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Special Issue

Technology and the Olympics:

Bringing the Medals Home

**Fitness:
How You Will
Benefit From
Olympic
Research**

**ROAD TEST:
Ten Top
Tandems**

**Meet the Minds
& Machines
That Will Give
the U.S. the
Competitive Edge**



Motobecane

Continued from page 124

in normal riding. The frame did meet its rigidity limit in out-of-the-saddle sprinting, though. After conducting that test once, we decided we probably wouldn't want to sprint on that bike too often.

All in all, we were pleasantly surprised. In years past, I've ridden much more expensive tandems that were no more rigid, and this one finished higher in our eyes than we would have guessed by looking at it. Conventional "wisdom" is that any mixte-back tandem is hopelessly flexy, but Motobecane showed us that a mixte-back can be better than we thought.

The bike's weak point was its steering. The 69-degree head tube angle results in excess wheel flop for a bike this heavy, and the bike handles awkwardly in corners. It takes some muscle to get the handlebars turned to enter a corner, and then the bike invariably oversteers. Then you have to steer back the other way to correct your course. The upshot of this is that you must command a wide path through corners, since the bike won't let you pick your exact line.

(Motobecane's new U.S. importer, North American Tradimpex Corp., told us they would ask the factory to change the head tube angle to 73 degrees to give the bike improved handling.)

For a long-distance tourist, or for any other dedicated high-performance fanatic, this steering behavior would be an annoyance. But we'd happily put up with it for shorter distances and

low-key riding. This is all that most riders ever ask from a bike. For them, a tandem like the Interclub will be enjoyable, and not so expensive as to cause a family feud. ○

Thanks to Skip Merz of the Cycling Center in Allentown, Pennsylvania, for lending us both the Motobecane and the Kuwahara tandems.

MOTOBECANE INTERCLUB

Imported by: North American Tradimpex Cycles, Inc.
Five Park Drive
Malville, NY 11747

SUGGESTED RETAIL PRICE: \$1,095

SIZES AVAILABLE: 22 1/2/20 1/2 only

WHEELS

Rims: Weinmann Concave, 27 x 1 1/4
Hubs: Maillard medium-flange front, Alom rear
Spoking: 36-spoke front, 40-rear, 13 gauge, cross-three
Tires: Hutchinson 27 x 1 1/4, 90 psi, Presta

DRIVETRAIN

Derailleurs: SunTour Compe-V front, SunTour VX rear with lateral tube shift levers

Chain: Sedisport
Crankset: T.A. Cyclotourist
Crankarm length: 170 mm
Freewheel: SunTour Perfect

COMPONENTS

Pedals: Alom 440 rat trap
Seatpost: 25.4-mm diameter front and rear stem, 180-mm length
Saddle: Sella Italia
Handlebars: Motobecane engraved masts 41-cm with SR stem front, Motobecane engraved straight 54-cm with SR stem rear
Brakes: Mafac cantilever with Mafac hooded levers front, Weinmann centerpull with Mafac hooded levers rear, Alom rear drum brake

GEARING IN GEAR INCHES

	40	52
14	77	100
17	64	83
22	49	64
28	39	50
32	34	44

The Stiffest Tandem in Town

It Takes Two to Tango on Heavy Metal

John Schubert with Tom Walz

From the moment its 200-pound, solid-wood shipping crate landed on our loading dock, the tandem named Tango caused quite a stir. Carefully secured inside that crate was a sensationally rigid tandem that ends all arguments about frame stiffness.

The brainchild of Rick Jorgenson, a touring tandem enthusiast who owned four other tandems before designing his own, the Tango has one aim: to be "ultimately stiff," Jorgenson says. "I like that feeling of stability and straight tracking, particularly when the bike is loaded for touring."

Like many "ultimate" products, the Tango is a rarity. Only a few have been built. While it's

not widely available, the Tango serves as a demonstration of what is possible in tandem design.

How is the Tango made so rigid? Let me count the ways! The bike sports an oval top tube and direct lateral tube, both made by Phil Wood; a round marathon tube with midstays; and heavy Santana/Ishiwata chainstays and fork blades. Within minutes of its arrival, the 47-pound Tango earned a popular and very appropriate nickname: Heavy Metal.

We mercilessly thrashed the Tango and it didn't budge. In climbing, sprinting, hard cornering, and quick slaloms, the Tango gave us new insight into how rigid a tandem can be.



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The better a tandem handles, the less allowance you have to make for the fact that it's a tandem and not a single bike. Generally, a less-rigid tandem will need to be handled more gently, and a more rigid tandem will respond more surely when you subject it to sudden, abusive maneuvers. Simply stated, the Tango takes this to an extreme.

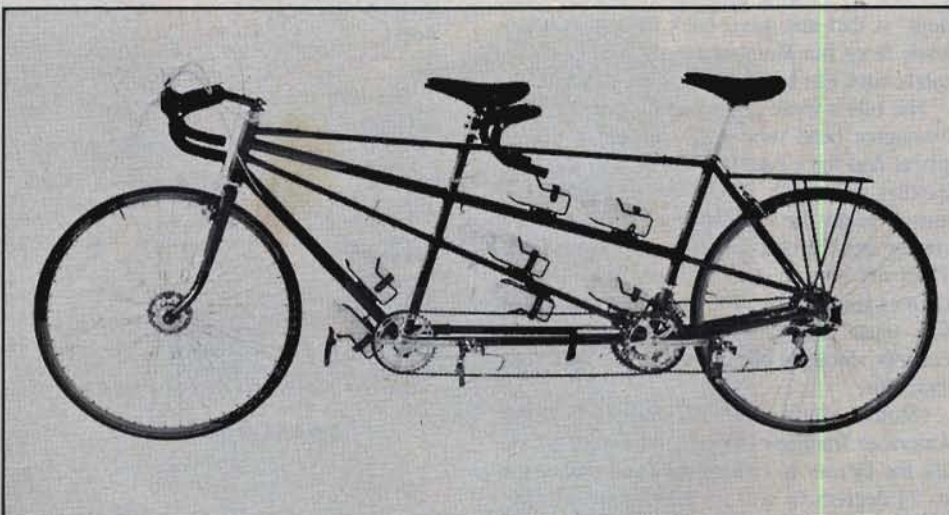
When we sprinted out of the saddle, an acid test for any tandem, the Tango didn't exhibit the flex we've come to regard as inevitable. On steep descents, your road testers ran out of nerve before the bike ran out of roadholding ability. If ever a tandem handled like a single bike, this one did.

