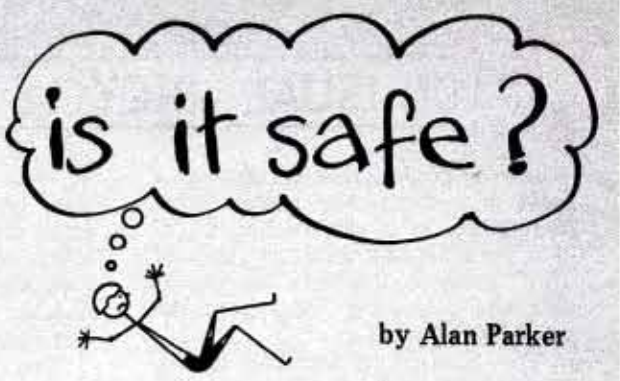
LAID BACK CYCLING...



by Alan Parker

I liked George Lendvai's article on recumbent bicycles (PUSH ON Dec. '83—Jan '84) but disagree that they are safe. A few years ago, I rode a recumbent bicycle, designed by a Victorian inventor and found that it was a lot of fun until I took it out of the park and onto the main road in heavy traffic. In traffic, I could see far less and could not scan the road properly for potential dangers because my head was low down like that of a little child on a small bicycle or the driver of a small car.

The great merit of the conventional bicycle is the fact that the rider has a much better all-round view of the road — especially at intersections — than other road users. Motorists can and do see the cyclist very well in normal light conditions in daytime.

It may sound restrictive and be unthinkable for bicycle buffs but I see good reasons for prohibiting the use of 'recumbent' bicycles' on public roads on the ground that they are ergonomically defective. This is because the user is unable to see other road users and other road users are less able to see the recumbent. At night time, if equipped with good lights, recumbents would be less at a disadvantage, being just as visible to the motorist. During the day the only way to make recumbents equally visible as a cyclist with a white or yellow helmet and ordinary clothing, would be for the recumbent to have a couple of vertical bicycle flags. That would overcome the problem of being seen, but there are also other factors to be taken into account.

Ergonomic Constraints: The ergonomic merits in traffic of the conventional bicycle, compared to exotic machines that put cyclists in the recumbent position to minimise aerodynamic drag, are as follows;

(1) Cyclists and other road users can see each other over the top of cars;
(2) Easy control at both high and low speeds;
(3) More efficient power generation on uphill sections (see table);
(4) Emergency acceleration available by standing on pedals;
(5) A wide range of emergency escape manouvres are possible to avoid collisions.

For normal city riding, the benefits of a reduction in aerodynamic drag are of no consequence, as shown by the table. The commuter streamliner is of the type shown in Figure 1. For practical purposes, such as commuting and shopping trips, streamlined recumbent bicycles are quite impractical. Apart from the problems of steering and visibility, the rider would cook under the transparent cover used on some totally enclosed designs. The streamliner's air intake at the level of a motor

CONVENTIONAL BIKE -V- COMMUTER STREAMLINER

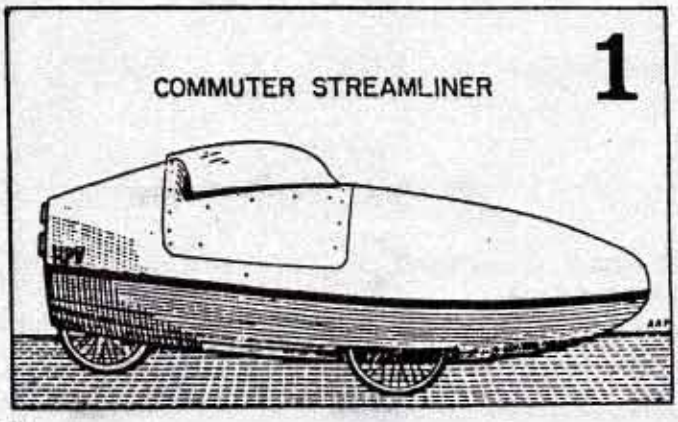
Crane 1981

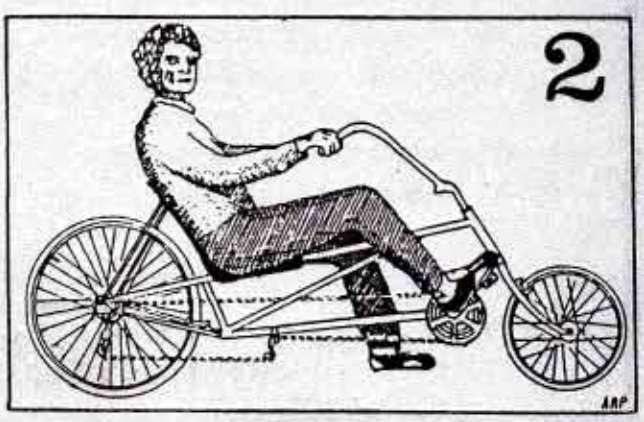
Conventional Bike Speed km/h		10	15	20	25	30	35	40	45
Speed of Commuter Streamliner km/h	Level	9·5	16·3	23·7	31·1	38·7	45·6	52·8	60
	Up 3·7% Incline	8·7	13·5	18·9	24·7	31·0	37·6	Area of Higher Speeds	
	Up 10% Incline	8·5	13·0	17·6	22·7				

Fig. 1: Recumbent cycle with full fairing. 54% reduction in drag at 30 km/h. This unit has 21 speeds, disc brakes. Production model by Cydo Dynamics. Price: $US 3,800. Has vertical array of strobe lights and indicators.

