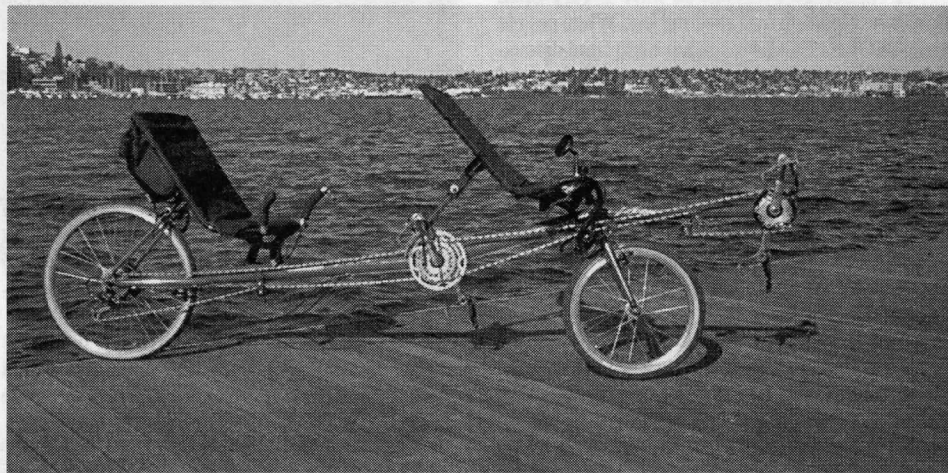


Feature Story—Recumbent Tandems



The Screamer—photo courtesy of Rans



The Double Vision—photo courtesy of Greg Bower

The ATP Double Vision and Rans Screamer: Two Tandems Face Off!

by Robert J. Bryant

When we discuss 1996 in the realm of recumbent history, the year will undoubtedly be remembered for its marque on tandems. In past years, few tandems have been available and those were custom, one-off or prototypes. The joy of recumbent tandeming is now being spread far and wide. We're excited about this new market. For one thing, it has the potential to bring recumbent pleasures to wives, kids, families and friends.

Just after mailing the buyers guide issue, the RCN crew hopped on a plane to hang out in LA for a few days, get some sun and try some bikes. Our LA test bikes were supplied by Jim and Linda Wronski from People Movers, a shop that is one of the few places in the world where you can try out a variety of recumbent tandems as well as many other bikes we cannot seem to get for RCN tests—and boy did we try bikes!

THE CREW

Our LA crew were, myself, RCN publisher—Bob, RCN circulation manager—Marilyn, and test kids—Amy and Dan who had to be bribed with passes to Disneyland.

The bikes were the Rans Screamer and ATP Double Vision. The Screamer was a factory stock version and lists for \$3875. The Double Vision was the R-82 with Independent Pedaling System (I.P.S.) and lists for \$3800 (base price \$3400).

TANDEM TECHNOLOGY

The tandems in this test are of the LWB¹-rear and SWB/MWB¹-front variety which is proving to be the most manageable configuration. This is a design idea that came about a few years ago with the Kurt Wold tandem that was brought to market by Steve Delaire as the Companion tandem. During 1995, ATP and Rans designed double versions of their single bikes in the Double Vision and Screamer, both of which are the excellent new choices for the tandem rider.

FRAME/BUILD

Our two test tandems were finely crafted, impressive flagships from both ATP and Rans. ATP builds two tandem models, the R-82 and upgraded R-85. Rans offers only one model and framesets to dealers and custom-spec outfitters.

The Screamer has a more traditional triangulated frame that consists of a Stratus/Nimbus tail section, mated with an updated V-Rex front end and with the front wheel pushed out farther. The frame was designed to be as compact as possible with the stoker's pedals right under the captain's seat. This makes for near perfect weight distribution, however, this increases heel interference significantly. The Screamer's wheelbase is 74.5" and it weighs 45 pounds.

The Double Vision has a different design theory altogether. ATP tried to make its tandem even more user-friendly by extending the boom and moving the head-tube back, thus creating a true SWB front section. The monobeam frame drops down in the rear section for a less obtrusive "easy access" stoker seat. The Double Vision has more of a load on the front wheel, though it has virtually no heel interference. The Double Vision's wheelbase is 77", though it's adjustable as the frame telescopes based on stoker size (guide bolts keep the frame sections from twisting). The Double Vision weighs about 48 pounds with the 1.8 lb. I.P.S. option.

