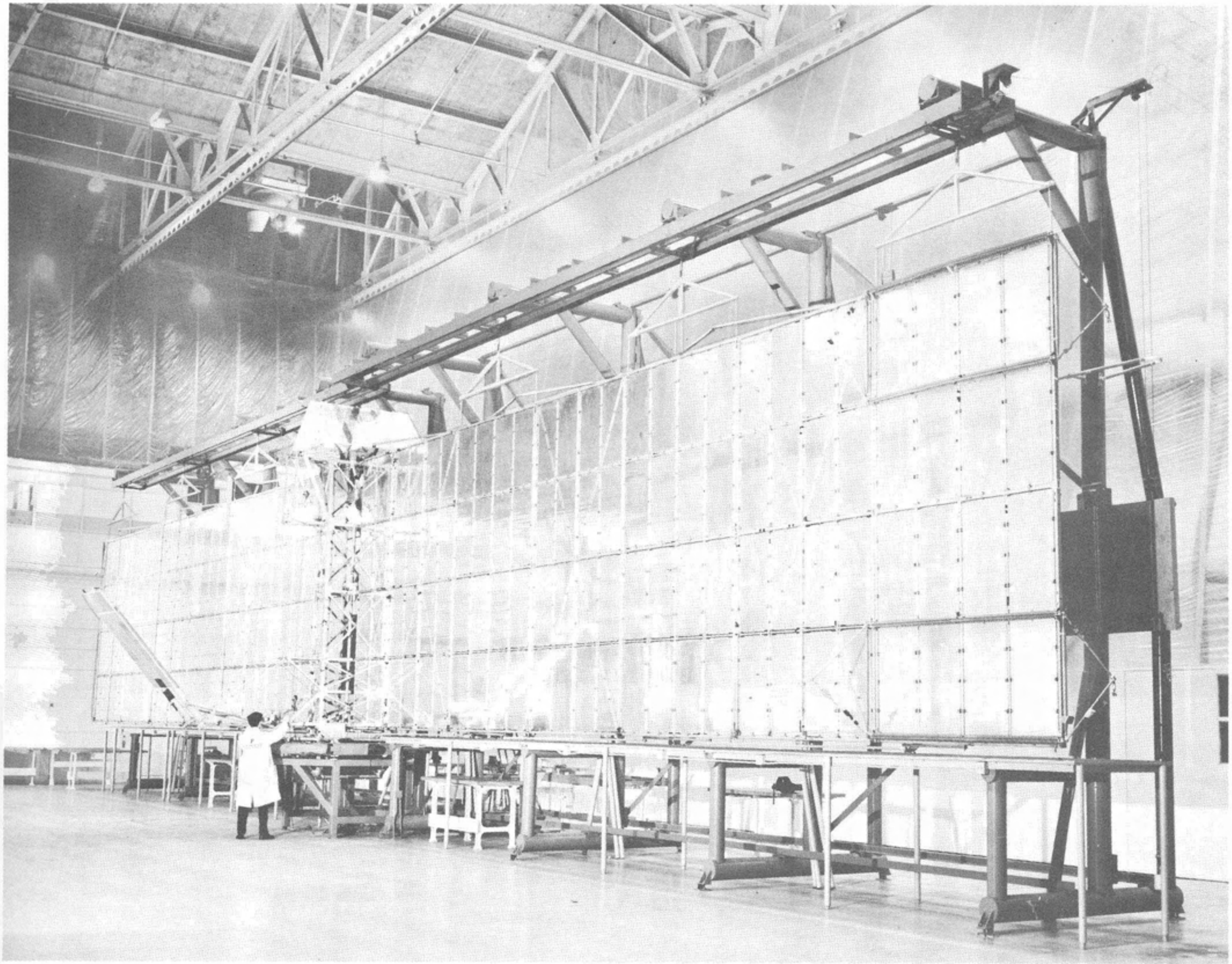


During launch, the satellite will be housed in an assembly like the Apollo spacecraft service module. Once in orbit, two large "wings" will be unfolded from the satellite exposing more than 2,000 square feet of test surface to meteoroid impact. An artist's conception of this satellite is shown at left.

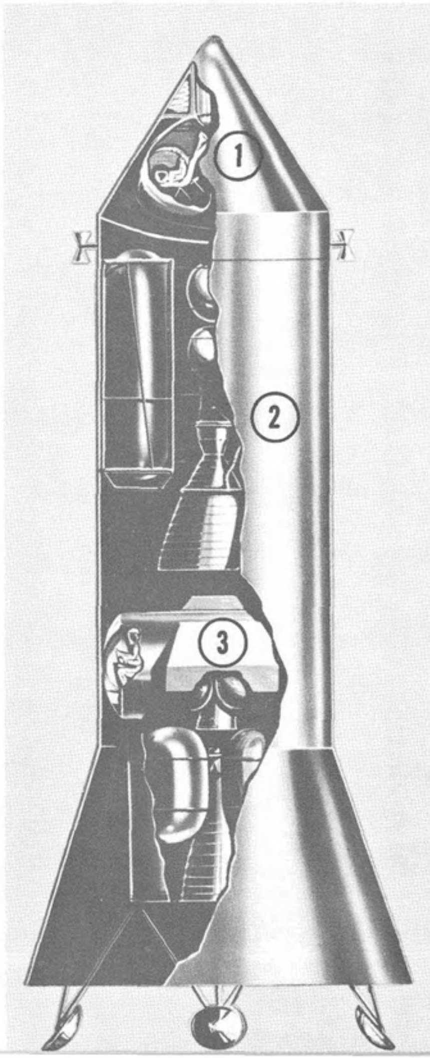
The rear surface of each aluminum panel will be coated with a thin layer of plastic and then another layer of vapor-deposited metal. In orbit, an electrical potential will be established between these two metallic layers. Then, whenever a meteoroid ruptures a portion of this multipaneled capacitor, the break will discharge that panel and create an electrical impulse.

