



RACE INC.

A Comprehensive Test Of The Race Inc. Exotic Aluminum Mini Photos by John Ker Story by Bob Hadley

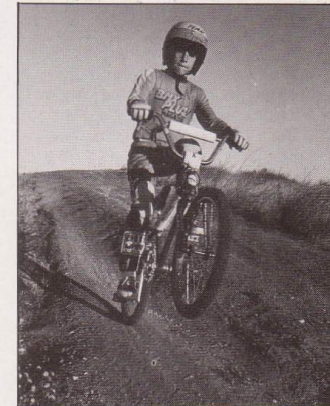
Building racing frames for younger riders seems to be an afterthought for many companies. Not so for Race Inc. They've got over five years of experience going into their RA-8 Jr., an exotic aluminum mini racer.

The RA-8 Jr. starts out like any other frame: as standard commercial tubing and material. But from the time the tube bender shapes the first piece to the time the finished frame ends up in your dealer's showroom the RA-8 Jr. is one of the most (if not *the* most) thoroughly inspected and carefully made frames on the market.

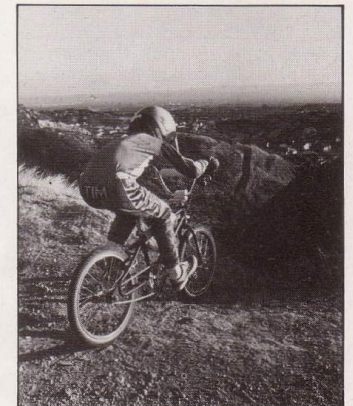
The manufacturing process that Race Inc. aluminum frames goes through is very interesting. The material used is 6061 aluminum, which is fairly pliable in its untreated form. 6061 is ideal for shaping and fabricating a bicycle frame: virtually every aluminum frame on the market is made out of 6061. The tubing for the rear triangle is precision cut and then bent with a fully-automated bender. The top and down tubes are milled to form-fit the head tube, seat post and bottom bracket.

All the pieces are assembled in a fixture and then completely heli-arc'd. It's important to note that *all* the welding is done while the frame is jugged tightly in the fixture. Some frame makers use the fixture to only "tack" weld the frames. Then they complete the welding when the frame is removed. This can cause alignment problems because these frames can warp during the final welding. This is not the case with Race Inc. frames.

From the welding fixture the frames are checked and inspected, then taken to the heat treater. This is the most important process of the entire procedure. In its standard form, 6061 is fairly soft, workable material, yet almost too soft to be ridden on. That's where heat treating comes in. Heat treating stiffens up the aluminum and gives



The balance of the Race Inc. mini is well suited for wheelies and downhill blasting



Our never ending search for the hottest test spots in Southern Cal has led us this time to the cobbly equestrian trails of the San Fernando Valley.



The RA-8 Jr. is a machine for the youth who desires to go beyond the simple limitations of the average sidewalk slider.



The Race Inc. RF-M leading axle type fork. We found it flex-free for little guys.

it remarkable strength. The heat treat process on Race Inc. frames involves three steps: the actual heat treating, alignment checking and straightening, and then aging the frame. The alignment checking and straightening procedure is a precautionary step. It insures that every frame is "to spec". The aging is done at a relatively low temperature, about 300 degrees, and that brings the aluminum to its specified hardness factor. In this case it's referred to as T-6.

Once the frame is back from the heat treater, Race Inc. either anodizes it or powder-coats it. The anodized surface is generally the more durable, but the powder-coat painted surface offers the most durable paint and it matches Race Inc's. Chrome-moly powder-coated forks.

The forks come in two variations: the RM-M leading-axle style and the RF-ZM centerline style. Like the frames, the forks are welded completely in the fixtures. Both forks are heat treated after welding,



Tight off-camber turns like this one can be attacked with confidence.



The large even fillet at the joints indicates good penetration at the welds.

something most makers don't do. The heat treating gives an extra measure of stiffness as well as an overall strengthening to the entire unit. This allows Race Inc. to achieve what they believe to be a perfect balance of light weight and maximum strength. The RF-M fork weighs in at one pound, ten ounces. The RF-ZM weighs in at one pound, eight ounces. The weight savings on the RF-ZM comes from the elimination of the leading-axle type drop-out and the use of the ingenious laminated drop-out. With the new drop-outs the RF-ZM is more resistant to the "torsional leverage." This effect can be demonstrated on a starting gate. If you put a lot of pressure against the gate and try to turn the bars you'll notice how flexy most forks are, especially those with thin axle plates.

The entire line of Race Inc. components can be purchased separately or in a RAK-Race Kit. This is the way we received our RA-8 Jr. In the kit you get the frame



Tim found the RA-8 Jr. a likeable machine. In fact, he won first place on his very first race with it!



Proper installation of calipers on Race Inc. frames means mounting the unit upside down as shown.

and matching fork; a chrome-moly seat post, an aluminum Ex-calibre seat clamp, Race Inc. chrome-moly bars, and bar and frame pads.

Assembling a Race Inc. set is like working on a fine race car. Installation of the headset and bottom bracket components is accomplished smoothly and no excessive force is needed. The Race Inc. seat post fits like a piston in the seat mast, it couldn't be better.

When, racer, Tim Ellis, raced the RA-8 Jr., he preferred to keep the selection of components restricted to things he's used to. Shimano components made up the bulk of the parts, including hubs, cranks, headset, and brake. As an experiment we also tried out Bear Development's new Titron titanium sealed bearing bottom bracket set. It turns out the Titron set worked especially well in the Race Inc. because of the bike's extra-wide tail section. The length of the titanium spindle gave us more than adequate clearance.

Race Inc. is well-known for its alloy handlebars. That's why we were slightly suprised to find chrome-plated chrome-moly bars in the RAK-Race kit. A Race Inc. spokesman informed us that the chrome-moly bar was included strictly because not many people were aware that they existed. Whatever the reason, the bars are excellent: in shape, size, finish and workmanship.

After our initial set-up we switched from the kit-supplied RF-ZM fork to the RF-M fork to see if there were any handling differences. After extensive riding we found no noticeable handling changes. The flex factor did not come into play. We suspect that most riders wouldn't notice any flexing in the RF-M fork anyway. A call to Race Inc. confirmed our analysis: the geometry is virtually identical between the forks.

As a package race machine the RAK-Race Kit performed well. The sizing of the front and rear triangles will suit a great variety of younger racers from five years old to smaller 13- and 14-year-olds. The angle of the seat post allows a growing racer to simply adjust the seat post upward as his height changes. With the seat all the way down and equipped with a pair of Race Inc. short bars it will fit the littlest rider. Add taller bars, move up the seat and, presto! an excellent bike for eleven or twelve-year-olds.

The RA-8 Jr. keeps its good handling characteristics almost regardless of how it's set up (within reason). For Timmy we used 6-inch rise bars and a SunTour stem. Timmy adjusted his seat upward two to four inches from the top of the seat mast. He also used 170mm cranks. The bars provided the perfect height and the stem kept them within reach. A larger rider, for example, may need a Pro-Neck or Red Line to move the bars up more. There are almost limitless combinations that will work on the

Race Inc., making it easy to dial the bike in for any junior racer.

So how much does all this great stuff cost? The RA-8 Jr. by itself runs about \$120-\$125. The entire RAK-Race kit will run you near \$190-200. Sound expensive? It sure does, but quality merchandise always is. The RA-8 Jr. is a serious bike aimed at the rider who is willing to put as much time into his racing as Race Inc. does into building it.