The Screamer is TIG welded by Rans of 2" 4130 CroMo top-tube with smaller secondary tubes. The welding quality of Rans bikes is excellent and the weld-beads are near perfection. This is a unique design with the open seat/chain stays and rear frame section which adds to stoker ride comfort. Screamer prototypes initially had some flex. Since first pictured in RCN, (RCN#30 pg. 27/BG photos/Rans brochure) the bike has been updated with some larger diameter tubes and stiffer seat struts. The frame is stiff in all the right places with a smooth and dialed ride. The Screamer stoker position is comfortable, though the frame does not have the vertical flex that the Double Vision offers (a plus for some, a minus for others). The Screamer captain position is back

behind the front wheel, so the ride is a bit smoother than the Double Vision.

The Double Vision has a TIG welded 2.5" (main) and 2" (boom) stainless steel monobeam frame design and is 2.5" longer in wheelbase (in most cases/telescoping frame). ATP R & D Engineer, Joel Smith, told RCN that for every inch the diameter of the main frame tube increases in size, the strength increases four times. The Double Vision is a unique blend of torsional stiffness, better than a diamond frame design, according to ATP, and just enough vertical flex to offer the stoker a very smooth ride. The captain gets jarred a bit more from being almost on top of the front wheel. Though the fat front tire, sling/mesh seat and integrated foam pad take the edge off.

Forks can be an important aspect of frame design, especially in recumbents where non-standard geometry and progressive design theories are found. The Double Vision has an oversize custom design tandem fork that is costly to build and has a geometry specifically set for the bike. With the Double Vision's captain placement, the custom heavy fork is a good idea. The ATP fork has a lifetime warranty to the original owner.

The Screamer uses a stock J & B CroMo fork² which is the same one found on the V-Rex, and incidentally, the Ryan DuPlex tandem. It's not a tandem specific fork; however, John Schlitter of Rans sees no problem in using it. He has inspected the AngleTech/Nobilette fork (custom tandem) and will stay with the J & B on factory built Screamers. Dick Ryan replied, "we've never had a problem using the J & B fork and it is very strong." The J & B fork is probably adequate, yet we'd like to see the beefier custom US made made fork on the Screamer. After all, it's a \$3800 bike.

STEERING/HANDLING

The Screamer comes standard with Rans "Flip It" fold-forward above seat steering (ASS). This is the finest tilt ASS we've tested. It's the same unit that is optional on the Rocket and V-Rex, though it works best on the Screamer. For the single bikes, the ASS strut angle seems to be designed for a more reclined almost "in your chest"



The Rans "Flip It" stem
photo courtesy of AngleTech

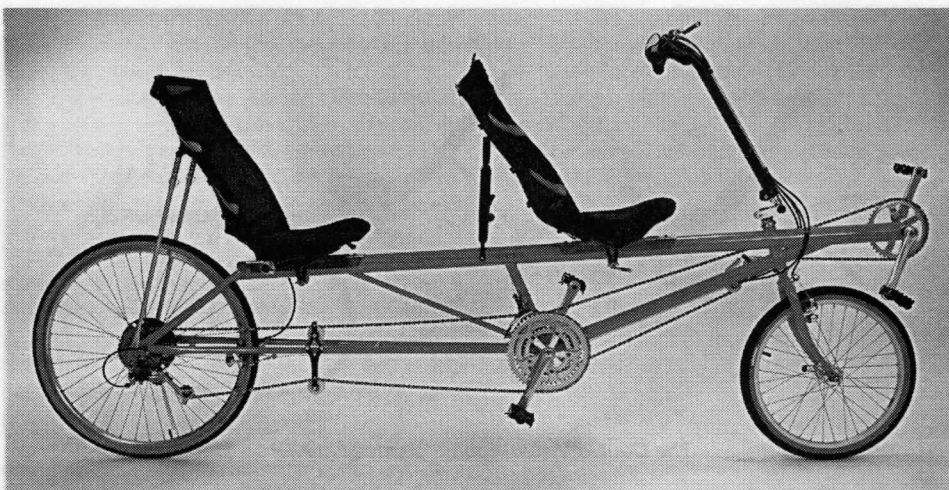
position. This is where we found the optimum handling "sweet spot." When we emulated the fixed ASS position with the tilt ASS on the V-Rex 24, the steering strut was too far forward and the handling-feel suffered. With the Screamer's wheelbase and added stability, the steering is less sensitive and the "Flip It" stem/riser is usable in more varied positions.

The Screamer has the best road-manners and steering geometry of any Rans model we've tried. The steering is neutral and quick. It is similar to the 26/20 single V-Rex, and the extended wheelbase increases the stability. The Screamer is the hot-rod of the group with an aggressive stance and smooth ride. The captain's position (behind the front wheel) and ASS instill confidence at speed. The Screamer gives the aura of a more performance-oriented bike, though the Double Vision is no slouch. For our testers, the Screamer was less user friendly than the Double Vision. This is primarily due to the higher top-tube, captain and stoker ease of entry/exit and heel interference.

