



THE LIGHTNING STORY

Unlike all other bicycles, which are based on an idea over 100 years old, the Lightning employs a modern, high-tech integrated design, resulting in a bicycle that is:

- Three times more comfortable
- Twice as safe
- 30% Faster
- More fun than you've ever had on two wheels!

COMFORT

The Patented **Lightning** ergonomic seat design places the rider in a naturally relaxed position, and gives full support for an incredibly comfortable ride. First, the seat bottom is at least three times larger than the

seat on any upright bike; this means the pressure applied to your rear is only 1/3 that of an upright bike. Next, the shoulder high seat back supports you like no other bike can, eliminating almost all stress on your back. Additionally, the natural upright position means that almost no weight is placed on the neck, shoulders, arms, and hands, reducing or eliminating pain and soreness in these areas. And finally, the nylon mesh and cantilever of the seat absorb road shock, further helping to increase comfort.

"I've become convinced that the recumbent is the bike of the future. It is comfortable to ride for long periods, and it won't

Overall Comfort Rating

LIGHTNING

UPRIGHT

An independent study performed by Randy Ice, P.T., C. C. S. shows just how comfortable the Lightning is, when compared to upright bikes.

produce numb hands or crotch”- Dr. David Smith, MD, Bicycling.

“I’ve been a bike rider for 24 years and have concluded standard bikes have one basic flaw: they just are not comfortable. I haven’t ridden my upright bike since I received my Lightning” - Ed S. Arizona.

“My back keeps getting better with the Lightning. I haven’t been to the Chiropractor this year, but my back feels better than it has in the last 30 years” - T. Johnson, Illinois.

SPEED

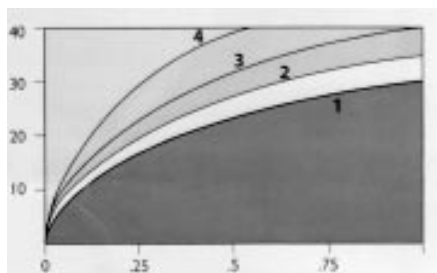
Over the past 22 years, the **Lightning** speed advantage has been proven by thousands of miles of road and race experience, including the following competition victories and world records:

- *First HPV (Human-Powered Vehicle) to break 50, 55, and 60 mph (3 consecutive years).*
- *Low altitude top speed of 64.2 mph.*



Rider: Pete Penseyres
Winner of four stages in the
1995 Paris-Brest-Paris

- *Seattle to Portland record holder—192 miles in 7-1/2 hours (26 mph average).*
- *San Francisco to Los Angeles record—400 miles in 18 hours.*
- *Race Across America record holder, 2910 miles in 5 days, 1 hour (24 mph average).*



- 600 miles in 24 hours
- Winner of four stages in the 1995 Paris-Brest-Paris.



Rider: Carl Sundquist

What's more amazing is that some of these records were set using the production P-38 frame, the same bike ridden by thousands of delighted customers, with an added F-40 fairing.

WHY SO FAST?

This speed advantage is partly due to the recumbent seat position, which presents less frontal area to the wind. As a result, speed increases 10 to 15% compared to a standard road or mountain bike. Addition of the optional Zipper fairing produces an additional 10% speed advantage. For experienced riders, the F-40 fairing can be added to the P-38 or R-84; this results in speeds that are as much as double an ordinary bicycle's performance.

Finally, due to our exclusive patented designs, only

Lightning has set world records using production bikes.

HILL CLIMBING

Forget what you may have heard about other recumbents not climbing well. The efficient **Lightning** frame designs and efficient seat position deliver excellent climbing performance—equal to or better than a comparable upright bike on 90%



Lightning R-84, ridden by Andreas Weigel, Winner, USCF Time Trial Series, San Diego

of the hills you encounter. It should be noted, however, that it takes a few weeks to develop the muscles and coordination needed for top Lightning hill-climbing performance.

"Just completed a 19 day tour of Switzerland on the Lightning. I cranked up five major Alpine passes in three days" - John R. , Germany.

"Knows how to climb" - Bicycling, Nov. 1998

IN CASE YOU WERE WONDERING...

If the **Lightning** is so great, why don't Olympic and professional bike racers use it? The UCI (International Cycling Federation) banned recumbents from competition 60 years ago because of their inherent speed advantage. Because of the UCI restrictions, the standard bicycle most people ride today has changed very little since its inception over 100 years ago.

SAFETY

Braking distance is about 1/2 that of upright bicycles, and the possibility of going over the handlebars is eliminated. This is a result of the low center of gravity, and the 45% front / 55%



The Lightning P-38 Aircraft, our P-38's namesake

rear weight distribution of the **Lightning** design. Additionally, the seat height and your eye level is similar to that of an average sedan. This fact, plus the upright head position, gives good visibility in traffic, and permits direct eye contact with car drivers; as a result, safety is maximized.

The ideal weight distribution, combined with a medium wheelbase and direct steering,



45%

55%

The Lightning P-38 weight distribution: key to good climbing and balanced

delivers superb handling, response, and ride comfort. This great handling, along with the unmatched braking performance, makes it possible to avoid almost all unsafe situations.

