

Helping to Prevent Excursions

Real-Time & Objective

The BAT™ accurately measures and reports the effect of contaminant (snow, slush, water, other) on aircraft ASBS performance and calculates maximum ASBS braking availability values. Results can be instantly disseminated to all authorized stakeholders.



The BAT™ is the only solution in the world to objectively and accurately measure and report the effects of contaminant on aircraft anti-skid wheel braking performance.

The objective of the BAT™ is to provide reconcilable, meaningful, safe/'accurate' and use-able aircraft ASBS braking availability values (MuAC coefficient) to provide an objective 'Measurement' result that can be used to help pilots calculate safe stopping distance requirements before landing (or, for a rejected takeoff), on contaminated runways. Our industry realizes that the understanding of actual Aircraft Anti-Skid Braking performance in contaminated conditions is limited, but very important for improving aviation safety.

Current technologies for measuring runway conditions consider the relationship between a friction test tire and the runway surface but cannot properly represent aircraft anti skid braking performance in contaminated conditions.

The BAT™ accurately measures and reports on the effect of contaminant (snow, slush, water, other) has on aircraft ASBS performance to support TALPA/Global Reporting Format submissions and to disseminate results and information to various stakeholders.

The BAT™ replicates the actual ASBS braking performance of an aircraft. The addition of 'ASBS braking available' measurement to runway condition reporting improves air safety by providing pilots with a timely and important (and previously unavailable) input in the land/do not land and take off decision making process.

PNEUMATICS & HYDRAULICS

Pneumatics: The recoverable pneumatic system performs two tasks: The actuation of the chassis airbags to allow for ease of loading/unloading, & also actuates the engagement and retraction cycle of the BAT™ wheel carrier assembly.

Hydraulics: The closed-loop hydraulic system is pressurized to a predetermined operating pressure to perform the brake-caliper engagement and retraction sequence on the rotor. (The frequency of brake-application pressure is controlled by the ASBS algorithm, and all brake pressures are monitored by electronic pressure gauges.)



BAT TECHNOLOGY & COMPONENTS

Ford 450 – 440 HP

BAT Pneumatics & Hydraulics

BAT Cylinder

BAT Wheel Carrier and BAT Wheel

ASBS (Anti Skid Braking System)

CFME (Continuous Friction Measuring Equipment)

Firmware & Software

BAT™ CYLINDER

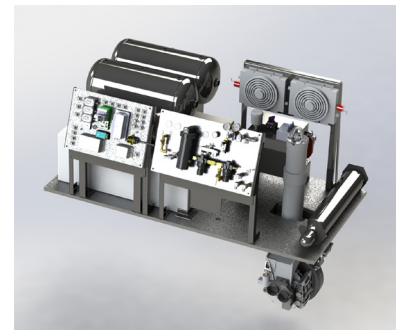
The pneumatically-actuated BAT™ cylinder is fastened to the frame of the truck and provides a regulated down-force of approx. 2500 pounds to the wheel carrier assembly which engages the runway. The down-force is measured utilizing strain-gauges located in the axle of the wheel carrier. This data is logged and eventually contributes to the calculation of braking availability. The BAT™ cylinder is equipped with an emergency retract feature.

BAT™ WHEEL CARRIER

The BAT™ wheel carrier is the framework that fastens to the shaft of the BAT cylinder, and it consists of:

- Custom-designed brake caliper that engages the brake rotor
- Custom-designed axle (equipped with two internal strain gauges)
- Custom-designed duct-work/manifolds to rotor for cooling
- The BAT Wheel assembly

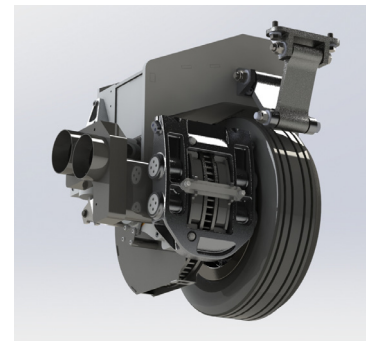
Additional sensors: torque-load sensor, horizontal-drag (strain gauge located inside the axle), infrared temperature sensor to monitor brake rotor temperature, and wheel speed sensor.



BAT™ WHEEL ASSEMBLY

The BAT™ wheel assembly consists of:

- Radial aircraft tire: 18"x4.4"x 12 ply TL tire, Nitrogen-filled at 175 PSI
- Custom fabrication that adapts and fastens the brake rotor into position
- High performance brake rotor
- Internal wheel speed sensor components



THE BAT™ IS COMPLIANT WITH FAA TAKE OFF AND LANDING PERFORMANCE ASSESSMENT (TALPA) AND GLOBAL REPORTING FORMAT (GRF) INPUT REQUIREMENTS SUPPORTING RUNWAY CONDITION ASSESSMENT WITH OBJECTIVE MEASUREMENT. THE BAT™ IS AN EXCELLENT TALPA DECISION SUPPORT TOOL, PROVIDING OBJECTIVE INFORMATION ABOUT AIRCRAFT ASBS PERFORMANCE ON A CONDITION BY CONDITION BASIS.



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