Our biggest question about Screamer handling is how the bike would react to some serious NW low speed granny gear hills where you sway back and forth just to keep your balance. Our concern is that you'd have to pay close attention to the heel/front wheel overlap. Most seasoned MWB riders tell us this is not a problem after a few rides.

The ATP under-seat-steering (USS) is closer to the rider than on the singles as the head tube is right under the forward tip of the seat (ASS is not an option). The new double clamp handlebar/fork arrangement offers added security with the wide ATP bars. The Double Vision USS required more attention to the road than did the Screamer ASS, (we find this true on all USS bikes). The steering is much lighter than you'd expect and is stable, predictable and is better than any ATP model to date. The Double Vision steering has the slight oversteer that we love³, yet the bike is user friendly for serious riders, newbies, wives, kids and friends alike—once you become accustomed to the direct under-seat-steering on such a long bike.

Another interesting trait is the Double Vision captain seat position that makes it difficult to see the front wheel, which is an odd sensation. This combined with the USS made high speed maneuvers a bit more cautious.



The Rans Screamer—photo courtesy of Rans

DRIVETRAINS

The Screamer and Double Vision both have very good drivetrains and acceptable braking systems, however, if there was ever a need for hydraulics—this is it. Dynamic duos, trailer tow-ers, serious tourers/mountain climbers will need the stronger Magura Hydraulic brakes³. And if your budget can handle it—get them. Given the long cable runs and the dual riders, the cable actuated cantilevers will be working overtime in many situations. Of the stock brakes, we liked the Screamer's Ritchey cantilever brakes a bit better than the Double Vision's XC Pro—though the only complaint we have about top-of-the-line Suntour is that they are no longer made.

The Screamer comes with an Arai drum drag brake standard, whereas the Double Vision only has the hardware ready to add the drag brake⁴. An auxiliary drag-brake on a tandem is a good idea.

The Screamer comes stock with a refined and top-rated Specialized 32/44/54 tandem crankset, Shimano Deore XT derailleurs and GripShift SRT 600 twist shifters. The gear inch range is 28-117. The gearing is a bit high in the low end (28), and a bit low in the high end (117). This tandem is capable of spinning out that 117 high gear, yet could use a lower low for mountain climbing.

The Double Vision 28/40/54 crankset is an optional ATP designed and built I.P.S.⁵ tandem crankset and drivetrain assembly utilizing mainly readily available bicycle parts. This is a world class dual freewheeling crank that makes tandem riding a breeze. While testing it in downtown Seattle traffic we found that the stoker can power-on from a stop while the captain clipping in which speeds-up and smooths-out starts.

The Double Vision has an XC Pro front derailleur with a Deore LX rear. Shifting is done with SRAM SRT600 GripShifts. The Double Vision brakes are old stock Suntour XC Pro Cantilevers without a drag brake (but the hardware is in place⁶). The gear inch range is 26-117⁷. The low gear is lower (26) than the Screamer, but possibly not low enough for some riders. The high (117) is not high enough, as strong teams will spin-out.

Both tandems are spec'ed with top notch near bullet-proof wheelsets using Sun Rhino 40 hole rims (rear) with Phil Wood hubs and stainless steel spokes with screw-on freewheels. The front wheels on both have 36 hole 406mm 20" x 1.5" (BMX

size) with Phil Wood hubs.

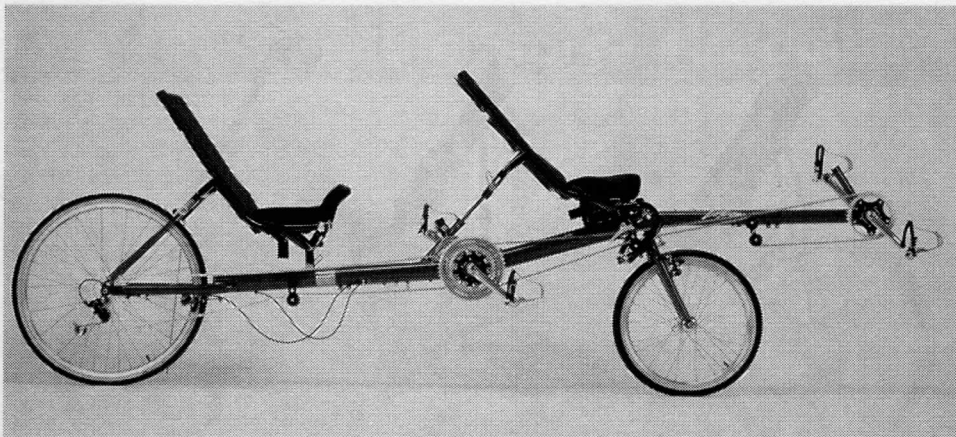
The Double Vision comes outfitted with an IRC Metro 100 psi. 26" x 1.5" tire in the rear and a ACS 100 psi 20" x 1.75" in the front. The Screamer comes with a Specialized Fat Boy 100 psi 26" x 1.25" tire in the back and an ACS 100 psi 1.75" tire in the front. On the AngleTech Screamers, Kelvin Clark specs 26" Fat Boys and Avocet Cross 1.5 inverted tread tires in the back. Not being a fan of the ACS tire, he offers ST Comps, Avocet Fasgrips 1.75 slicks and Haro 1.5" for front tire selections.

