



REDLINE PL-20 CARRERA

Testing the World's PRO Class Champion

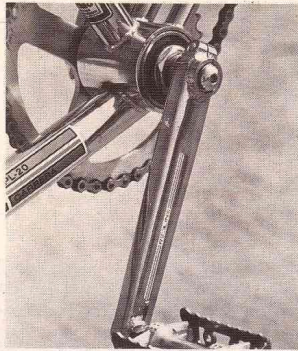
By Bob Hadley

Photography by John Ker

Red Line's reputation for producing top-quality BMX machines has always been well earned. Their latest top-of-the-line bike, the PL-20 Carrera, continues the tradition.

Our test crew just couldn't wait to ride the Red Line—it looks fast just sittin' there. Once it's rolling—stand back. Here Claveau uncorks a classic speedway slide on the Carrera. The PL-20 kicked up a lot of dirt and prompted a lot of smiles.

Over the years Red Line has managed to stay near the forefront of bicycle technology. It's true they haven't come up with a major technical breakthrough since the Flight Crank, yet Red Line has kept abreast of the times with their top-of-the-line PL-20 Carrera by continually refining the little things. Probably the biggest move, at least from the standpoint that it had never been done before on a major scale, was the utilization of both heli-arc welding and low-temperature brazing techniques on the same frame. Generally up until now, a frame was done either one way or the other, not both ways. Heli-arc welding is the choice for the front triangle as well as the crank/chain-stay joints and the seat-mast/seat-stay joint. The brazing is confined to the rear dropouts. Why? Brazing has some good qualities—among them less tempering of the welded joint and a cleaner appearance than a bead weld—but in order for it to hold up to the stresses related to a bicycle frame, it needs a large surface area to host the bond (hence the use of lugs on ten-speeds). On the PL-20



the dropouts are brazed into long slots in the stay ends. This gives plenty of surface area for the braze to hold. Brazing is inadequate for mere buttjoints, which are therefore heli-arc'd, but in this application it's ideal.

Not all the Pro Line frames are brazed—only the ones that come from Japan in the PL-20 Carrera kits like the one we tested. The American-made Pro Line frames are identical, except they are heli-arc welded at the stays.

Updated Cranks

Refinement isn't confined to the frameset. A pinch bolt has been added to the spindle boss on the new Flight Cranks. The pinch bolt eliminates any possibility of a sloppy fit between the crank arm and the spindle. It also cures the old problem of the sprocket-side spindle bolt continually coming loose. With the pinch bolts, the spindle bolts, in fact, become a redundant part. They're there more as a back-up supporter. It's interesting to note that the original Flight Crank prototypes also had pinch bolts, but they were cumbersome and not nearly as slick as the new design. Granted, with the addition of the pinch bolt the crank arm is slightly heavier than the old style, but the weight is barely off the rotating axis and not nearly as much of a handicap as, say, Shimanos' DX crank, whose bulky steel eccentric mechanism rotates at the outer limits of the crank arm's orbit. Whatever the weight gained by the pinch bolt (minimal), the degree of reliability is much better than before.

A new sealed bottom bracket rounds out the up-dated crankset.



The PL-20 Carrera—"P" for pro performance, "L" for lightning fast. In almost any language Carrera means racer. Make no mistake, this is serious race iron—only the brave need apply.

With regard to the new bottom bracket itself (and excluding the spindle), it's actually a tossup whether or not it's really an improvement. The bearings are hefty units press-fit directly into the frame. The fittings, which are anodized aluminum, thread over the spindle and adjust like a regular bottom bracket. No matter what, we never could adjust all the play out. The reason is simply because the tolerances between the outside diameter of the fitting and the inside diameter of the bearing weren't close enough. You could adjust away all the end-play—you could even bind up the bearings—and there would still be play. Adjusted properly it works fine, and you hardly notice the play while you're riding anyway, but it still has play. Trying to perform routine maintenance on the bottom bracket can be a bear. The aluminum fittings just can't take any abuse and after two or three overhauls they start to show it: rounded wrench-flats, stripped threads, and distorted diameters.

