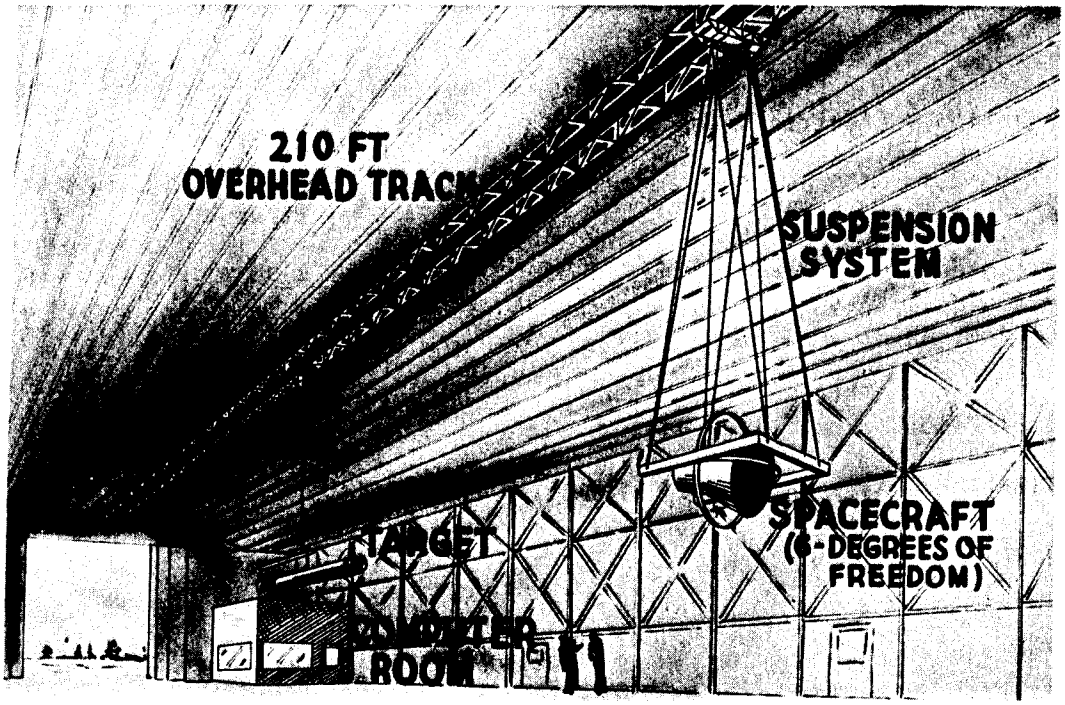
TECHNICAL FACILITIES RESUME

DATE OF RESUME: July 1, 1966
FACILITY NO: 04-00-18-00

1. **REPORTING INSTALLATION:** Langley Research Center
Hampton, Virginia

2. **FACILITY NAME:** Rendezvous Docking Simulator

3. **LOCATION** *(if other than in 1. above):* Same as 1.



4. **FUNCTIONAL NAME:** Rendezvous Docking Simulator

5. **TECHNOLOGICAL AREAS SUPPORTED:** Rendezvous docking studies, Apollo project docking studies, separation techniques; aircraft visual landing approaches.

6. **NARRATIVE DESCRIPTION OF FACILITY CAPABILITIES & FUNCTIONS:**

The Rendezvous Docking Simulator is made up of a three-axis gimbal frame suspended by eight cables from an overhead carriage/dolly system travelling on tracks in the top of the Langley flight hangar. This system is linked electronically to an analog computer and an amplidyne control center in a closed-loop manner such that the pilot inside the gimbal experiences all six degrees of freedom. The eight cables, which provide an essentially weightless link between the 5000 pound attitude gimbal and the overhead-carriage dolly unit, are angled so as to prevent sway and are hydraulically counterbalanced to provide smooth vertical travel with minimum control power.

The dynamic facility is used both for space and aeronautical vehicle studies. Gemini and Apollo docking studies are made in support of space flights, and

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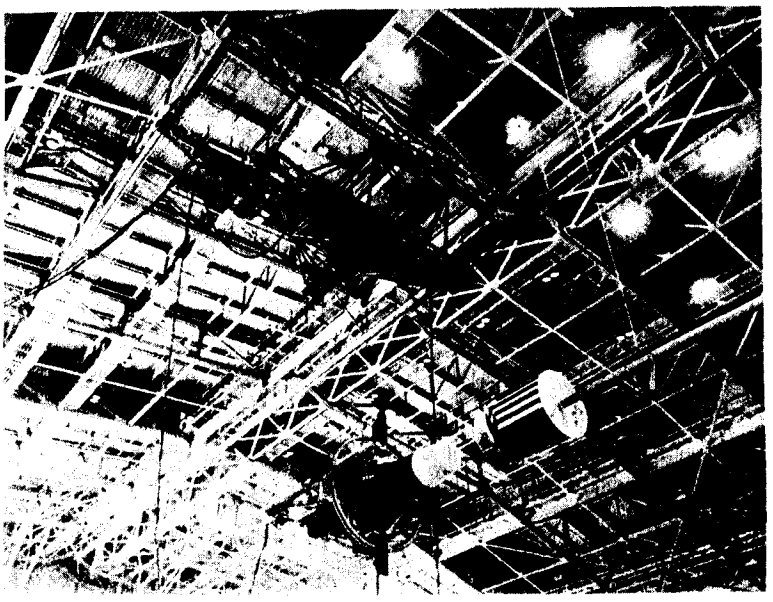
RENDEZVOUS DOCKING SIMULATOR



Gimbal - Hydraulic Drive

	Rate Radians/sec.	Accel. Radians/sec.^{2}
Pitch	1	1
Yaw	1	1
Roll	2	2

Translation - Electric Drive

	Length of Travel ft.	Velocity (max.) ft/sec.	Accel. (max.) ft/sec.^{2}
Longitudinal (bridge)	210	20	8
Lateral (dolly)	16	4	4
Vertical (cable)	45	10	8

Control - Pilot, closed loop analog.

Operational - June 1963
Cost

Fiscal Year	C of F	Project No.
1962	$320,000.00	2329