

BETTER SPEED

Cyclists Who Buy Aero Wheels Don't Want Aero Wheels

It's a given, buying wheels is a pain.

Cyclists don't want aerodynamic wheels: They want fast, light wheels. Wheel design advanced through carbon fiber pushed the envelope, while unfortunately staying confined by an industry adage *"width, depth, weight - optimize one, compromise the others."* This leads to a practical product offering: shallow to climb, mid to cover distance, deep to haul. The three depth approach is an easy out. Either meet specific demands (time trial / climbing) or offer conveniently compromised wheels lacking optimization of anything. Known compromise makes gear selection painful. It's a given, buying wheels is a pain.

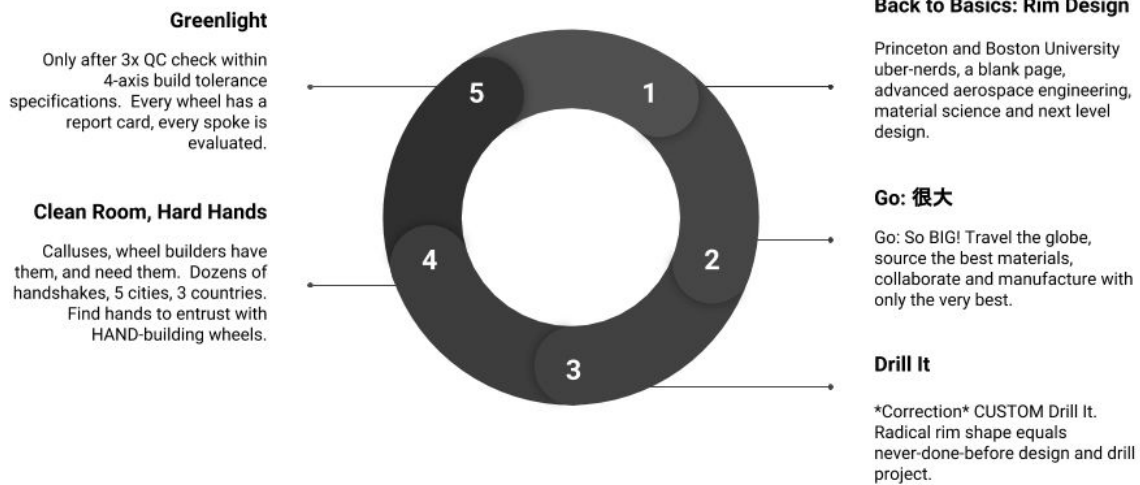
Does(Can) Ivy League Aerospace Engineering Benefit Cycling?

Develop *"the most groundbreaking wheels imaginable"* is more than a tad ambitious. Pile on the expectation of designing a *"radically different, undeniable"* solution to existing compromise is impossible. Impossible within the boundaries of cycling where *industry standards* are headwinds for progress, fortified by narrow experience and judgement. A step removed from cycling, armed with naivete and hubris, *possible* lives and thrives. Does aerospace engineering create freedom to design beyond what's considered possible, without compromise? Can better speed be sourced from outside cycling?

It's not Rocket Science.

The equation to recreate the wheel isn't rocket science. It's optimization in sequence of design, manufacturing, component sourcing, assembly and production audit protocol.

