

Flying Carpet Testbed



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Maritech Project

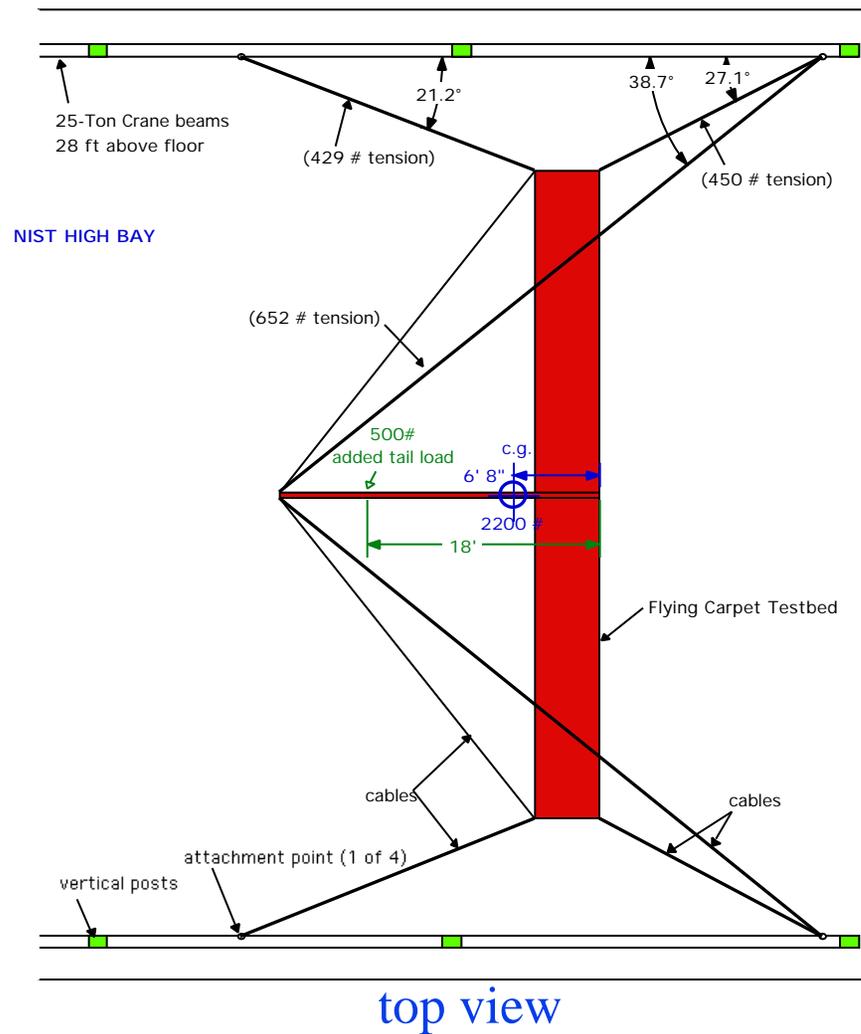
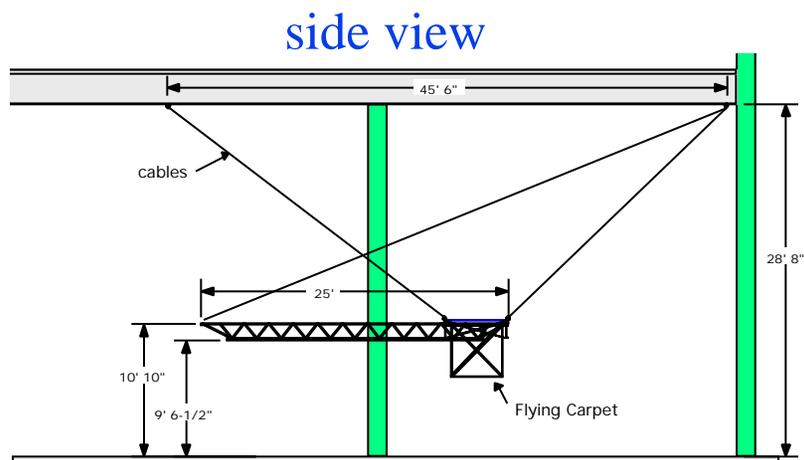
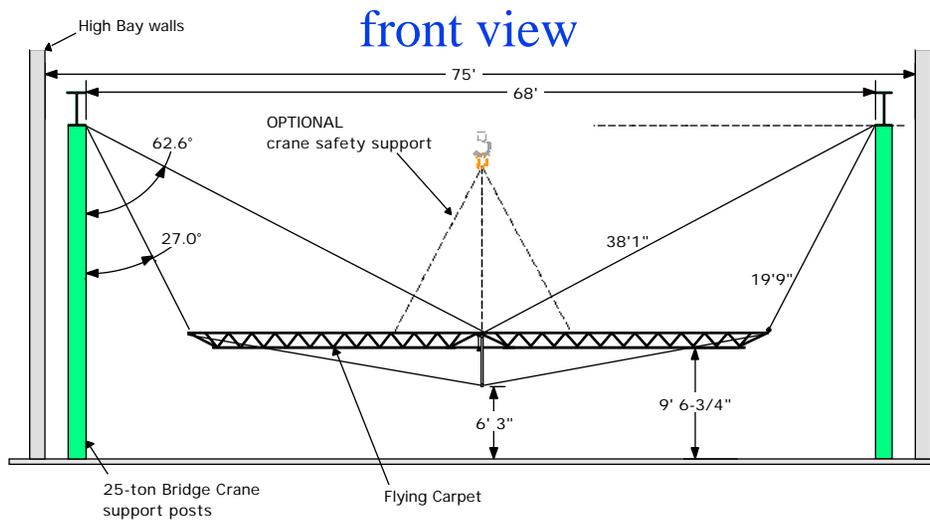
Intelligent Systems Division
Manufacturing Engineering Laboratory
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United States Department of Commerce