Both tandems are outfitted with acceptable bottom brackets, the Screamer has a Shimano UN51 cartridge and the Double Vision a YST cartridge. The tandem headsets are a Suntour XC Pro "Grease Guard" on the Screamer and a YST on the Double Vision. The clear winner here is the Grease Guard, though it is a discontinued item, its a very high-quality headset. If you feel the need to upgrade, remember the name Chris King for headsets and Phil Wood for bottom brackets—you will be able to feel the difference.

The Screamer's Deore XT derailleurs and Ritchey cantilevers are a definite upgrade from the Double Vision, however, this is more than made up for by the ATP I.P.S. Both the Double Vision and Screamer are outfitted with competent drive trains, with one notable exception—the chain.

On both models the shifting performance was only adequate with the long cable runs and Sachs freewheels, though the Phil Wood cartridge-sealed-bearing hubs are a worth the Hyperglide (cassette/freehub) sacrifice. The most likely problem is with the KMC chain used by ATP and Rans. We've had problems with this chain on other recent test bikes. KMC chain can often be related to your chain resisting shifts, chain skip and stiff links. A Sachs Sedisport chain upgrade will improve the shifting performance. Many recumbent professionals including: AngleTech, Ryan and Easy Racers all agree that Sachs chain works better. AngleTech sells custom length Sachs chains for any recumbents bikes. Many dealers carry the common Sachs Sedisport chain. It works great with Sachs, Suntour and Shimano drivetrains.

We also have some concern over the amount of chain, chain management and new design forward spring loaded idlers on both tandems. There



The Double Vision—photo courtesy of ATP

have been updates on both bikes, so check with ATP and Rans if you have one of the first tandems delivered. Also, the ATP I.P.S. is an updated version and totally new for 1996. On a recent NW recumbent ride a new Double Vision experienced chain problems, though they seemed to be more a set-up issue (and possibly chain quality?). Only time and miles will tell how dependable the drivetrains will be. Setting the proper chain length, making sure the idlers are set-up correctly, and upgrading to a better chain is our best advice.

SEATS

Recumbent seats are the most important aspect of a recumbent bicycle. Performance is a widely debated, curious and often overstated subject. The true worth of a recumbent bicycle is found in the ultra high-tech recumbent seat, which needs to be both light weight and comfortable. Our test tandem seats vary in design theory and comfort—which can also vary by rider.

Both seats are great, though we found the newly redesigned Double Vision seat the most comfortable. It is a full sling mesh with an integrated foam base. The seat recline angle is very adjustable, more so than the Screamer. Long distance riders will agree that nothing soothes the hiney like a full sling/mesh seat. A foam base can be considered either a bonus or blasphemy—depending on who you talk to. For this rider, the foam base on the newest incarnation of the ATP seat is in a word fantastic. If you find yourself getting up every hour to relieve your rear, consider this seat. Double Vision riders aren't in the habit of getting up at stops. The ATP seats are mounted firmly and securely on the bike with standard quick release mounts at the base and back which adjust and pop-off easily. The seat frames have a low cross section that easily allows your legs down lower to hold the bike up at a stop.

The Double Vision stoker seat is a literal "throne" that holds new riders in nicely. If you let your wife pick the bike, you can bet this will be an issue and maybe the ultimate decision maker. The seat rails and horn hold you in on all sides without any pressure points. The rails make for a perfect mounting for the bar-end handlebars which will give new riders a sense of security. Double Vision seats are supported by CroMo struts which offer a firm feel when you need to hammer the bike.

