20-Foot Vertical Spin Tunnel and Offices

6/18/97 10:46:19 AM

Activity:

National Aeronautics and Space Administration
Langley Research Center

HAMPTON, Virginia 23681
United States

Updated as of: Mar 20, 1996

Facility Type:

- Wind Tunnels
- Wind Tunnels, Subsonic

Description:

The 20-Foot Vertical Spin Tunnel is the only operational spin tunnel in the Western hemisphere. The unique research capabilities provided by the facility include dynamic model free-spin and tumbling research, anti-spin parachute research, and aerodynamic measurements using a rotary balance technique. The free-spin research defines the spin and spin recovery characteristics of a given configuration and the tumble research determines its susceptibility to out-of-control pitch autorotation. The rotary balance technique provides force, moment, and pressure measurements under rotating conditions and thus allows detailed analysis of the spin aerodynamics of a given configuration. As a result of its unique capabilities, the Spin Tunnel supports the development of all United States military fighter and attack airplanes, primary trainers, and bombers. It is also the only available resource for the general aviation aircraft manufacturers to conduct proprietary research on their products.

Available data file(s)

- Subsonic Wind Tunnel Facilities

Facility Capability:

- flight dynamics facility
- rotor dynamics
- spin and attitude control systems test
- wind tunnel
- dynamic free-spin test
- parachute test
- wind tunnel/subsonic

Parameters:
<table>
<thead>
<tr>
<th>Name</th>
<th>Unit of Measure</th>
<th>Values</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>angular rate</td>
<td>degrees/second</td>
<td>600.0</td>
<td>600.0</td>
</tr>
<tr>
<td>reynolds #</td>
<td>millions per foot</td>
<td>0.0</td>
<td>0.57</td>
</tr>
<tr>
<td>test section height</td>
<td>feet</td>
<td>25.0</td>
<td>25.0</td>
</tr>
<tr>
<td>test section length</td>
<td>feet</td>
<td>20.0</td>
<td>20.0</td>
</tr>
<tr>
<td>test section width</td>
<td>feet</td>
<td>20.0</td>
<td>20.0</td>
</tr>
<tr>
<td>velocity</td>
<td>feet/second</td>
<td>90.0</td>
<td>90.0</td>
</tr>
</tbody>
</table>

Programs Supported:

<table>
<thead>
<tr>
<th>Program</th>
<th>Customer</th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOD Support</td>
<td>Department of Defense</td>
<td>1941</td>
<td>1999</td>
</tr>
<tr>
<td>HATP</td>
<td>National Aeronautics and Space Administration</td>
<td>1985</td>
<td>1996</td>
</tr>
</tbody>
</table>

Status:

- Percent Utilization: 80%
- Based On: 1
- Occupancy Year: 1979
- Current Status: Active
- Condition: Good
- Non Owner Use: Yes
- Military: Yes
- Civilian Government: Yes
- Commercial: Yes

Contact:

*For information concerning the facility described on this page contact:*

Alan Farrow

HAMPTON, Virginia 23681
United States
Phone: 804-864-6856
FAX: 804-864-8096
E-Mail: a.l.farrow@larc.nasa.gov

For information concerning facility matters at this location contact:
Alan Farrow
National Aeronautics and Space Administration
Langley Research Center
Mail Stop 446
Mail Stop 446
Hampton, VA 23681-1
a.l.farrow@larc.nasa.gov

Return to the Major Facility Home Page.