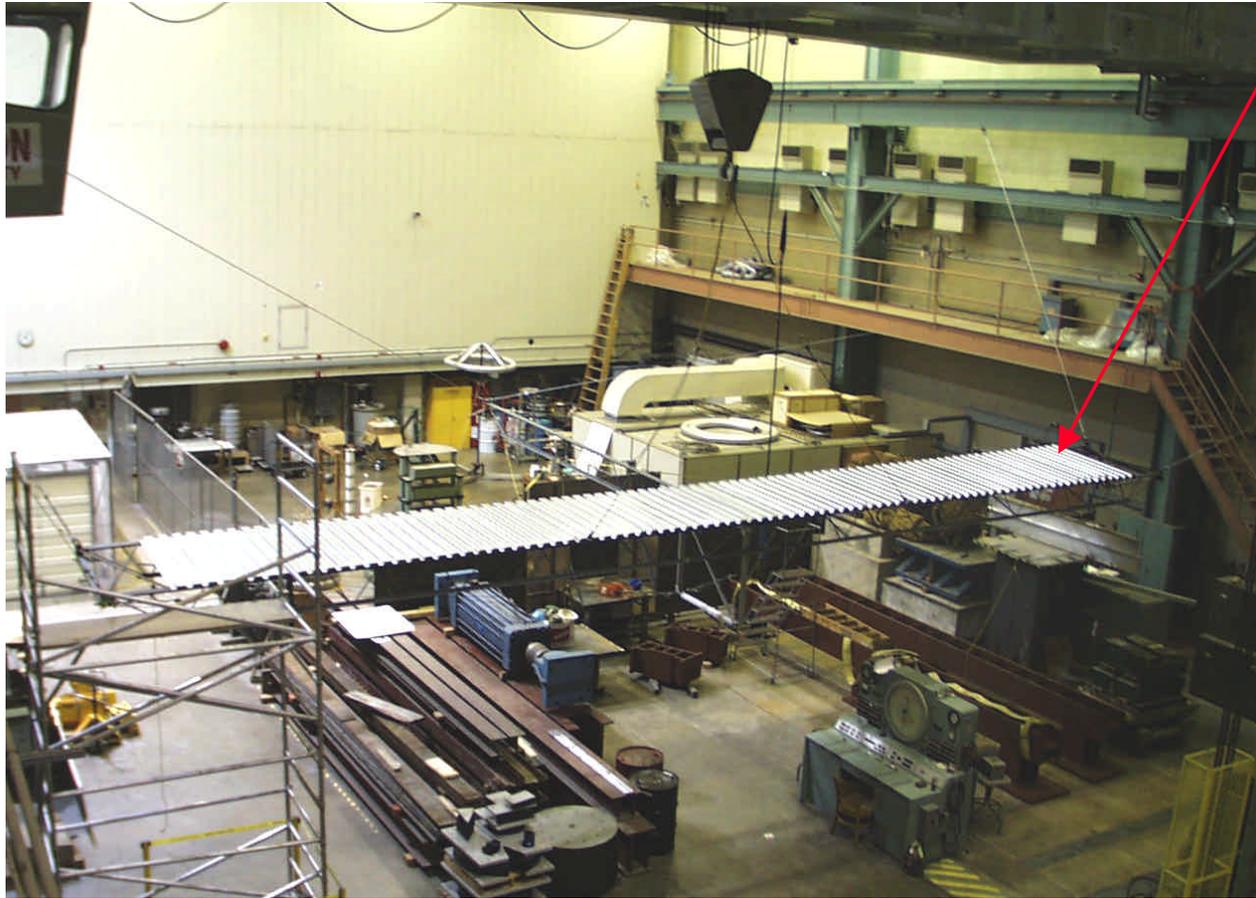
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Flying Carpet Testbed - Layout