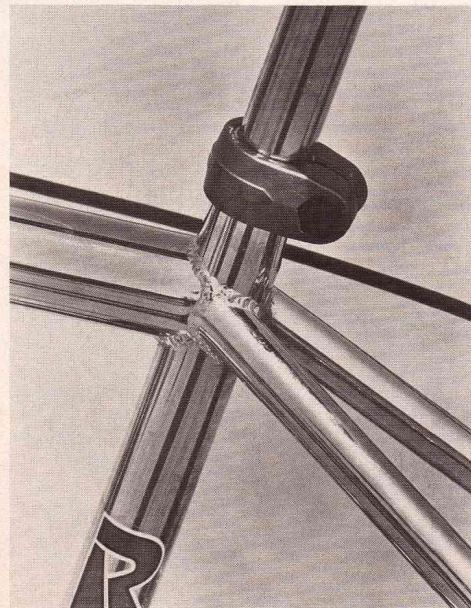
The bottom bracket bearings go into the frame with what's called an "interference fit." An interference fit means that the bearing itself is slightly larger in diameter (by a few thousandths of an inch) than the hole it goes into. This is done to insure that the bearing won't work loose and slip around. Most of the time when you're working with an interference fit between a bearing and a mounting hole, the

out of the Red Line hanger. It's the only way if you plan on reusing the bearings. Using only a hammer and punch with no heat is a sure way to waste at least one bearing in the Red Line bottom bracket. You see, if you must hammer out a bearing, the only way to prevent damage to the balls and races is by applying the force to the race which is secured to the component. If a bearing was pressed onto a shaft, for instance, then the removing force must be applied to the inside race so as not to transmit the pounding force directly through the balls. In the Red Lines' case, with both bearings installed it's impossible not to pound on the (unsecured) inner race. Pounding on the inner race dents the races. If the bearing is reused, the balls roll over the dents. That, in turn, dents the balls, which then proceed to put more dents into the races. Not good.

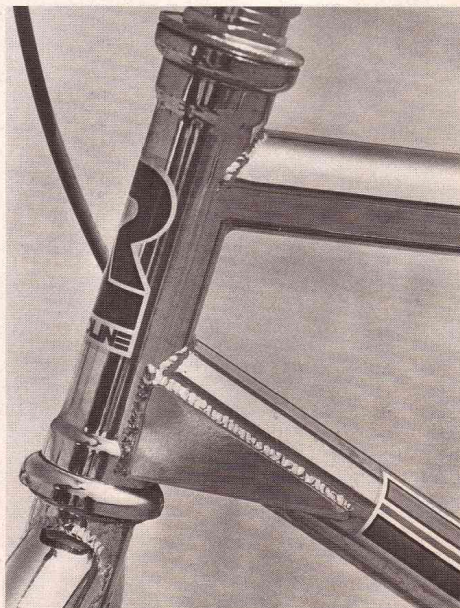
Your best bet is to use heat to relieve the interference fit and slide the bearing out carefully. The alternative is to try not to remove the bearings until you absolutely have to, at which time you should replace them with a new set.

It wouldn't be just if we didn't mention now that Red Line's one-

recommended method of removal is to apply heat to the housing area. The idea is that the heat expansion will relieve the interference fit and the bearing will slide right out. This is the best way to get the bearings



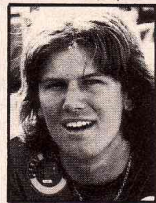
Classic Red Line, clean welds, cool chrome and class componentry. Performance for the perfectionist is what the PL-20 is all about.



Red Line pioneered the use of these small, triangular head gussets. You'll see them on a lot of other people's bikes—a sure sign of a hot idea. Welding and finish throughout are superb.



