NAERO™ Inboard Drop Bars

Design & Test Methodology

Tired of embracing wind and directing it at our core we began with a simple hypotheses: Inboard drops are faster than straight drops.

First we created various prototypes in aluminum alloys 6061 and 7075 for proof of concept and to find agreeable shapes, sizes and bends. We kept tops unchanged to retain the safest, most stable and comfortable platform riders are used to (recommended by fitters and biomechanical experts) then we brought our drops inward -6cm, -9cm and -12cm in the most direct, efficient and practical manner under the hoods.

Next we made numerous trials with prototypes on several road courses at 200, 225 and 250 fixed watts (+/-3) with hands at hoods and again with hands in the narrow drops section for comparison. These trials were made in regular kit on typical road race bikes with popular tires on flattish out-and-back courses to factor out wind bias to the greatest practical extent. Results were consistently better than for straight drops alone.

We quantified savings again at the wind tunnel. Since we were concerned with real world riding, and unlike those trying to justify marginal gains, the least possible coefficient of drag (CdA) was not important to us. We tested in regular kit with an experienced but non-pro rider on a round-tube frame with bottles. Tests were conducted at various wind angles (yaw) again with hands at hoods and repeated in the drops. Comparing these data we not only supported our road results, but we isolated gains from hoods to drops. Extrapolating these results to the 40k TT standard we released our findings in terms of seconds saved and watts saved at moderate yaw and headwind commonly experienced in real world riding. All else equal, and in the interests of conservatism, our graphs represent the minimum savings riders may expect bringing hands in from 42 to 33cm (a greater than 21% reduction) tops to drops.