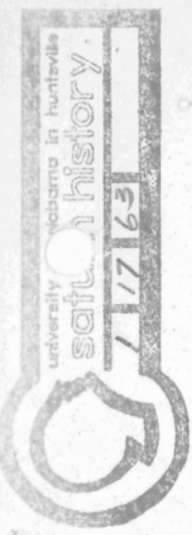


Presented By
Raymond Pisani
To
East-West Bank Chamber of Commerce
January 17, 1963



VII. 1

*Saturn and the
Exploration of Space*

Thank you, ^{DICK} Mr. WHITE. I am pleased to

be here as a representative of the Marshall

Space Flight Center, Huntsville, Alabama. — MY WIFE &

I HAVE VISITED MANY CITIES - I SAY WITH ALL HONESTY & SINCERITY - WE HAVE NEVER BEEN SO WARMLY WELCOMED

This afternoon, I would like to tell you

about SATURN's role in manned space exploration.

And the contributions your area will make to

Spec'ly THIS - to DICK & Helen White

MY WIFE AND I HAVE VISITED MANY CITIES - I SAY WITH ALL SINCERITY & HONESTY THAT WE HAVE

*& Granite
with a warm
heart
here
say good
bye
city.*

2

this program.

During the Eighteenth century, New Orleans played a vital role in the age of Western Exploration. Today, New Orleans is again fulfilling another vital role in a newer age.

For here, in your area, work is moving forward to support manned exploration into space.

Our country's exploration of space began in 1958 with the orbiting of our first satellite. Since that time, satellite launchings have become commonplace. Instrumented spacecraft have flown deep into the solar system. and -- on television -- you have seen man

3
launched into orbit around the earth.

But you have seen more than just space
theatricals.

Each spacecraft launched, each manned
flight performed, is a planned step forward
in realizing national objectives. Planned--
I want to emphasize that word.

The National Aeronautics and Space
Administration -- or NASA -- has planned a
long-range program of space exploration. In
carrying out this program, NASA works through
its technical field organizations. The
Marshall Space Flight Center, at Huntsville,

is one of these.

To accomplish advanced manned space flights,
NASA will require a new class of heavy launch
vehicles. Development of these vehicles is
the responsibility of the Marshall Center,
directed by Dr. Wernher von Braun.

The SATURN is the first of this new
vehicle class. The man directly responsible
for SATURN development is Dr. Oswald H. Lange,
Director of Marshall's SATURN Systems Office.

CHANGE
I HAVE some interesting SLIDES I would like to
May I have the lights down and the slide

slow
projector on please.

SLIDE 1 -- LONG SHOT OF SATURN

Here is the SATURN. It is being developed to carry not pounds -- but tons of instrumented payloads and manned spacecraft. This vehicle is the result of a logical growth from earlier vehicle technology, plus the addition of some highly advanced technological concepts.

SLIDE 2 -- MEDIUM SHOT OF SATURN

The SATURN you see here is an early research and development model. It is being flight tested to prove booster operation and the overall vehicle configuration. Only the booster, or first stage, is live. The two upper stages are dummies, carrying water

ballast to simulate actual stage weight.

SLIDE 3 -- CLOSE UP OF SATURN

We have had three very successful test flights with this model of SATURN. The fourth flight test is scheduled later this spring.

I would like to show you a short ^{TWO MINUTE} film of our last flight test. We received this film just before I left for New Orleans, so this is, by the way, the first public showing of this film. May I have the film, please. *Callon Charles*

FILM CLIP -- SA-3 SATURN LAUNCH

~~WHEN THE COR SEQUENCE BEGINS~~

This SATURN was the heaviest vehicle ever

launched by the United States. At lift-off,
it weighed over ^A~~one~~ million pounds.

The vehicle reached a height of 120
miles and a speed of about 4,000 miles per hour.

When developed, the SATURN will be able
to place 20,000 pounds -- 10 tons -- of payload
into orbit.

May I have the projector off, please.

FILM OFF

SLIDE 4 -- COMMAND MODULE

And here is the first of the SATURN's
multi-ton payloads. This ^e~~tee~~-like structure
is the business end of the APOLLO spacecraft --

the crew compartment.