Claveau cranks the Carrera into an off-camber drop away. Just point and pedal the PL, it handles like a champ. It is.

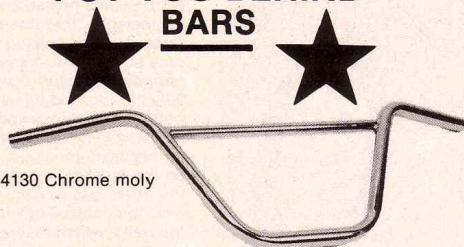


Brent Patterson

GET SERIOUS ABOUT RACING OR FREESTYLE BMX AND WE'LL PUT YOU BEHIND BARS



R.L. Osborn



Made of 4130 Chrome moly

STAR PROD. BMX

8583 Westminster Ave.
P.O. Box BH
Garden Grove, Ca 92642-5023

Send \$1.00 for stickers and price list.
(Dealer Inquiries Invited (714) 531-4064)

BULL SHOT

Super Cable Lube

The pros know:
This is #1!

© 1980

American Express Visa Master Charge Diners Club

1982 BMX Mail-Order Catalog

\$1.50

(Stamps accepted)
(\$1.00 refundable on first order of \$10. or more)

We'll ship merchandise C.O.D. within 24 hours (upon availability)



Byron's Bicycle Shop
299 Glenwood Lansing Road
Glenwood, Ill. 60425 (312) 758-4500

REDLINE PL-20 CARRERA

piece front sprocket is a work of art. It is lightweight and sturdy, and, combined with the Flight Crank, it's the simplest and most effective quick-change system ever designed. Period. I have to admit that even with the less-than-perfect bottom bracket, for a pro or a pro-sized rider, Flight Cranks, in my opinion, are the hottest cranks on the market. Curiously enough the front sprockets aren't available to fit 3/32-inch ten-speed chains, but we did notice that Stu Thomsen's factory bike was outfitted with such sprockets. Could this be the next refinement in the testing stage? In the meantime, other 3/32-inch chainwheel systems can be adapted to Flight Cranks if you have a special washer that can be purchased from just about any Red Line dealer. The stock gearing is 44/16.

The "Feel" of Performance

When it comes time to push it to the limits, a racer really has nothing except for his "feel" for the machine to rely on. Pushing it to the limits is when those little "signals" that a bike gives off become most critical. Those signals are the sensations that are transmitted to the rider through the various control mechanisms on the bicycle. Obviously, the handlebars and the pedals are the primary mechanisms, but often the seat and even the top tube contribute to the data pool, data which the brain analyzes in order to make determinations on the status of traction, balance, and flight trim. The process is an ongoing one: at every instant countless signals are transmitted from the cycle to the cyclist, who must instantaneously and instinctively analyze them and react accordingly.

Much of the basis for our handling evaluation is formed on our opinion of how well the bike tells us what is happening between it and the ground we're riding over. All this may seem pretty conceptual, to say the least, but saddle-based opinions are the only measure of performance characteristics we have. It isn't like a bicycle has an engine or whatever to put on a dynamometer to see how it performs. What you do is ride it, and the vehicle leaves you with a tangible impression of the bike's performance characteristics. Well, what the Red Line PL-20 Carrera did was stamp such a strong impression on us that it will be a while before we forget it. It's



The Kos gettin' narly at Narler. Big boys like Stu and Kos like the Carrera for its leg room, first class seating position and legendary strength and stiffness. Photo by Dave Epperson.

those little signals that the bike transmits—they're right there, loud and clear. The thing is you always know precisely where you are on the bike (your status of traction, balance, and flight trim), so you can gauge how much you've got left to go before you break the limits. When you're looking for what's left—that little extra bit of traction before you buy the farm—that's where the Carrera really shines. You can push this bike out to the limits and hang there almost indefinitely without ever worrying about getting a false signal. This is what they call a "trustworthy mount."

