

A photograph of a space shuttle launching, viewed from a low angle. The shuttle is ascending vertically, leaving a large, bright plume of white smoke and fire behind it. The sky is a clear, pale blue with some light, wispy clouds. The shuttle's external tank and boosters are visible, along with the orbiter. The overall scene is dynamic and captures the power of the launch.

# **Michoud: Link Between New Orleans and NASA**

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# NASA Michoud Assembly Facility in New Orleans

Michoud Operations is a business unit of the Lockheed Martin Corporation based at the NASA Michoud Assembly Facility (MAF) in New Orleans, Louisiana.

Michoud spans 832 acres and is named for Antoine Michoud who acquired the land in 1827 and operated a 15,000 acre sugar plantation.

The main factory building spans 43 acres.



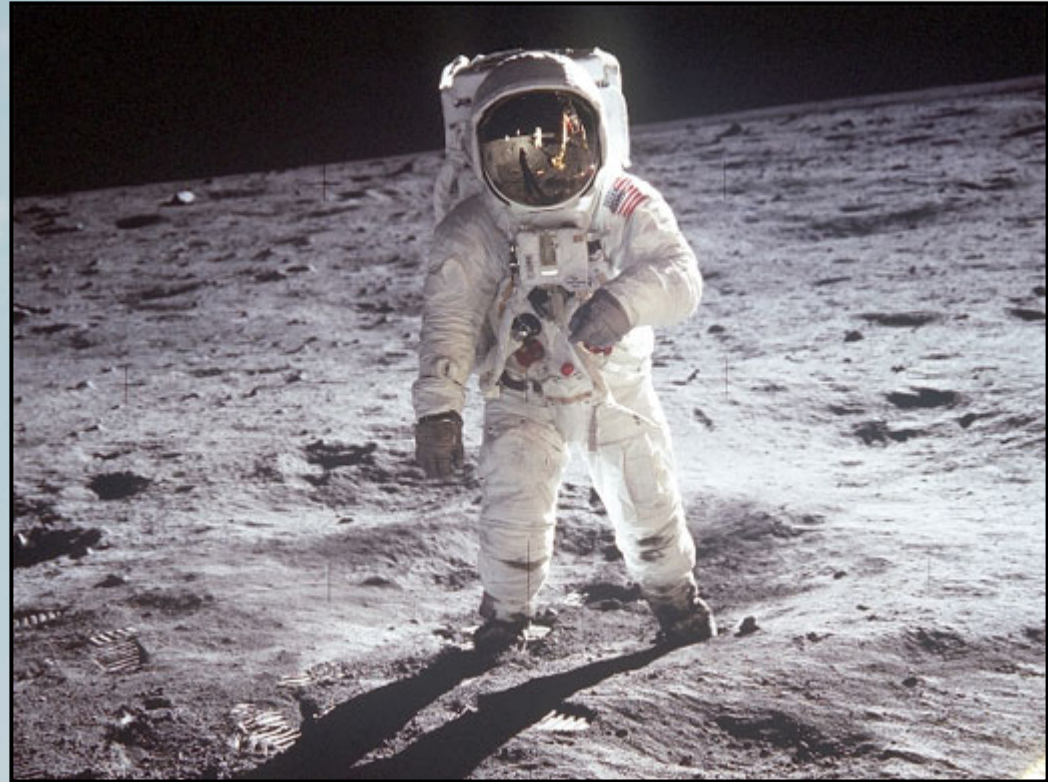
# Main product at Michoud: Space Shuttle External Tank

The ET consists of two welded pressure tanks connected by a riveted intertank. The pressure tanks hold cryogenic liquids which are very cold.

The aft tank is holds LH<sub>2</sub> (liquid hydrogen at 432 degrees below zero F) while the forward, bullet-shaped tank holds LO<sub>2</sub> (liquid oxygen at 297 degrees below zero F).



**Michoud built the first stage of the Saturn V that delivered Apollo 11 to the Moon on July 20, 1969**



**Since September 1973, Michoud has built, tested, and delivered every Space Shuttle External Tank**

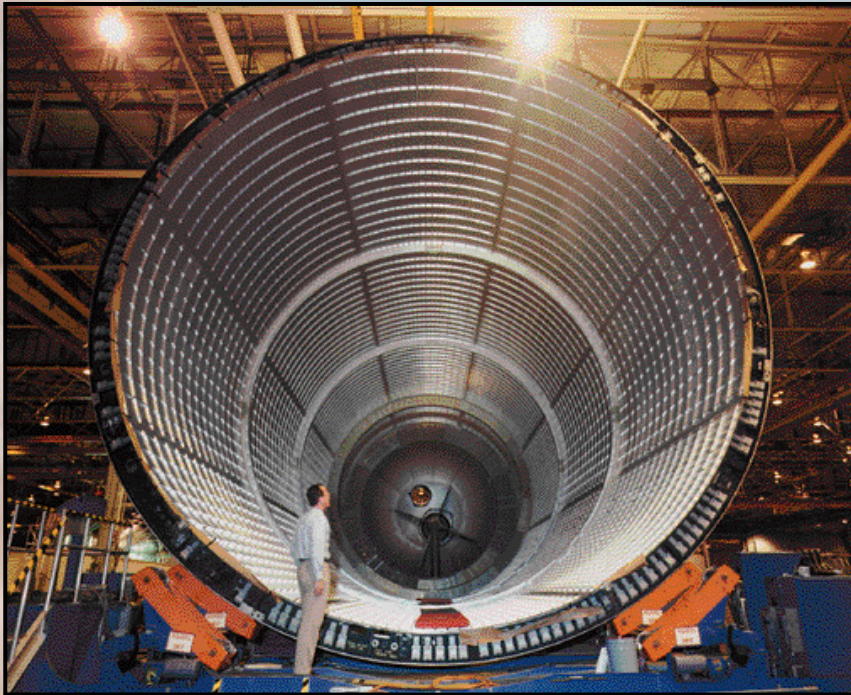
The External Tank...  
from Final Assembly



to Launch Pad

# The External Tank is actually two tanks in one...

Liquid Hydrogen or LH2 tank  
(LH2 is 423 degrees below zero F)



Liquid Oxygen or LO2 tank  
(LO2 is 297 below zero F)



# The role of the External Tank

The ET provides fuel to the Space Shuttle Main Engines during the 8½ minute launch and ascent.

