External Tank Overview

Wanda Sigur
The Space Transportation System (STS)

- **External Tank**
  - Lockheed Martin

- **Orbiter**
  - Boeing (Rockwell)

- **Solid Rocket Boosters**
  - Alliant Techsystems (Thiokol)

- **Main Engines**
  - Boeing (Rocketdyne)
The External Tank

**Intertank**
- Unpressurized Structure

**Liquid Oxygen Tank**
- 1,385,000 lbs. / 145,138 gals. Oxidizer
- -297 Degrees Fahrenheit

**Liquid Hydrogen Tank**
- 231,000 lbs. / 309,139 gals. Fuel
- -423 Degrees Fahrenheit

Length = 153.8 Feet; Diameter = 27.6 Feet
External Tank Structural Interfaces

- **Aft ET / Orbiter Interface** (2 places)
- **Forward ET / Orbiter Interface**
- **ET / SRB Aft Attach fittings** 3 each (2 places)
- **ET / SRB Forward Thrust Attach Fittings** (2 places)
- **ET / Ground Interface**
  - *Ground Umbilical Plate*
### ET Production History

- **121 Units Delivered to Date**
- **Three Versions**

<table>
<thead>
<tr>
<th></th>
<th>Delivered</th>
<th>Flown</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Weight Tank</strong></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>- Al 2219 (Al = Aluminum)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Dry Wt. 77,099 lbs.</td>
<td>(actual ET1)</td>
<td>(1981 - 83)</td>
</tr>
<tr>
<td><strong>Lightweight Tank</strong></td>
<td>87</td>
<td>86</td>
</tr>
<tr>
<td>- Al 2219</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Super Lightweight Tank</strong></td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>- Al 2195 (Al-Li = Aluminum Lithium)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Dry Wt. 58,319 lbs.</td>
<td>(actual ET96)</td>
<td>(1998 - present)</td>
</tr>
</tbody>
</table>

- **Substantially Completed Tanks** 4
Since the Shuttle Program began, the ET has successfully undergone several redesigns to meet the changing needs of our Nation’s space program.