The ATP captain adjusts via movable boom, incidentally, this is the longest boom on any ATP

model as the rear wheel is brought inboard to eliminate any heel interference. The stoker adjustment is via the telescoping frame, which is a real pain. The up-side is that you won't have any extra wheel-base that you don't need. ATP has a height range on stokers of 3'-6" and captains 5'3"-6'5". The ATP seats come with a lifetime warranty on the seat frame and one year on the mesh.

The Screamer is outfitted with the latest version of the Rans hybrid sling/foam base seat. Screamer seats slide on an aluminum track and are held with a quick release (Q.R.) under the seat base and dual ball-detent pins on the rear seat struts. Rans had reduced the size of the MWB seat base shell, although the large shell is now standard on all models. The comfortable mesh back gives full breathable coverage for even the tallest riders and offers more back support than does the ATP seat. The Rans seat-base is ergonomic and the foam rests freely underneath the nicely sewn Rans seat cover. The comfort on this seat base will be determined by the recline angle and the individual rider. Some find the seat base too hard unless they recline the seat as the more upright the seat, the more pressure goes on the tailbone. Just after our test, Rans upgraded the seat foam to a better quality 3" variety. With these upgrades we expect improved seat comfort.

RCN reader Jim Kellet just rode 2500 miles across the USA on his custom "Barcroft MWB" (homebuilt) with a new Rans seat. Jim had this to say about the Rans seat, "the RANS seat is by far the most comfortable seat I have ever ridden...and that includes the Lightning, Tour Easy, Linear, Vision, Horizon, Infinity, Presto and Ryan." The moral of the story is be sure to take the time and dial in the recline angle of your Rans seat.

The Screamer stoker seat is not as user-friendly as the Double Vision. With full-frame triangulation and a higher top-tube, climbing on is more of a chore. Once upon the seat, you will notice that the stoker handlebars (bar-ends) are narrow and comparatively low. Yes, the Screamer has USS for the stoker and ASS for the captain. Stokers are free to put their hands anywhere they please, though a longer/wider bar-end would improve the USS stoker position.

The early Screamer seat struts, especially for the stokers, flexed more than the ATP's. For this reason beefier 3/4" aluminum (Tailwind) seat struts have been upgraded to standard. Another area of consideration is the Rans quick release seat

mounts. We've heard rumblings about Rans seat quick releases (Q.R.) slipping under hard pedaling pressure. Rans feels this will not be an issue for 90% of riders. Rans' John Schlitter said that many riders may not have the Q.R. tight enough and should check that first. Rans improved the quick release quality last year and in early June, added a special nut to the Q.R. non-lever side which will allow it to be made tighter with less effort. Two reader Quick-Fixes are replacing the Q.R. with a bolt and lock nut and the other is to use non-skid tape (boats and skate-boards) on the seat track.

Rans offers custom boom lengths of up to a 2.25" addition for captains above 6' tall. This allows the captain's seat to be forward and/or laid back more. The Screamer seats come with a one year warranty.

Recumbent seat comfort is about as personal as the hineys that set upon them. Most recumbent riders will agree to the most comfortable seats, and the Screamer and Double Vision seats are both among the best available on recumbent bicycles today.

ERGONOMICS/USER-FRIENDLINESS

The Rans cockpit feels compact, yet comfortable as the ASS makes for a closed-in feel. It has an aggressive seating position that begs to be ridden hard and fast. The seat can be as upright or laid back as you need it, the bottom bracket is high enough, though not too high. The ASS offers versatile strut positioning and will accommodate a wide variety of user styles, though tall captains who like laid-back seats should opt for the custom longer boom to allow added "lounging space."

The Screamer is the ergonomic tour-de-force if you are an ASS/high-performance type of rider. The only potential drawback is the heel interference with the front wheel, as the wheel has really been pushed out. This is a design aspect that will find its way into the Rans MWB single line in years to come. Rans riders don't seem to be concerned with the heel interference issue.

The most "comfort-based" ergonomics come with the Double Vision. It has a luxurious feel and the dual cockpits seem stretched out and laid back more so than the Screamer. USS handlebar reach can sometimes be an issue with the single bikes, but probably not on the Double Vision as the bars are closer to the rider. ATP has brought the captain seat inward and made the boom longer. This has the head tube placed just underneath the forward tip of the seat and there is less heel interference on this ATP than any other model. The captain seat is relatively high, the position works well, though I haven't tried any high-speed mountain descents with it (potentially the most unnerving situation for a USS bike). The monobeam frame offers an unobtrusive rear section that seems to be open and inviting to everyone. The seat frame has stoker bars (ends) that will hold even the little ones into the seat. The Double Vision USS, new seats and total comfort aspect of this bike are very apparent to all who ride.