When we tested the bike's handling with panniers (using slalom maneuvers and out-of-the-saddle climbing), we couldn't even notice any difference. The frame seemed to flex no more with the panniers than without them. Although the Tango is designed for touring, its rigidity makes it quite desirable for gung-ho speed riding. Suddenly, any other tandem seems limp by comparison!

Not surprisingly, there is a penalty in shock absorption. The Tango does transmit more of

(Right) Oh, what a tubefest! Two round tubes and two oval tubes extend back from the head tube toward the riders. Note the chrome-moly handlebar stem, the Santana/Ishiwata fork blades, and the Shimano cantilever brakes.

The Tango tandem.



CHRISTIE C. TITO

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the road's bumps to the riders than other tandems. Another of its handling qualities is nimble, light steering. These two factors combine to make the Tango a bike for hard-riding enthusiasts.

The Tango is truly a no-expense-spared bike. For example, most framebuilders other than Santana do not use the highly desirable Ishiwata chainstays or fork blades, because they're extremely expensive when you don't buy the whole Ishiwata tandem tubeset. But Tango does. Tango also uses a hand-brazed chrome-moly steel front handlebar stem, which is lighter and more rigid than the usual aluminum stem, but at a significant cost penalty.

A hand-brazed chrome-moly steel rear rack is similarly lighter and more rigid than an aluminum rack. This kind of workmanship appears in every nook and cranny of the frame, and the bike is priced accordingly. A bare frame costs \$2,750. Our test bike as equipped is about \$5,000. Tangos are built one at a time, and each one takes three weeks of framebuilder Michael Johnson's time.

The overkill approach to stiffness allows Jorgenson to stretch out the rear top tube (the

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The Stiffest Tandem

minimum length he uses is 27½ inches), giving the stoker more room (and psychological space) than most other tandems. Other custom builders do offer rear top tubes this long and longer, but few offer them as standard equipment.

Whether these assets justify the cost and weight penalties is up to you. They have already to several Tango customers.

Jorgenson's "real" job is to use a computer to design bridges for the California Department of Transportation, and he used computer-assisted design on the Tango. His computer modeling of the tandem enables him to predict how any given design change will affect frame rigidity.

Remember, this is a hard-core touring bike. It came equipped with no fewer than seven water bottles. Most people who saw all the water bottles laughed, but the experienced tourists, who know about cooking and cleaning at a dry campsite, didn't.

Next in the works for Tango is a three-seater, which will probably have a cross-shaped internal bracing pattern. "It looks kind of ugly," Jorgenson said. "But there sure are a lot of places to put water bottles."○

TANGO

Manufactured by: Rick Jorgenson
2437 Elendil Lane
Davis, CA 95616

SUGGESTED RETAIL PRICE: bare frame, \$2,750

SIZES AVAILABLE: all custom

WHEELS

Rims _____ Super Champion Mod. 58, 27 x 1¼
Hubs _____ Phil Wood medium-flange
Spoking _____ 48 spokes, 14 gauge, cross-four
Tires _____ Specialized Touring Turbo, 27 x 1¼, 95 psi, Presta

DRIVETRAIN

Derailleurs _____ SunTour Cyclone II front, Huret Duopar rear
Chain _____ Sedit Sport
Crankset _____ Campagnolo Record
Crankarm length _____ 170 mm
Freewheel _____ SunTour New Winner

COMPONENTS

Pedals _____ Campagnolo Super Leggera track
Seatpost _____ Campagnolo Record front and rear, 26.6-mm diameter, 210-mm length, double-bolt microadjust
Saddle _____ Cinelli
Handlebars _____ Cinelli maes 40-cm front with chromo 100-mm stem; Specialized maes 44-cm rear with chromo 100-mm stem
Brakes _____ Shimano cantilever with Campagnolo hooded levers front; Mafac centerpull with Mafac hooded levers rear; Phil Wood rear disc brake

GEARING IN GEAR INCHES

	32	48	53
13	66	100	110
15	58	86	95
18	48	72	80
22	39	59	65
28	31	46	51
34	25	38	42

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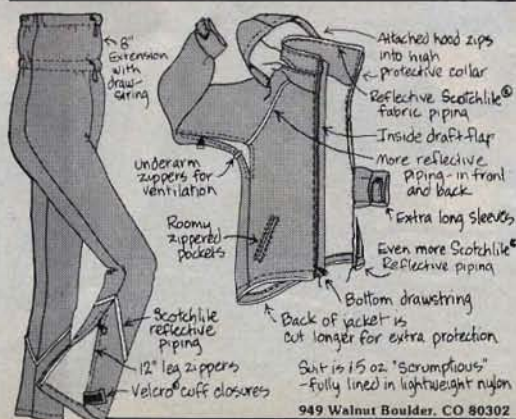
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