To understand the PL-20 further you have to separate those signals from the actual handling of the bike. Other bikes handle well, but they lack the keenness of Red Line's "signals." The Red Line's

steering is neutral in the classic sense. The bike feels stable and is easy to ride fast. Moreover, when you're driving hard into turns the bike doesn't show an overt tendency to wash the front wheel. Traditionally, when a front end sticks this well, the bike is a good slider too. This holds true for the Carrera. If you whip the back end around, it'll follow whatever your lead is: you want a little slide, you get a little; you want a big one, you'll get a big one.

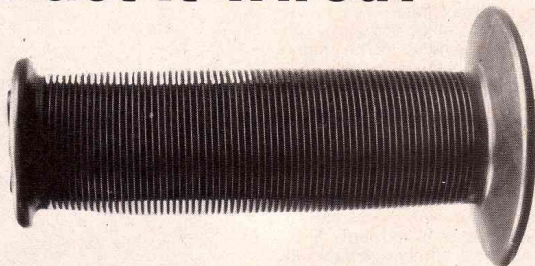
Conclusion

Only a few twenty-inch frame sets are designed for adults and the Pro Line is no doubt one of them (consider Red Lines' Stu Thomsen or Jeff Kosmala—they aren't exactly kids). Even though that is the case, the Carrera package is quite

When It Comes To Grips Have You Got It Wired?



The Option Is Yours with Super Soft Touch MUSHROOMS from ODI.



Almost 20 feet of mushroom webbed shock absorbers that grab your hands as they keep your hands and arms from fatigue. The MUSHROOMS have the extra added feature of allowing you to wire the grip to the bar with a hidden wire, providing you with the security of knowing you got it wired all the way to the finish line.

Performance Products Designed, Tested and Engineered for Toughness, Durability and Comfort

Available from your Local Dealer

Ornate Design, Inc.



3300 Kashiwa Street
Torrance, CA 90505
(213) 530-1207



In the air Carrera cruises—any altitude, any speed, any style, off any jump. Sudden surprises aren't one of Red Line's handling traits.

conservative. The handlebars are narrow (by pro standards) at twenty-four inches wide, the cranks are 175's (not 180's), and the fluted seat mast allows for eight inches of extension (just enough for medium-size riders who like to ride their seat high). Based on these dimensions we have to figure the

ideal size and age rider for the Carrera as it comes is about five-feet, five-inches, give or take a few inches, and about fourteen years old. For larger riders practically all that is needed is wider bars. The 175mm cranks are fine until you move up to the expert level, then 180's would be handy.



The Man and The Machine. The Carrera was specifically designed for Stu Thomson, but with the stock bars and cranks should fit almost any rider fourteen or over.

For sure five hundred bucks (approximate suggested retail price) is not cheap. Yet there is good value here considering how much things go for nowadays. And for your money what you get is the best Red Line ever and an out-of-the-box dream machine.

Red Line PL-20 Carrera Specifications

Frame: Red Line 4130 chrome-moly, TIG welded, American-style bottom bracket.
Fork: Red Line 4130 chrome-moly, TIG welded, chrome plated. Leg overall diameter 1-1/8". Rake 1-5/8"
Wheelbase: 36" to 37-1/4"
Seat tube angle: 66 degrees
Steering head angle: 71 degrees
Bottom bracket height: 12-1/8"
Wheels-rims: Ukai 20x1.75", alloy, 36-hole with polished sides
Spokes: .080/36 chrome plated
Hubs: Suntour low-flange, alloy
Tires: N.T.K.K. skinwall, 20x1.75" front and rear
Cranks: Red Line tubular chrome-moly, 401 series, 180mm, with sealed-bearing bottom bracket