"Braking is fantastic, as nearly idiot-proof as it can be on a bike. Also, rough road performance is great for a recumbent" - Bicycle Guide, May 1986.

FUN TO RIDE

"Back at the office, it dawned on me that we took the Lightning on the same route I've done hundreds of times. But I honestly don't think I'd ever before had this much fun" - Bicycle Guide, March 1993.

"Someone recently wrote about how some bikes are "magic". Your P-38 is that for me, and I can't wait to get back on the road again." - Bob S.



**Lightning bicycles:
designed by experts**



**Lightning Stealth:
Fun and High Performance!**

EXPERT DESIGN

All **Lightnings** are designed by top aerospace engineers. **Lightning** takes cycling out of 100 years of dark age design, and into modern NASA-like engineering. **Lightnings** are hand built in California by skilled craftsmen possessing decades of experience building and operating jet aircraft, space satellites, and large rockets.

SIZE

The **Lightning** is smaller than most recumbents and the same size as a standard bike. This means it can be transported on most car racks and is easy to park and store. An added benefit of the medium wheelbase is a six foot turning radius.

RIDING A LIGHTNING BICYCLE

The close proximity of the cranks to the front wheel means your feet may hit the front wheel

during slow, sharp turns. With practice, it is possible to make slow turns. In any event, this is a problem only below 6 mph. Also, pedal extenders are available which make this much less of a problem. These extenders come standard on the Thunderbolt.

Due to the different seat position, it takes a few minutes to learn the balance of a Lightning. Most people are riding with no problem after one day. It may take somewhat longer for your muscles to become accustomed to the different position and develop an efficient cadence. After one month, most riders are proficient enough to surpass their best performance on a standard bike.

Because the seat is fixed to the frame, the crankset adjusts back and forth to accommodate riders of different heights. On the Stealth, both the seat and crankset adjust to fit almost any rider.

Because of the high bottom bracket, your feet will NEVER scrape the ground while cornering.

The long chain gives the benefit of NEVER having to adjust the front derailleur while shifting the rear derailleur.

OPTIONS AND ACCESSORIES AVAILABLE

FRAME SIZE The Stealth and Thunderbolt come in two frame sizes, combined small/ medium, and large/XL. The P-38, F-40, and R-84 are available in four frame sizes for a custom fit. To maintain proper fit and optimum handling, the wheelbase, seat height, and stem are all proportionally larger for the larger frame sizes.

GENDER The small and medium sizes are designed mainly with female proportions in mind; the large and XL sizes for male proportions.

ZZIPPER FAIRING



This small and lightweight fairing gives a 10% increase in speed. It quickly and easily attaches to the brake levers.

LOW DRAG PANNIERS



Custom designed for the Lightning—they do not increase wind resistance like other panniers. They are constructed with an aluminum framework, and tough Cordura nylon. Capacity: 2,000 cubic inches. Weight: 3 lbs.

SEAT BAG



Custom made for the Lightning, this bag quickly and easily slips over the top of the seat to carry everything needed on a day ride.

CLOTHING Custom made from Nylon/Lycra for use with recumbents. Because of the

superb Lightning comfort, no padding is needed in the six panel shorts. The Jersey has a long zipper for cooling, and two pockets on the sides, giving ease of access while riding, as well as good looks. (*Our clothing is shown in the photo on page one of this brochure.*)

FENDERS Matched ESGE fender sets are available for all Lightning models. Constructed from tough plastic laminated over aluminum, with stainless steel mounting hardware.

PLUS THESE COMMON ACCESSORIES ARE EASILY ADDED Water bottle cages - Generator sets or battery operated lights - Most types of rear racks and bags - Most Cyclometers.

NOTES ON THE LIGHTNING FRAMESETS

1) A Lightning Frameset includes seat, stem, handlebars and chain idlers. The Stealth frameset also includes the headset. The R-84 includes the rear hub and headset.

2) Only certain components will work in some areas:

Front Brake: Only certain brakes will work, due to brake

cable interference with the chain. Please contact us for detailed information.

Rear Derailleur: A long-cage rear derailleur is normally needed for the chain to clear the frame.

Brake Levers: Touring or Mountain type levers work best.

Front Wheel: See the spec sheet to see what size wheel is used for each particular model, and frame size. The front wheel is not included in the basic frameset, but can be ordered separately.

3) The handlebars are available in either a drop or V style. Grip Shift shifters only work with the V-style handlebar.

4) If the drop handlebars are used, the brake levers work better if they are bent

downward. Instructions for bending them are included, or the brake levers can be purchased separately.

5) All threading is English, 135mm rear dropout spacing, except the R-84 is 130mm.

ADDITIONAL ITEMS TO CONSIDER

- The frame is built to carry 50 lbs of baggage; however, be aware that most racks and bags cannot carry more than 30 lbs.

- Rider weight limit varies from 160 to 300 pounds, depending on model and size. See Individual bike specification sheets for more detailed information.

- The frame and seat are covered by a 5 year warranty.

