

INSPECTING HURRICANE DAMAGED ROOF IN WORLD'S LARGEST AIRSHIP HANGAR



BIG Goes to New Heights Safely Accessing 180' Hangar Ceilings
at Lakehurst Naval Air Engineering Station



BIG GOES TO NEW HEIGHTS SAFELY ACCESSING 180' HANGAR CEILINGS AT LAKEHURST NAVAL AIR ENGINEERING STATION



The 300 ft. Bronto S-90 lift on left, next to 135 ft. JLG boom lift on right.

Arcadis US was challenged to rapidly inspect the structural integrity of 180' arched ceilings within two massive hangars damaged by Hurricane Sandy. Banks Industrial Group was contacted to find a method for accessing the ceilings that would satisfy both safety and scheduling concerns. The recommended solution enabled work to finish a week ahead of schedule and below budget.

Scenario:

November 2013–Arcadis US secured a contract with the US Air Force Air Mobility Command to perform an inspection of the wooden structural support joists in two giant hangars at the Naval Air Engineering Station Lakehurst in New Jersey. The hangars were damaged when Hurricane Sandy slammed into the area.

During the 1920s, Lakehurst Naval Air Station, or NAS as it was previously known, was the center of US airship development and housed US Navy rigid airships. NAS is also renowned as site of the May 6, 1937 Hindenburg zeppelin crash. Antisubmarine patrol blimps operated from the base during World War II and were berthed in the massive hangars.

Airship Hangers 5 and 6 are historic buildings constructed in 1943 and are the world's largest single arch wooden structures. Wood timbers were used because wartime steel production was prioritized for weapons manufacture. Each immense hangar is 1,100 feet long, 300 feet wide, and over 180 feet high with gigantic retractable doors at each end. Today the buildings are used as a warehouse and operational staging area.



View of warehouse area from the ceiling.

Challenge:

Hurricane Sandy damaged part of Hanger 5's roof, which necessitated an inspection to see if the wood joists were structurally sound. Reaching the 183 foot arched ceilings, safely and promptly, proved to be difficult.

Scaffolding was considered, but would have been laborious and expensive to build within the allotted six-week timeframe. Manlifts could help, but only up to 135 feet maximum work height.

So how to reach the ceiling?

Solution:

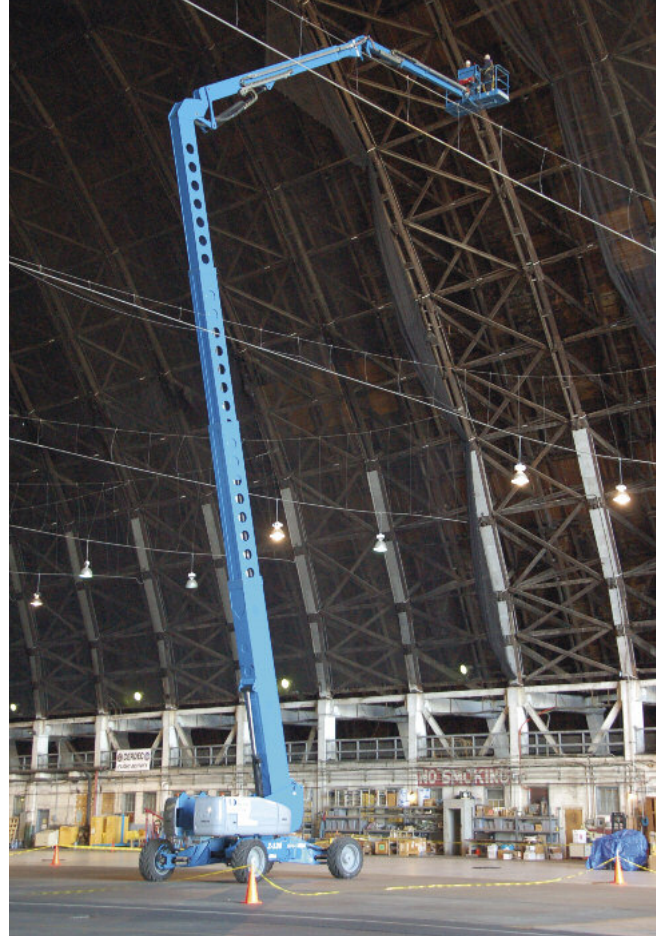
Banks Industrial Group was approached for ideas and proposed the safest and most efficient solution: A highly specialized Bronto S-90 Skylift with 300 foot vertical reach and articulated arm to extend up and over obstacles—one of just eight machines in North America. The Bronto provided a stable platform for inspection work, smoothly maneuvering within the arched structure and easily reaching the high ceiling.

However, the key to success goes beyond locating specialized equipment. BIG carefully plans and manages each project with the final outcome in mind. For the Lakehurst hangar inspection we established safety criteria, sourced the equipment, provided certified operators, and made sure things ran dependably from start to finish. Doing so removed the hassles of accessing an unusual structure and enabled inspectors to focus on the task at hand.

BIG also serves as a single-source supplier with a single point of contact. This provided a convenient way for Arcadis to handle ancillary tasks necessary to complete the work and stay on schedule. In order to access the hangar ceiling, inspectors also required the removal of debris catching safety mesh suspended 130 feet above the floor. BIG was able to provide the labor to handle it as well as qualified operators for other manlift equipment.

Outcome:

BIG's consultation and project management assistance enabled Arcadis to save time and money during the inspection. Work was finished a week ahead of schedule and below the proposed budget.



Removing protective mesh for inspection work.

Our client had the following comment to owner Gary Banks and General Manager Dave Arnholt regarding the project:

"I have had many doubts during this process as we have attempted to figure out how to perform this work. Since you and Dave have become involved, I have had a much higher degree of confidence that we can get this done for the budget we have established with AMC."

Banks Industrial Group solves problems!



Gary Banks is the President of the Banks Industrial Group (BIG), and **Dave Arnholt** is the Product Manager. Since 2003, BIG has kept industrial facilities across the northeast operating efficiently, reliably and safely through their preventative and corrective maintenance services. Visit us at www.banksindustrial.com to learn more about how BIG can help you solve your industrial problems.



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