Optimization in Sequence

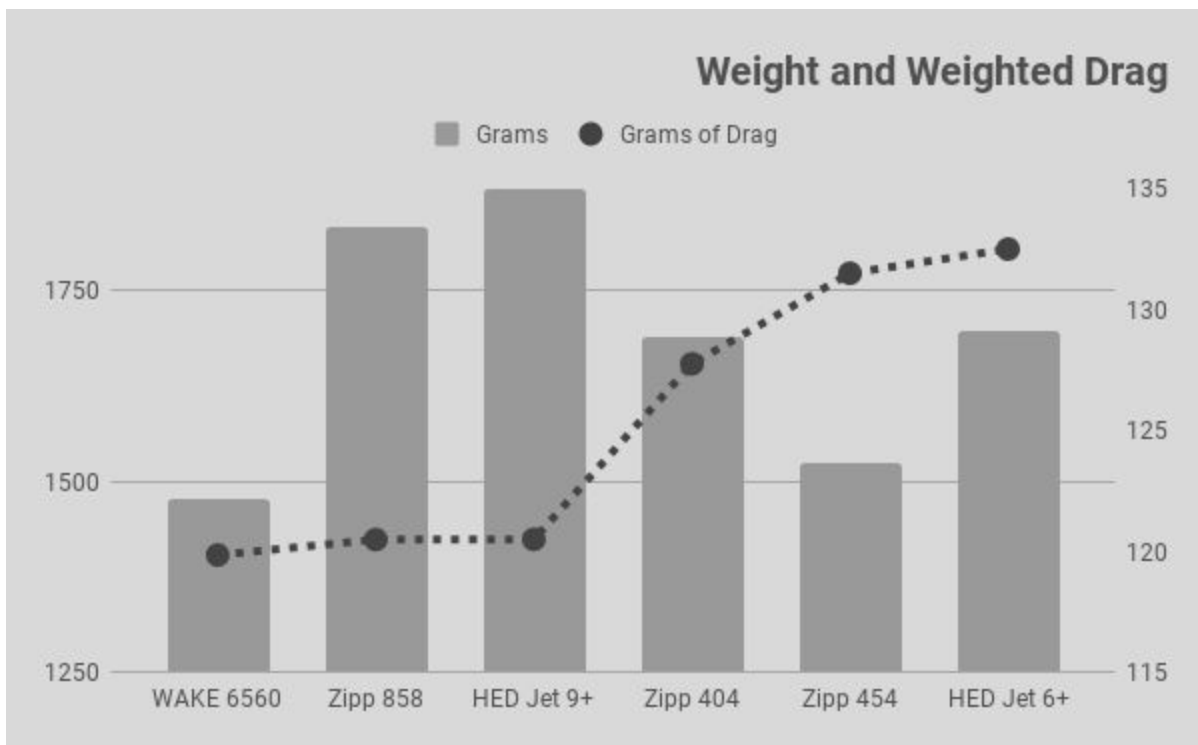


Ok, it's a bit like Rocket Science.

Mechanics, aerodynamics, and weight are optimization opportunities in rim-profile design. And, ok, aerospace engineering that marries this trifecta without compromise is like rocket science. Mechanically the design must increase stress migration and spoke force distribution while remaining durable, stiff, and responsive. Aerodynamically the design must yield lower drag and reduce the effects of vortex shedding. The weight of the design, incorporated into a wheel system, must remain not only lightest in category, but lighter than shallower profiles.

Mission Controlled

Advanced aerospace engineering - channeled through vetted manufacturing, sourcing, assembly and QC - facilitates better speed where compromise cannot. The design process at PRINCETON CARBONWORKS lead to the breakthrough of dynamic cross-section variability - WAKE - which utilized the elegantly simple trigonometric function "sine." WAKE yielded lower drag and reduced effects of vortex shedding by use of a constantly varying trailing edge. Additionally, Finite Element Analysis (FEA) verified that WAKE results in higher stress migration from the relatively weak spoke point to the relatively strong profile perimeter. Ultimately FEA optimized mechanical design, paired with advanced manufacturing, enabled a weight optimized layup schedule for the WAKE 6560 rim profile.



No Bells or Whistles.

Fast wheels that are light, no bells or whistles. Sorry, but actually there are bells and whistles. WAKE 6560s are tubeless ready, tape and valves included, with brake tracks optimized for use with SwissStop Black Prince pads, also included. Padded wheel bags are included as well, along with PRINCETON CARBONWORKS skewers. Finally, every wheelset is shipped with a build report for each wheel with analysis down to each individual spoke. About the spokes and nipples, they're Sapim, CX-Rays laced to external nipples, allowing for easy service.

Better Speed is Now.

We chose integrity at every step, in our relentless effort to move you forward with better speed. Now, it's up to you. Will you compromise?

PRINCETON CARBONWORKS