By recording the frequency and magnitude of these impulses, researchers will have an accurate record of the meteoroid population in an area of space soon to be used for manned spacecraft testing.

Shown at the right is a dynamic test model of the satellite.



SATURN IB's PRIMARY MISSION:
APOLLO SPACECRAFT EARTH ORBIT

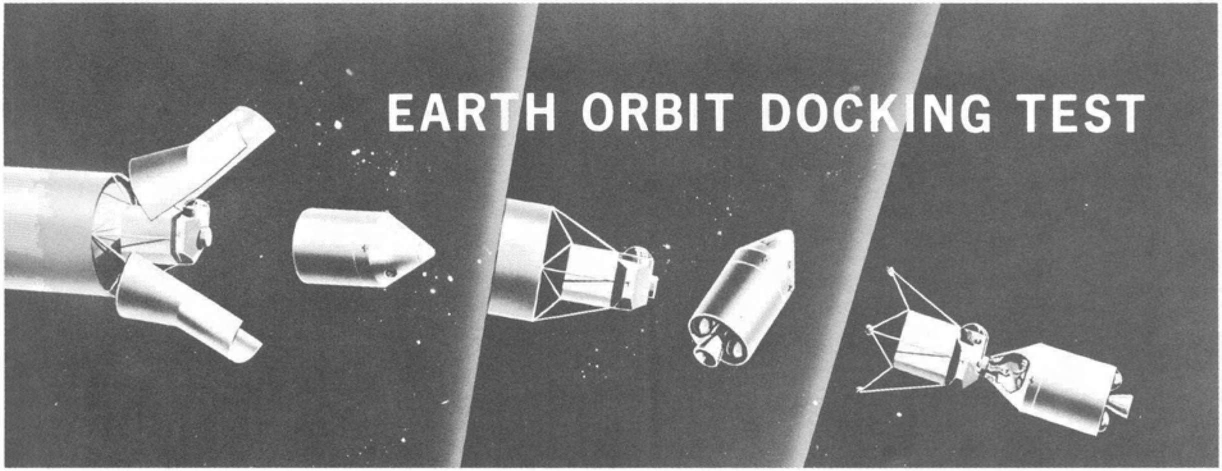


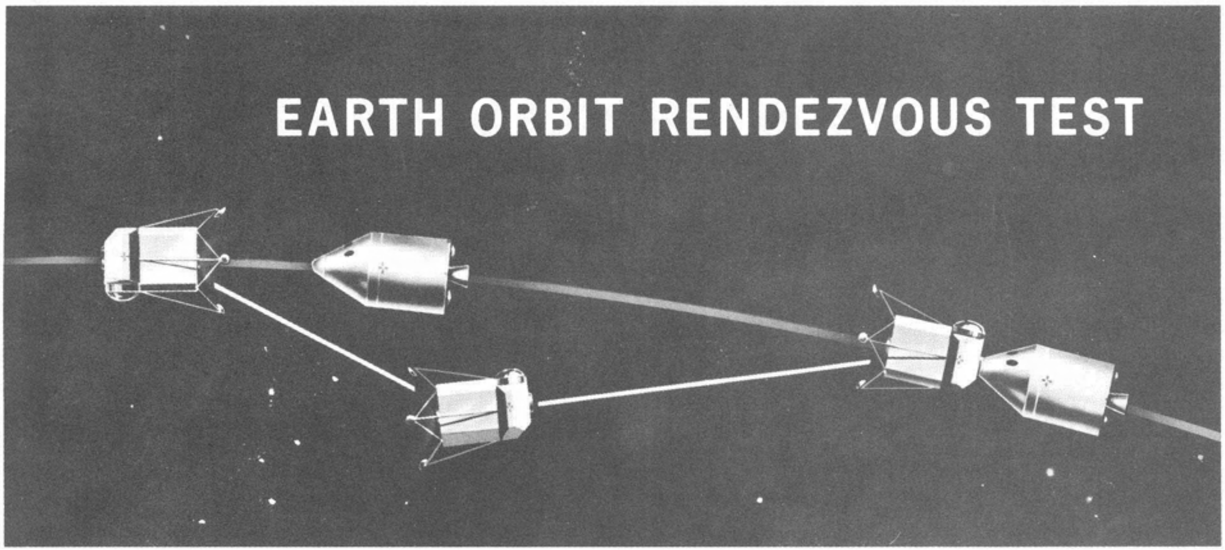
The primary mission of the Chrysler-built S-IB booster is to launch the Apollo spacecraft and S-IVB stage into a low-earth orbit for spacecraft testing and astronaut training.