The stoker position variations are worth mentioning. Some SWB/MWB riders will find the Screamer has too much of a LWB position with a high seat and low bottom bracket. The Double Vision stoker bottom bracket is higher.

KID TEST

The RCN LA test crew came away with one distinct "Kid-Test" winner, the ATP Double Vision. The bottom line is that Grant Bower put many a test mile on the Double Vision prototype with now five year old daughter Laura as a stoker (a Double Vision Kid-Back stoker option is due out soon).

RCN LA test crew members Amy (age 7) and Dan (age 4) both stokered the Screamer, Double Vision, DuPlex and a brief stint on the Linear. Not always able to pedal, they demanded at least two test loops on each test bike and came away with a clear view of which bike they liked the best—the Double Vision! And Laura Bower and Amy and Dan Bryant have only met once, back in '93 and they didn't talk tandems.

RECOMMENDATIONS

The choices are pretty simple. The variations of Screamer and Double Vision models are enough to satisfy any tandem rider. If you ride a SWB/MWB and must have ASS—the Screamer is your choice, and not a bad one at that. The Screamer has the most stable feel of any MWB we've ever tried. Also, the ASS adds confidence to any high speed or aggressive tandem riding.

For more traditional tandem riders, the Screamer brings time proven tandem theories to a new recumbent design format.

If you are a USS fan, you have little (or BIG!) kids, or a non-cyclist husband, wife or friend, the Double Vision runs away with top awards for family use. The reasons are primarily the stoker "throne" that holds riders in so nicely, step over frame tube and that wonderful I.P.S.⁵ The Double Vision I.P.S. solves cadence differences, speed differences and your kids will love riding a recumbent tandem, possibly even more than you! And keep in mind the I.P.S. is a \$400 optional that we specified for our test as it brought the tandem prices closer together. The Double Vision base price is \$475 less than the Screamer.

The Double Vision offers a more laid back riding position⁸ and the question comes up, does this effect the riders attitude? Do USS bikes make their riders feel more laid back, more comfortable and possibly less-aggressive? I don't know, but the Double Vision is sure a great cruising machine

Are they perfect? The answer is probably not. The frame designs are pretty much dialed, as is the handling, but my guess is that these somewhat complex machines will require an update or two

along the way. Would this stop me from buying one? No, these are both great bikes.

Let's face it, recumbent tandems are expensive, though your recumbent riding enjoyment should at least double with a tandem. ATP and Rans have made selection easy with their varying design theories and model differences.

In closing, the design aspect that really came to light with this article is that *added wheelbase=stability*. If you haven't believed this in the past, we suggest that you go out and ride a V-Rex and then a Screamer; or a Vision and then a Double Vision, and you can see what a few feet of wheelbase can do. □

TEST NOTES

¹ LWB: Long-Wheelbase; MWB: Medium-wheelbase; SWB: Short-wheelbase.

² AngleTech, a custom-spec Rans dealer offers a custom Colorado, USA built Nobilette CroMo non-tapered tandem rated fork that is a duplicate in geometry and a few ounces lighter than stock. AngleTech also offers the Ballistic suspension fork for the Screamer.

³ Handling Defined: some recumbents are *neutral* steering and offer no feedback, yet just go where you point them. Example: Lightning P-38 with a 17" front wheel; Others have *wheel/fork flop*: describes a bike that has a very relaxed head tube angle and the front wheel/fork falls right or left and you have to apply steering pressure to keep it pointing straight ahead. The designers feel this offers improved stability at speed on SWB recumbents (and the occasional LWB). Example S & B and Turner SWB models. Our favorite is a *slight oversteer*: is the perfect median between the extremes. The bike points straight naturally, and requires no pressure to go straight, yet when you turn, the bike slightly glides you in and out of the turn. Handling such as this offers a euphoric sensation of being at one with the bicycle. The best examples have custom forks, rake and trail that have been dialed in. It helps if the manufacturer's goal is to achieve this trait. Examples: Easy Racer Tour Easy/Gold Rush Replica and Counterpoint Presto. To some extent the Rans V-Rex and Rocket also have this feel, though it depends on the wheel/tire combo.