Flying Carpet Testbed - Static



- Platform - 50ft lg. x 5 ft dp.

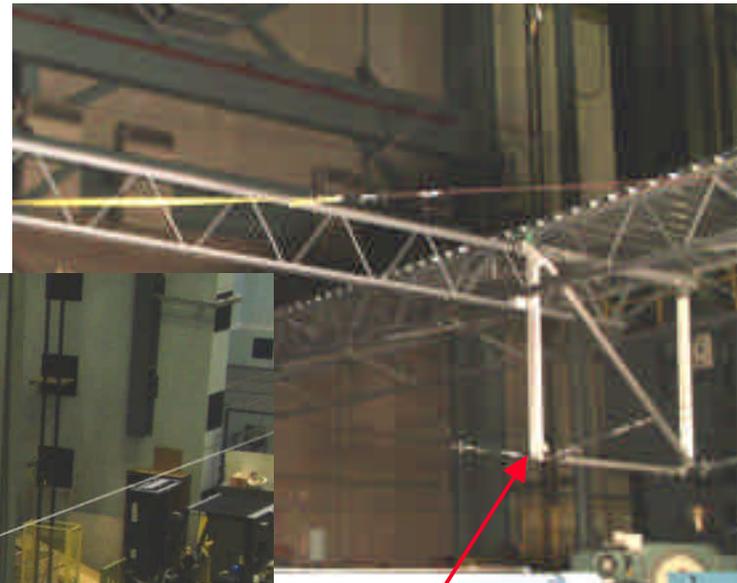
- Suspended by 6-cables (9800 Lbs. cap. each)

- Suspension volume - 68 ft wd. x 28 ft hg.

- Platform used to measure rigidity, loading, usefulness for Dry Dock repair applications.

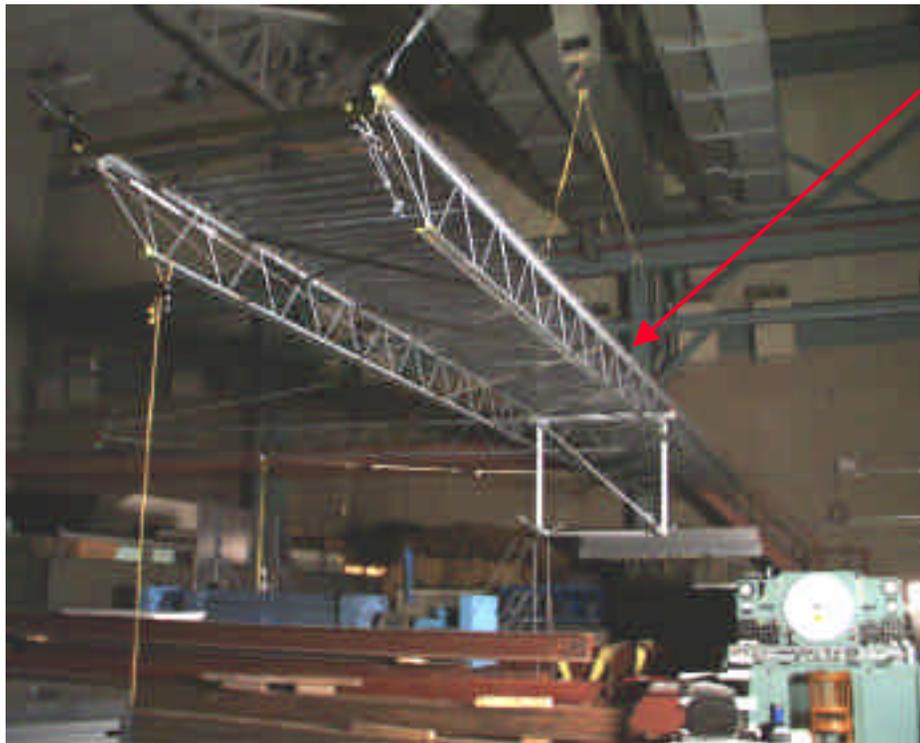
Flying Carpet Testbed - Rear View

Platform (work surface) - railings and smooth decking (covering corrugated metal decking) would be needed for onboard personnel use.



