**Dimensional Analysis Pains in Real Life – A History**

<http://mentalfloss.com/article/25845/quick-6-six-unit-conversion-disasters>

**1. Can you imagine losing $125 million thanks to a little metric system error?** That’s exactly what happened in 1999 when NASA lost a Mars orbiter because one team used metric units for a calculation and the other team didn’t. Guess they didn’t learn from their previous mistake…

**2. … just the year before, NASA lost equipment worth millions thanks to shoddy conversion practices.** SOHO, the Solar Heliospheric Observatory, a joint project between NASA and the ESA (European Space Agency), lost all communications with Earth. After about a week of trying various things, communication was restored and everyone breathed a sigh of relief. Among the problems thought to have caused the sudden blackout?

*• There was an error in the spacecraft’s navigation measurements of nearly 100 km, which resulted in a much lower altitude than expected and led to the vehicle’s break-up in the atmosphere.
• The conversion factor from English to Metric units was erroneously left out of the AMD files.
• Interface Specification required that the impulse-bit calculations should be done using Metric Units.*

**3. In 1983, an Air Canada plane ran out of fuel in the middle of a flight.**The cause? Not one but two mistakes in figuring how much fuel was needed. It was Air Canada’s first plane to use metric measurements and clearly not everyone had the hang of it yet. Luckily, no one was killed and only two people received minor injuries. That’s amazing considering the flight crew thought they had double the fuel they actually had.

**4. In 1999, the Institute for Safe Medication Practices reported an instance where a patient had received 0.5 grams of Phenobarbital (a sedative) instead of 0.5** grainswhen the recommendation was misread. A grain is a unit of measure equal to about 0.065 grams… yikes. The Institute emphasized that only the metric system should be used for prescribing drugs.

**5. An aircraft more than 30,000 pounds overweight is certainly no laughing matter.** In 1994, the FAA received an anonymous tip that an American International Airways (now Kalitta Air, a cargo airline) flight had landed 15 tons heavier than it should have. The FAA investigated and discovered that the problem was in a kilogram-to-pounds conversion (or lack thereof).

**6. Even Columbus had conversion problems.** He miscalculated the circumference of the earth when he used Roman miles instead of nautical miles, which is part of the reason he unexpectedly ended up in the Bahamas on October 12, 1492, and assumed he had hit Asia. Whoops.