

“Saved within the scale electronics, users can ‘set and forget’ their location details, and have the scales or load cells deliver corrected results for the end user.”

*-Patrick McIntyre,
Director of Weight & Balance Training*

REQUEST A QUOTE FOR
WEIGHT & BALANCE TRAINING

Intercomp[®]
advanced weighing technology... by any measure

Intercomp Headquarters

3839 County Road 116
Medina, MN 55340, USA
T: +1 763 476 2531
F: +1 763 476 2613

Intercomp Europe

Manor Farm, Manor Road
Shurlock Row, Berkshire RG10 0PY, UK
T: +44 118 932 0578
F: +44 118 932 1034

With additional offices in Germany,
Chile and Singapore

intercompaviation.com



Location and Weight

What is weight? Weight is a force exerted on the mass of a body (airplane) by a gravitational field. Weight is dependent on the acceleration of gravity, and although most express gravity as a constant (32 ft/sec² or 9.8 meters/sec²) one must increase the order of accuracy when weighing aircraft. Gravity is opposed by centrifugal force caused by the earth's rotation, and the effects of that force is greatest at the equator. Applying this opposing force to our scale weights is done by using the **Latitude** correction for the weighing location. We also know that gravity is less as we gain **Altitude** (moving away from the earth's core), so one must apply this correction also. This provides the most accurate weight during weight and balance as required in the aviation field.



Effects of uncorrected Latitude and Altitude upon weights can be illustrated with an example of weighing a B747 of 373,300 lb (169,326 kg), where **0.1% error is 373 lb (169 kg)**

Non-corrected weights:

- Bogota, Colombia: 4.7 degrees Latitude at 5000 ft, 374,457 lb, **1157 lb of error**
- New York City, US: 40.7 degrees Latitude at sea level, 373,486 lb, **186 lb of error**
- The delta for the same aircraft's uncorrected weights is **971 lb, or over 2 times allowable error**



As latitude and altitude corrections are known figures, finding the basic weight center of gravity is now just a bit of measurement and straightforward mathematics.

Understanding the effects and magnitude of these corrections is the first step in conducting accurate weighing, but thankfully technology enables this to be made even easier. Built into [Intercomp platform scales](#) and [top-of-jack load cell kits](#) are latitude and altitude corrections. Saved within the scale electronics, users can “set and forget” their location details, and have the scales or load cells deliver corrected results for the end user.

[Find more information on Certified Weight & Balance Training](#)

[Find more information on Aircraft Scales & Load Cells](#)

Intercomp offers both Military and Civilian focused training for military staff, engineers, contractors, and FAA A&P licensed civilians. Courses are led by instructors benefitting from three decades of weighing experience in both military and commercial venues. Leveraging a background of weighing hundreds of aircraft, classroom attendees have access to a knowledge base in equipment and operations that is unmatched within the industry in quality, depth, and experience.