Center support with tension members = truss design and creates a lightweight (1700 Lbs.), yet large platform design.

Flying Carpet Testbed - Large Work Surface



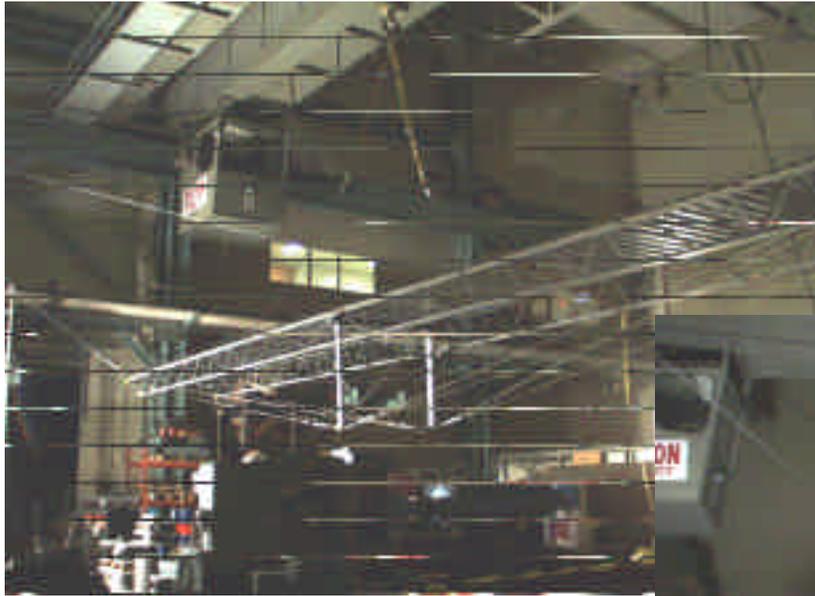
View from beneath platform



View along platform

Large, suspended platform can be position controlled using proven RoboCrane joystick-control technology.

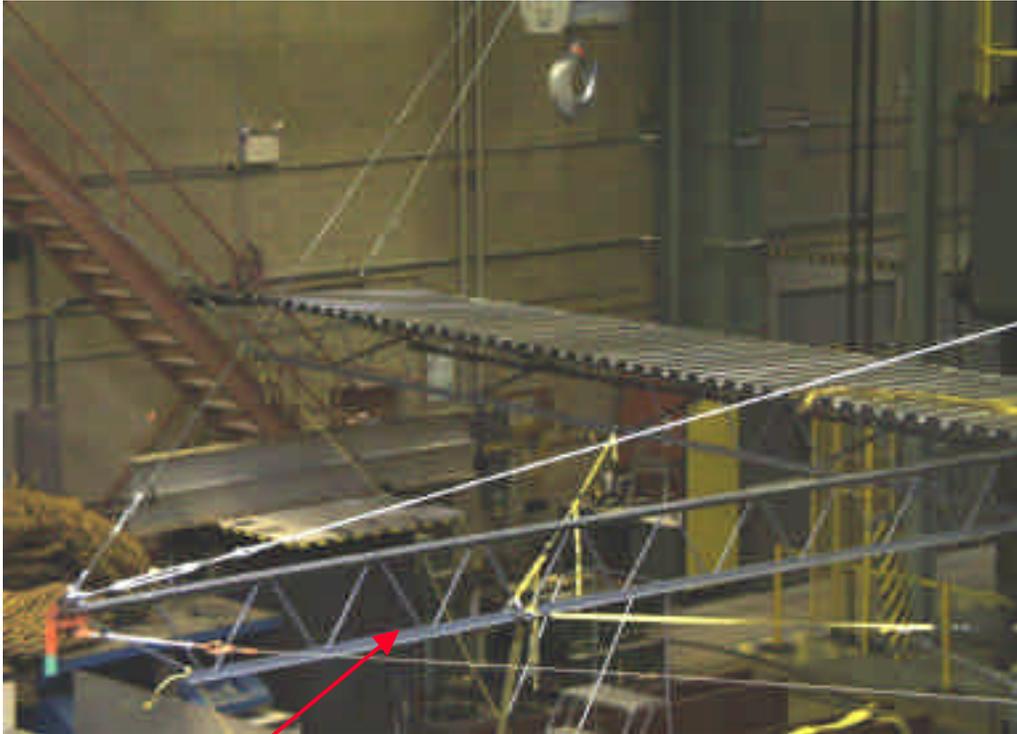
Flying Carpet Testbed - Front (Ship Access)