⁴ AngleTech Screamers are fitted with Magura Hydraulic brakes. Some models also come equipped with Sachs disk drag brakes. The upgraded ATP Double Vision R-85 is outfitted with an Arai drag brake and Magura Hydraulics

⁵ I.P.S.—ATP's own Independent Pedaling System allows either rider to pedal while the other coasts. This system was custom designed for the Double Vision by ATP. AngleTech offers complete tandems with the similar I.C.S. Independent Coasting System that was designed for all tandems by Vertical Descent. Rans offers framesets to dealers with the I.C.S. modifications, however, the I.C.S. is not an option on complete tandems. The first major benefit of this system comes in the ease of starts. One rider clips in while the other powers. The second benefit would be if you have kids or a new or non-cyclist stoker. The third benefit is to have a cool whiz-bang gizmo that your riding buddies don't have yet. If any of this sound good, you'll love ATP I.P.S. or AngleTech I.C.S.

The downside of I.P.S./I.C.S., undoubtedly it brings drivetrain complication to the bike, added weight and a special system that many mechanics may be puzzled by. Serious tandemists may boo-hoo the system as not needed. Arguments against are: First, it may make your stoker (or captain) lazy. Secondly, I've been told that irregular cadence can create unwanted oscillations and "bounce" that you would not find with traditional tandem drivetrains.

⁶ Double Vision dealers can provide drag drum brakes and they are standard on higher end models.

⁷ The gearing can be altered using dealer supplied larger/smaller chainrings. AngleTech offers Sachs 3x7 equipped 63 speed Screamers that have wider gear ranges.

⁸ Even though both models have adjustable seat recline angles, the ATP seems to have an even more relaxed angle even in the most upright position. Both the Screamer and Double Vision offer riders the unique ability to dial in the recline angle and personalize the seat.

SCREAMER



Full Triangulation/2" main and down tubes
Aggressive Performance stance
Great components (XT, Phil Wood, Ritchey)
Aircraft quality fabrication
Best Rans seat ever
"Flip It" fold forward stem/riser
Excellent weight distribution and balance
Standard Arai drum drag brake
Simple tandem technology



High captain seat
Large turning circle
Lots of chain and idlers (KMC chain ⊗)
Seat clamps could use an update
(we have not tried the new Q.R. bolt, yet)
Lots of heel Interference
Won't work with small children
Stoker bars need attention
One model/few options

DOUBLE VISION



2.5" Stainless Steel Monobeam
User friendly/EZ stoker access
Luxurious riding positions
Great components (LX, Phil Wood, ATP I.P.S.)
Great new seats with integral foam pad
Custom designed USA built fork
Great for kids (child-stoker)
No heel interference
Perfect stoker bars



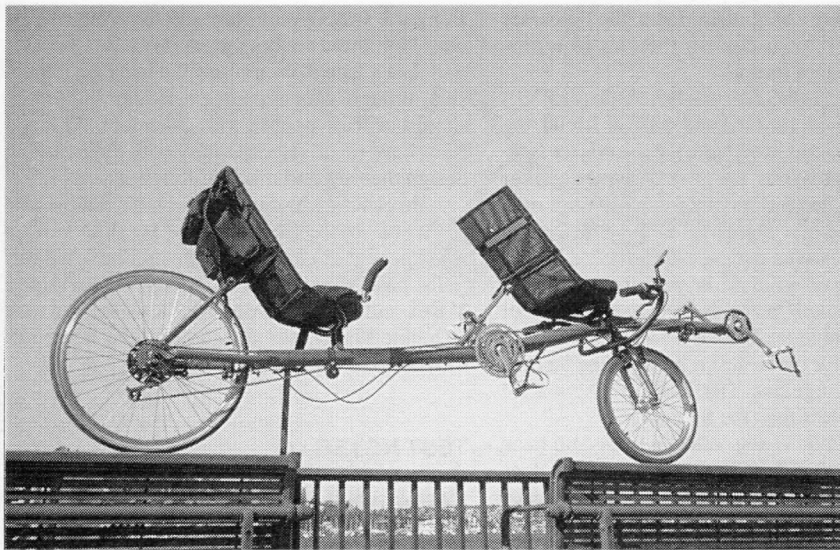
High captain seat
Large turning circle
Complex I.P.S. (first year for this system)
Lots of chain and idlers (KMC chain ⊗)
Telescoping frame/stoker adjustments are a hassle
High captain's seat (rides on top of front wheel)
Ultra long boom
No drag brake (on this model)