In this compartment, three men will eventually travel to the moon and return.

Eventually.

But first, SATURN must thrust this compartment into earth orbit for a series of unmanned flight and re-entry tests. A New Orleans-built first stage will lift these compartments on their first flights.

SLIDE 5 -- SA-5 BOOSTER

Here is a close look at the type booster ^{Aloué} which will be built here, at Michoud.

The booster is more than 8 stories tall,

and more than 20 feet wide. It produces a million and a half pounds of thrust. ~~The stage you see here was developed and built at the Marshall Space Flight Center.~~

Twenty-one of these stages will be built at the Michoud Plant by the Chrysler Corporation. Last October, fabrication of the first booster parts began at Michoud.

SLIDE 6 -- BLOCK II SATURN

The Michoud stage will be used on this version of the SATURN.

To support manned orbital flights, Marshall has modified the vehicle to a two-stage con-

ON THIS SLIDE

figuration. Above the booster, you can see a 6-engine second stage, which is being built by the Douglas Aircraft ~~Corporation~~^{Company}. And above that stage is an early model of the APOLLO spacecraft.

SLIDE 7 -- APOLLO SPACECRAFT

Here is an artist's concept of the APOLLO. The Manned Spacecraft Center in Houston, Texas, is managing development of this spacecraft.

The APOLLO is in three main parts.

The three-man crew compartment, or command module, at the top, ~~which you saw a few slides~~

Next comes a propulsion unit, or service module.

Both the propulsion unit and crew compartment will be launched on earth orbital tests

by the two-stage SATURN. YOU SAW ON THE PREVIOUS SLIDE

The third part of the APOLLO -- at the bottom -- is the lunar excursion module -- the only part of the spacecraft that will land on the moon.

But with the ^{OR "THE BUG"} ~~excursion~~ ^{"THE BUG"} module, we get a weight problem. ^{TOTAL} The three-part spacecraft is too heavy for our present SATURN to orbit.

We need a still more powerful carrier vehicle.

SLIDE 8 -- SATURN C-1B

Here it is. This vehicle is called the SATURN C-1B. Marshall is designing it to perform earth orbital tests with the three-part APOLLO.

To do this, we will use Michoud ^{-produced} boosters
^
with a new, high-thrust second stage.

This combination of old and new will let NASA test the complete spacecraft near the earth.

Performance of the C-1B is high. It will be able to orbit about 16 tons.

But this is still not enough.

For manned lunar missions require that over 40 tons be escaped from earth.

SLIDE 9 -- C-5 BY BARRONE BUILDING

To perform this enormous task, Marshall is developing a ~~third~~ heavy launch vehicle -- the SATURN C-5.

To give you an idea of size, this vehicle has been placed along side the Barrone Building in New Orleans. With spacecraft, SATURN will measure over 350 feet high. It will be 33 feet wide.

SLIDE 10 -- SATURN VEHICLES (C-a-40)

Let me stop a moment to review the

SATURN vehicles. The SATURN, at left, is already in flight test. The next vehicle, the two-stage Block II SATURN, will flight test parts of the APOLLO in earth orbit. The SATURN C-1B will flight test the complete APOLLO in earth orbit. And -- at right -- the SATURN C-5 will be able to thrust 45 tons toward the moon - that is *the equivalent of* about 15 family automobiles.

To lift such weights, we need tremendous first-stage thrust. Let's look at the first stage of the SATURN C-5.

SLIDE 11 -- S-1C STAGE (SIC-a-2)

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This mammoth stage -- the heart of the
lunar launch vehicle -- will be built at
Michoud by the Boeing Company. The stage
groups five of the largest rocket engines
now being developed. Fabrication of booster
components began last December. By 1967, it
is expected that Boeing will have built about
20
~~24~~ flight stages at Michoud.

SLIDE 12 -- REGIONAL MAP

Within the area shown here, will be
performed a large part of SATURN manufacture,
computation, and test. The cost of this work
for the next several years will be over one

10
billion dollars. Over 36 million dollars were spent in the last six months in this area.