The Apollo spacecraft shown on the left consists of three distinct modules: (1) the conical Command Module which will carry the three-man Apollo crew and their guidance and control instrumentation, (2) the Service Module which contains the spacecraft's primary propulsion units, and (3) the Lunar Excursion Module (LEM) which will be used to explore the moon.

Once in orbit, the astronauts will separate the Command Module and its propulsion unit from the LEM and perform docking maneuvers as shown on the upper right. While the vehicles are docked, two of the three astronauts will transfer to the LEM. The LEM will then be detached from the S-IVB stage and run through a series of rendezvous tests with the Command Module as shown on the lower right.

After successfully completing this series of tests in earth orbit the Apollo spacecraft and the S-IVB stage will be qualified for the lunar flight.


EARTH ORBIT DOCKING TEST


EARTH ORBIT RENDEZVOUS TEST

BOOSTER MILESTONES

January 31, 1958 ..... Redstone booster (Jupiter C) launches Explorer I into earth orbit.

March 3, 1959 .... Jupiter booster (Juno II) launches Pioneer IV past the moon and into orbit around the sun.

May 5, 1961 and July 21, 1961 .... Mercury/Redstone boosters lift the first two Manned Mercury capsules carrying Astronauts Shepard and Grissom over sub-orbital flightpaths.

October 27, 1961 ..... The first Saturn I, SA-1, is successfully fired from Cape Kennedy followed by SA-2 and SA-3 on 25 April 1962 and 16 November 1962, respectively.

March 28, 1963 ...... SA-4 is launched, and with one booster engine intentionally shut down, successfully completes its assigned mission.

January 29, 1964 ..... SA-5 is launched with live upper stages and orbits 37,700 pounds.

May 28, 1964 .... SA-6 is launched and orbits an Apollo flight-test spacecraft.

September 18, 1964 .... SA-7 is launched and orbits an Apollo flight-test spacecraft.

NOTE:

The NASA-built SA-9 vehicle is scheduled for launch prior to the SA-8 vehicle which will use a Chrysler-built first stage, S-I-8.

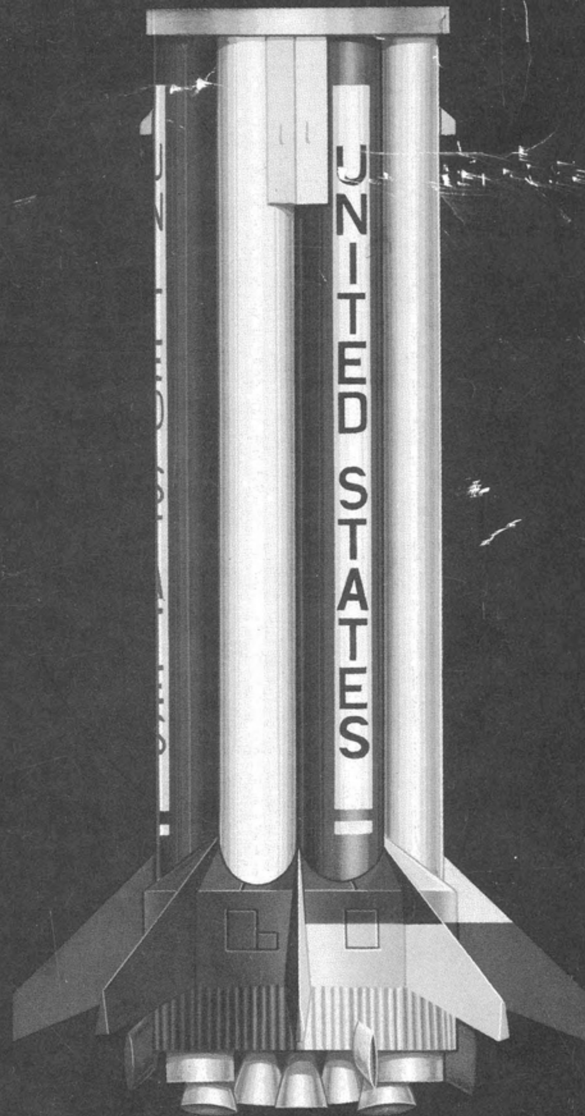
SATURN MISSION CHART

VEHICLE	STATIC TEST DATE	LAUNCH DATE		MISSION	ASTRONAUT'S NAME	RESULT


THE BEGINNING...

SPACE DIVISION CHRYSLER CORPORATION

GOVERNMENT FIELD PRINTING PLANT
(Under Contract NAS 8-5618)
NASA – MICHOUD OPERATIONS – 1964
NEW ORLEANS 26, LOUISIANA


UNITED STATES