SCREAMER

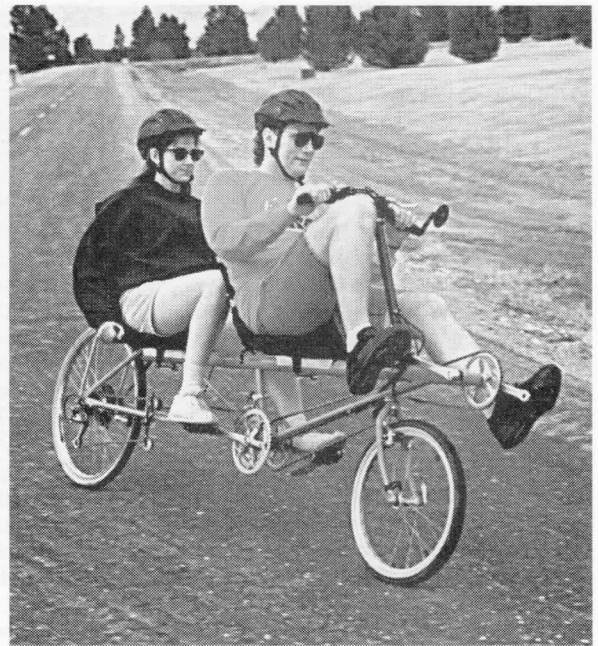
Frame/fork: Cromo/CroMo/ TIG
Seats: CroMo/fiberglass/foam/cover
Weight: #45
Wheelbase: 74.5"
Seat Height (captain): 25.5"
Seat Height (stoker): 23.5"
Head Tube Angle: 74°
Derailleur (rr): Shimano Deore XT
Derailleur (ft): Shimano Deore XT
Crankset: Specialized 32/44/54
Freewheel: Sachs 12-30/7-spd.
Shifters: SRAM GripShift SRT600
Gear Inch Range: 27.7-117
Brakes: Ritchey Logic cantilever/Arai drum drag
Wheel (rr): 26" Phil Wood/SS spokes/40°/Sun Rhino rim
Wheel (ft): 20" x 1.5" Phil Wood/SS spokes/36°/Sun rim
Bottom Bracket: Shimano UN51
Headset: Tange Levin
Colors: Hot Lips and Midnight Blue
Suggested Retail Price: \$3875

DOUBLE VISION

Frame/fork: Cromo-1020-304/CroMo/ TIG
Seats: 6061 T6 Alum./nylon mesh/foam/cover
Weight: #48 (46 + 2 for the I.P.S.)
Wheelbase: 77"
Seat Height (captain): 25.5" (at rail)
Seat Height (stoker): 21.5" (at rail)
Head Tube Angle: 72°
Derailleur (rr): Shimano Deore LX
Derailleur (ft): Suntour XC Pro
Crankset: ATP I.P.S. 32/40/54
Freewheel: Sachs 12-28/7-spd.
Shifters: SRAM GripShift SRT600
Gear Inch Range: 26-117
Brakes: Suntour XC Pro cantilever
Wheel (rr): 26" Phil Wood/SS spokes/40°/Sun Rhino rim
Wheel (ft): 20" x 1.5" Phil Wood/SS spokes/36°/Sun rim
Bottom Bracket: YST cartridge
Headset: Tioga
Colors: Red or Black Powdercoat
Suggested Retail Price: \$3400 + \$400 (I.P.S.)



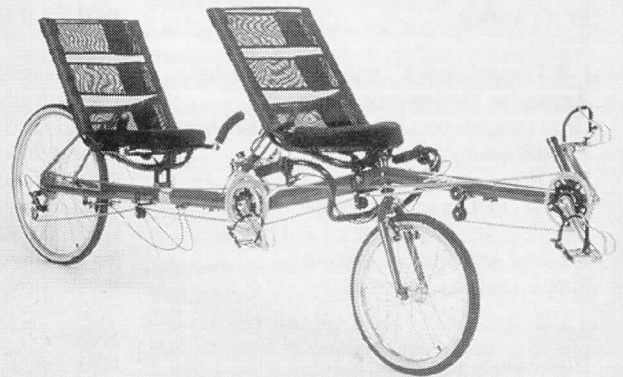
The ATP Double Vision—photo courtesy of ATP



The Rans Screamer
photo courtesy of Rans



The AngleTech Screamer 3x7 equipped GL63
photo courtesy of AngleTech



The ATP Double Vision with updated I.P.S.
photo courtesy of ATP

For more information on ATP Double Vision recumbent tandems, see your ATP dealer or contact: ATP, 952 Republican St., Seattle, WA 98109. Ph#206-467-0231, Email: <ATPVision@aol.com >.

For more information on the Rans Screamer, see your Rans dealer or contact: Rans, 4600 Hwy. 183 Alternate, Hays, KS 67601. Ph#913-625-6346.

For more information on custom-spec and I.C.S. equipped Rans Screammers, contact: AngleTech, 318 N. Hwy. 67, PO Box 1893, Woodland Park, CO 80866-1893. Ph#719-687-7475, Email: <Anglezoom@aol.com>.

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