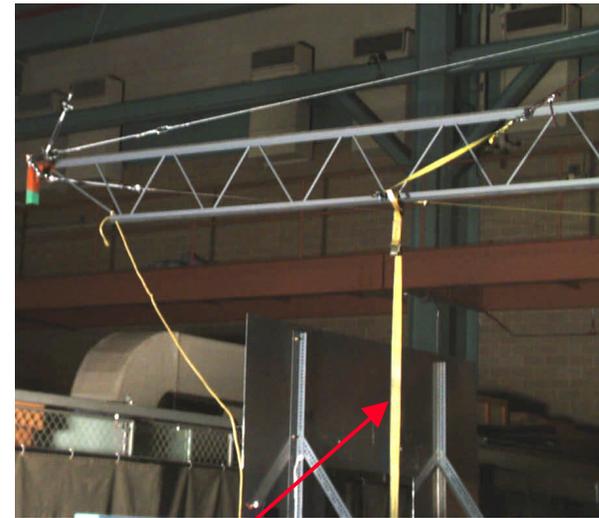
Front view of platform and ship access side. Large area can hold tools, equipment at ends with workers centered.



Flying Carpet Testbed - Stabilizer/Rotator



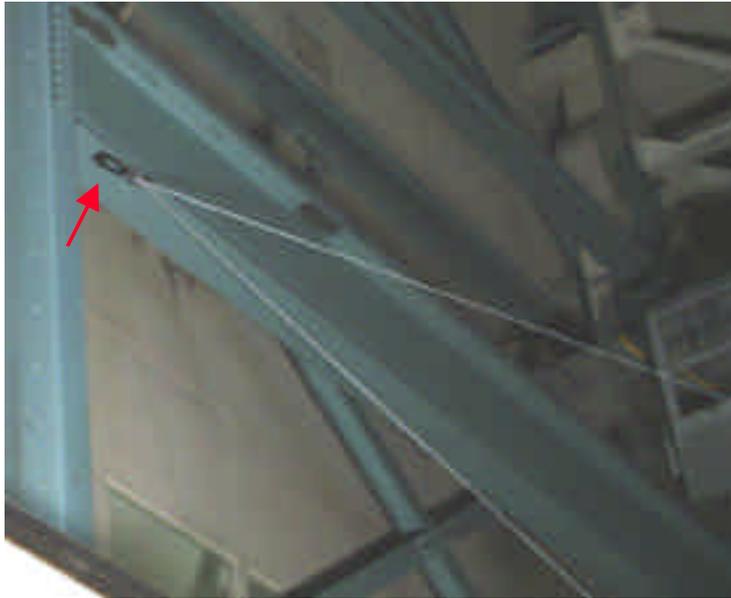
Stabilizer/Rotator provides rigid support and yaw rotation of platform.



500 Lbs.

Load cable - used to add payload to testbed-rear providing stability. It is intended that load is added to rear to move the C.G. behind the platform.

Flying Carpet Testbed - Cable Attachments



Platform - bottom view

Cable attachment points - attached to overhead beams with swivel mount, hoist rings. Two cables attach to the front ring and one cable attaches to the rear/per side.

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Flying Carpet Testbed - Next Steps

- Show static system to Shipbuilding Industry/Navy.
 - Maritech workshop July 2000.
- Partner with Industry/Navy to measure testbed, enhance system, procure and install dynamic control (mainly hoists), perform dynamic tests. (potential Phase 2 Maritech Project tasks?).
 - In-house winches could potentially be used but are small - e.g., own 1500 Lbs. winches, need 3000 Lbs. winches for performance tests.
- Demonstrate dynamic testbed in Shipyard Dry Dock.
- Partner with Manufacturer to build commercial Flying Carpet.