Fig. 2: Recumbent bicycle designed by Gardner Martin, gives 25% reduction in drag at 30 km/h. This unit is available to order. Do it yourself plans are also available. For more information, write to Easy Racers Inc, 2891 Freedom Blvd, Watsonville, Ca 95076, USA, enclosing $2 in International Reply Coupons (available from your post office).

Fig. 3: The Zzipper fairing provides approximately 12% reduction in drag at 30km/h.





vehicle exhaust pipe would ensure the rider choked on carbon monoxide fumes in traffic. Taking all these factors into account, I feel there is a good case for banning the use of recumbent bicycles in traffic.

There are three important practical applications of aerodynamics for the cyclist:

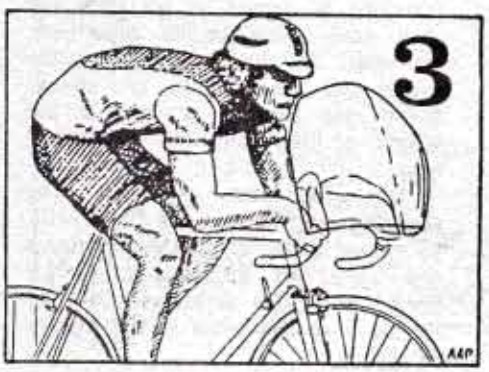
(1) Use of a front fairing (Fig. 3);
(2) Better aerodynamic form of rear luggage carriers.
(3) Well designed bicycle clothing.

In addition, there is scope for combined integral designs of fairing, bicycle lights and a luggage compartment.

The use of recumbent bicycles, like the use of exotic materials for weight reduction on a vehicle which can carry a payload of up to ten times its own weight, is not important for ordinary cyclists. For most cyclists, *weight* control and cardio-vascular fitness are more important factors in improving their performance than super light weight components or reduced aerodynamic drag.

On tandem cycles, which usually travel a little faster, the fairing is of great benefit. In wet weather the other benefit of the fairing is to keep the thighs and groin area dry when only a waterproof jacket is worn. For long distance commuters, yellow or orange materials on the fairing would make cyclists more conspicuous to other road users. A slight disadvantage is the effect of side winds on the fairing.

The recumbent bicycle has many safety problems, when it comes to avoiding an accident in the first place. However, some people claim that if you do have an accident on a recumbent, you will come off feet first, thus being less likely to injure yourself. Providing that the accident does not involve a car, that may be true but if you come off in traffic, it may mean that you finish up under the wheels of the car, instead of being thrown over the bonnet. Which would you prefer?



Cyclist Wins Race to Parliament

In the week before the March 24 State election, Australian Democrat candidate for the Upper House, Rod Dominish, challenged commuters to travel to Parliament House in Sydney more quickly than he could. BINSW accepted his challenge and was represented by President, Clive Lackey and Vice President, Russ Webber.

The start was from Naremburn Park, near St Leonards. Other particpants were to travel by car, train and bus. Rod Dominish ran.

At 8.25 am, as the TV cameras started rolling, the race commenced with competitors leaving the park in different directions. The motorist headed for the Pacific Highway, the train traveller to St Leonards station, the bus passenger to Willoughby Road and the two cyclists to the back road commuter route network recommended in the North Shore Bike Plan.

Less than a block from the park, Dominish was overtaken by the bike riders who then tackled the climb over the Crows Nest ridge. The train traveller experienced no delay at the ticket booth on St Leonards station and stepped straight onto a train. The bus traveller arrived at the nearest bus stop and waited.

Using West St, the main north-south cycleroute through Crows Nest, the cyclists were caught by a red light at Falcon St and saw the motorist cross their path on his way to the Warringah Freeway.

Traffic snarls and more red lights slowed the bikers through North Sydney and the runner found a non-cyclable short cut which briefly gave him the lead. Meanwhile, the bus passenger was inching toward the city in a traffic jam and the motorist was helping to lengthen the queue on the Freeway.

As the cyclists battled a ferocious headwind on the Harbour Bridge Cycleway, the train passenger went into the lead. The car and bus remained in their serpentine traffic jams, as did the TV crews who had intended to film the runner and cyclists en route.

As the train traveller left Wynyard station and one cyclist eased for a breather, the other took the lead and reached Parliament House in Macquarie Street at 8.50 am. A few minutes later, the second rider arrived, followed closely (half a second later!) by the rail commuter, then the ABC news car. The runner was next then Channel 9. Channels 10 and 0/28 and the motorist all arrived in a dead heat a few minutes later.

The reporters moved in for interviews, the finish was restaged for the cameras and, just as everyone was ready to leave, the bus traveller arrived.

What did all this achieve? Well, apart from giving the Institute representatives the opportunity to urge provision of cycling facilities and the candidate a chance to push for free public transport, it proved beyond any doubt that, for short distances, the most neglected form of transport is the most efficient — the bike!