It also serves as the structural backbone of the Shuttle stack and shields the orbiter from aerodynamic forces.



## Just a few numbers...

The Space Shuttle weighs 4.5 million pounds on the launch pad.

It generates 7 million pounds of thrust.

It goes from 0 to 17,000 miles per hour in 8½ minutes!

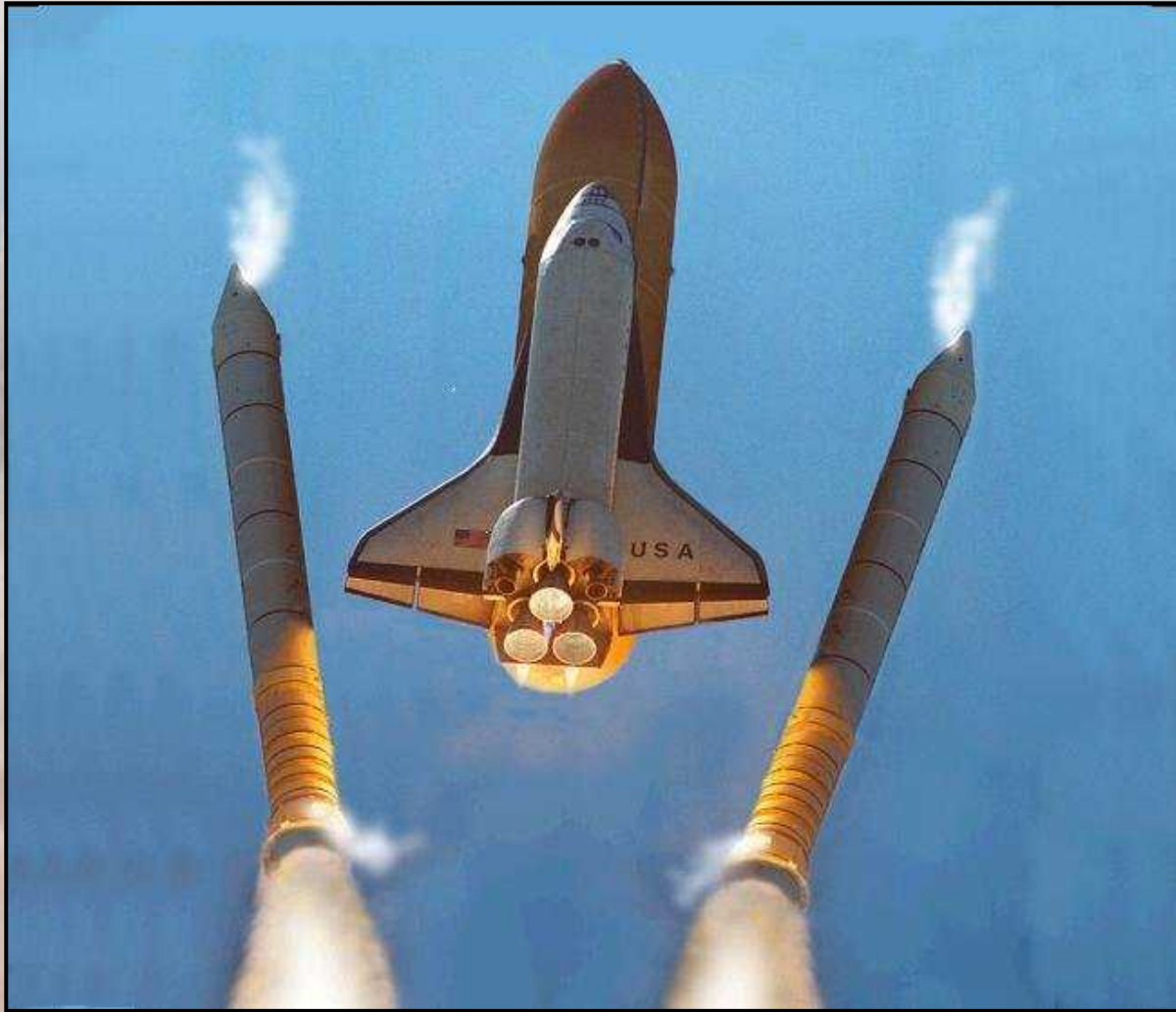


The main engines burn 1,035 gallons of fuel per second!

The 2 small OMS engines are burned for the orbiter to achieve Earth orbit.



# What happens to the Solid Rocket Boosters?



2 minutes after launch, at 28 miles altitude, the Solid Rocket Boosters are jettisoned.

They are recovered in the Atlantic Ocean and reused.

# So what happens to the External Tank?

The ET is jettisoned from the orbiter at an altitude of 80 miles at a speed of 17,000 miles per hour.

The ET tumbles through the atmosphere and disintegrates.



A photograph of a space shuttle launching, with a large plume of white smoke and fire trailing behind it against a blue sky with scattered clouds. The shuttle is positioned vertically in the center of the frame.

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**Thanks for your interest!**