1. At Michoud, the SATURN boosters will be produced.

2. At Slidell, a high-speed electronic computer facility started operations last November.

3. At the Mississippi Test Facility will be performed captive tests of the stages produced at Michoud.

³
SLIDE 16--MICHOU D PLANT

Here is an artist's concept of the Michoud plant after completion of the necessary

modifications. The Vertical Assembly Building --
in the right foreground -- is being built by
the Ross Corporation of New Orleans. The contract
is valued at nearly 3 million dollars.

SLIDE 14 -- CHRYSLER BOOSTER ASSEMBLY

Inside Michoud, Chrysler has already started
booster production. Here a booster tail-assembly
is being fabricated by Chrysler personnel.

By the end of this year, Chrysler expects
to reach an employment peak of 2700 people.
About 1700 of these are already at work.

Chrysler's contract will run through 1966

10
and will total over 233 million dollars.

SLIDE 15 -- POSITION BORING MILL

In another part of Michoud, Boeing, producer of the SATURN C-5 booster, is preparing for production. The table being positioned here is part of the largest boring mill in the United States. Boeing personnel recently began operating this mill. Right now, Boeing has about 1900 people working in the New Orleans area.

By the end of the year, the contractor expects to reach a peak employment of 3600 in this locality.

The Boeing contract value is expected to exceed 300 million dollars.

SLIDE 16 -- SLIDELL (O-d-6)

This building will house the Slidell Computer Facility. The computers will be used to support test and checkout operations at Michoud. And will also service the Mississippi Test Facility. Peak employment at this facility, about ¹²⁵~~150~~ persons, will be reached by the middle of this year.

SLIDE 18 -- MTF, OVERALL

Shown here is an artists concept of the Mississippi Test Facility. In this area will

be located test stands in which SATURN Boosters will be fired to assure their flight readiness. NASA has just about completed land acquisition for the Facility.

Facility design is well underway. The early phases of construction have begun. About 15 miles of canals will be built from the Pearl River -- in the lower left corner -- to the stands in the upper right. The Facility construction cost is estimated at over 500 million dollars. Eventually about 2,000 people will be permanently employed at the Facility.

SLIDE OFF

LIGHTS UP

In the past few minutes, I have given you a brief outline of the vital role New Orleans will play in the age of space exploration. But there is more to the story -- for in addition to production and testing, New Orleans will be called on to provide critical support services.

Large booster production and testing are exceedingly complex operations. They require a wide variety of operations. As a result, a prime contractor such as Chrysler

or Boeing depends on sub-contractors, usually located nearby. In many cases, sub-contractors are small or medium-sized firms that provide needed goods and services economically and efficiently.

Many local firms are already supplying the needs of the SATURN program -- from modification in the Michoud plant by the Rittiner ~~Industrial Piping~~ Company, to gasoline from the American Oil Company. The total value of support-type contracts awarded to New Orleans businesses, during the last six months, is over four million dollars.

The need for this support is going to expand as the tempo of work increases at Michoud, Slidell, and the Test Facility. There activities will require everything from apples to zener diodes.

The demand for these services will probably continue to grow. For example, last year at Huntsville the addition of two new companies, plus the growth of seven established contractors, boosted the annual income of Huntsville at least 18 million dollars and created 2500 new jobs.

This brings me to another facet of support

that New Orleans will have to provide and provide
provide for -- that is people. Rough current
estimates indicate that about 10 to 12 thousand
people will be required at Michoud, Slidell,
and the Test Facility. To these, you must
add the people required by area subcontractors
supporting the SATURN. Many will be recruited
locally. Many will be new residents. And
most of these will have families. There will
probably be about 8,000 families -- creating
a demand for more houses, more goods, more
services. A real problem -- but one I'm
sure you will swiftly solve.

New Orleans' part in our new age of space exploration will be both challenging and rewarding. It will require the best that your city has to offer in industry, in education, in every field. When the United States successfully returns a man from the moon, in this decade, you can be justly proud of the part New Orleans has played in this age of space exploration.