Coordinate Metrology Society
Coordinate Metrology Systems Conference 2014
North Charleston, South Carolina | July 21-25, 2014

CMS-2014-009

Flight In Factory

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Published by the Coordinate Metrology Society. Reference number CMS-2014-009.
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2014 CMSC Abstract

Flight In Factory

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A finished aircraft is supported by only the lower wing surfaces. A large array of well placed Air Cradle support pads suspend the aircraft from the ground. No weight on the landing gear. In fact the landing gear is retracted. The merging of current Computer Aided Metrology Systems (CAMS) with Spatial Analyzer have improved the Large Area Rapid Scanning time of this aircraft to just one hour ! Measuring the aircraft under simulated flight loads create a very accurate “Aero Dynamometer” true aero surface map.

Positions of one or more of the aircraft may be measured, in order to determine how the aircraft will perform, under the computational fluid dynamic (CFD) approved loads, on the lower wing surface. The PowerPoint presentation has clearly defined Laser Radar, Laser Tracker, Faro Laser Scanner, and Digital Photogrammetry applications merged by NRKs Spatial Analyzer (SA) software.

No Aircraft fuel or wear and tear on the engines are required, thanks to this simulated “Flight In Factory” process.
The engine thrust twist to the wing surfaces is simulated with a cantilevered weight “Thrust Bar” attached to the aft side of the engines.
True wing shape (and twist) , Vertical Fin, Rudder , and Horizontal Stabilizer aero surfaces are measured and recorded.
The aircraft may be readjusted and or redesigned, based on these measurements, in order to reduce aero drag, on the aircraft.

Boeing patent # US 7,672,817 B2