Pedals: KKT Lightning alloy, with chrome-moly shaft
Chain: Izumi 1/2"x1/8"
Front sprocket: Red Line 44T alloy
Freewheel: 16T cassette-type with snap ring
Brakes: Dia-Compe MX-1000 with Dia-Compe touring lever and cable
Headset: Chromed steel with retainered balls
Stem: Red Line aluminum 4-bolt clamp with chrome-moly shaft
Handlebars: Red Line chrome-moly "V"-bars, 7-1/2" rise, 25" wide
Grips: Oakley .5
Seating: Plastic with 7/8" chrome-moly post, safety seat clamp and Suntour alloy post clamp.
Accessories: Three Red Line pads.
Overall weight: 24-3/4 pounds
 Approximate retail cost: \$550.00

ROKER VENTURES PRESENTS

The TROPICANA HOTEL
 Is Proud to Host the
**COCA-COLA JAG BMX
 WORLD CHAMPIONSHIP V**
 Indoors on Dirt!
 The World Comes to Las Vegas to be a Winner

Coca-Cola

JAG BMX

JOX JAG by
 Thom McAn

WORLD
 CHAMPIONSHIP
 V

M
 NETWORK

WORLD
 CHAMPIONSHIP
 V

PREMIER
 HELMETS

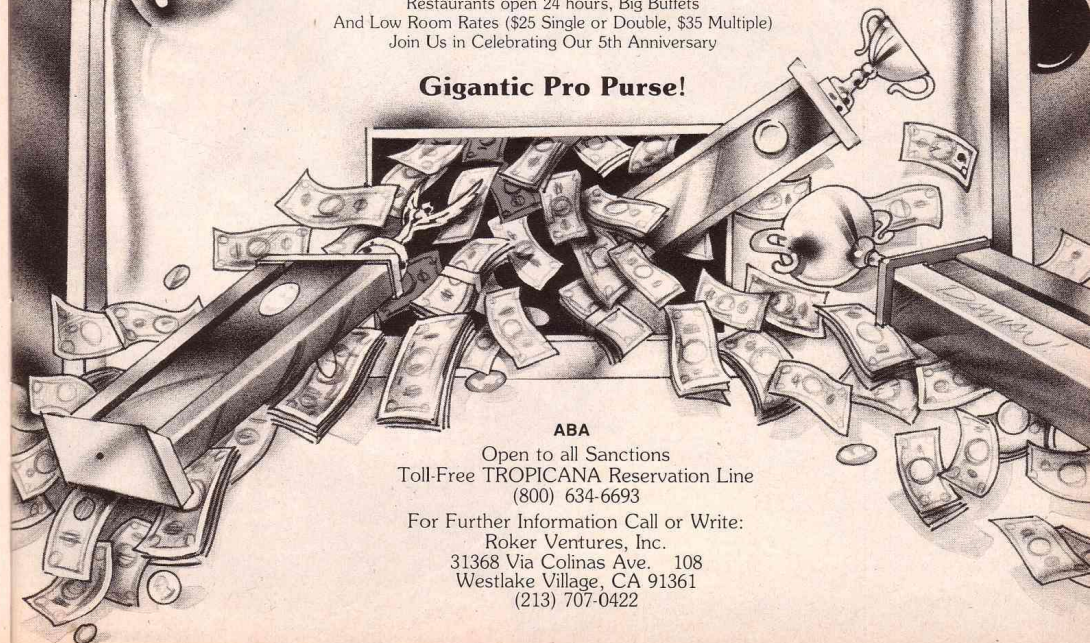
7
 ELEVEN

MALIBU
 FUN CENTERS

December 27, 28, 29 1982
 Las Vegas, Nevada

Restaurants open 24 hours, Big Buffets
 And Low Room Rates (\$25 Single or Double, \$35 Multiple)
 Join Us in Celebrating Our 5th Anniversary

Gigantic Pro Purse!



ABA

Open to all Sanctions
 Toll-Free TROPICANA Reservation Line
 (800) 634-6693

For Further Information Call or Write:
 Roker Ventures, Inc.
 31368 Via Colinas Ave. 108
 Westlake Village, CA 91361
 (213) 707-0422