

Customers sometimes express surprise at the news that their bike needs two new wheels or a whole new drivetrain after only a couple of years of regular use – often at a total cost approaching the current value of the bike. We normally explain that it should be viewed as a running cost, and point out that it's pretty cheap compared to the cost of e.g. bus fares or owning a car. But it got me thinking: what is the total running cost of a bike spread over several years? Are some bikes cheaper to own than others in the long term?

## COMPARISON

An 'average' urban commuter who lives say 3 miles from their workplace, and mostly travels to work by bike as well as using it semi-regularly on the weekends, might clock up 1,500 to 2,000 cycling miles a year. The most common type of bike for this kind of use in the UK is a hybrid. Assuming a new mid-range model with mudguards and luggage rack, puncture-resistant tyres, and the addition of aftermarket LED lights, then:

<b>Hybrid bike</b>	<b>Initial purchase</b>	<b>£425</b>
<b>year 1</b>	annual service + brake blocks	£60
<b>year 2</b>	annual service + brake blocks; chain & cassette	£90
<b>year 3</b>	annual service + brake blocks; all cables; tyres	£130
<b>year 4</b>	annual service + brake blocks; chain, cassette & crankset; new wheels	£220
<b>year 5</b>	annual service + brake blocks	£60
<b>year 6</b>	annual service + brake blocks; all cables; chain & cassette; tyres	£160
<b>TOTAL</b>	<b>(including purchase cost)</b>	<b>£1,145</b>

The trend amongst hybrids (as well as most other types of bikes) over the last couple of decades has been towards lower weight and better performance, but to the detriment of longevity. Put simply, high-power brakes wear down the lightweight but soft aluminium wheel rims over a few thousand miles; and slick, easy-changing, wide-range gear systems wear out even faster (see [www.jakesbikes.co.uk/380](http://www.jakesbikes.co.uk/380) for more discussion of this).

So are there any real alternatives?

Some are tempted to buy the cheapest bike they can find, pointing out that if it will wear out anyway, then why pay more? The example budget bike below is a bottom-of-the-range mountain-bike-style model bought

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from a mail order website or department store for under £200. There are no lights, mudguards or luggage rack so these are added to the purchase price.

Budget bike	Initial purchase	£270
year 1	annual service + brake blocks; all cables	£80
year 2	annual service + brake blocks, chain & cassette; tyres	£145
year 3	annual service + brake blocks; wheels; bottom bracket; pedals	£165
year 4	annual service + brake blocks; chain, cassette & crankset; all cables; rear mech	£175
year 5	annual service + brake blocks; headset; tyres	£145
year 6	annual service + brake blocks; chain & cassette; wheels; shifters	£195
<b>TOTAL</b>	<b>(including purchase cost)</b>	<b>£1,175</b>

Another option is a Dutch bike of the type not commonly seen in this country, but they are available from a few retailers. The one in this example is assumed to have 7-speed hub gears and hub brakes, and a fully enclosed chain, so the wear-and-tear to these should be minimal. It has mudguards, luggage rack, puncture-resistant tyres, and integrated dynamo lighting included in the price.

Dutch bike	Initial purchase	£700
year 1	basic service, no parts required	£30
year 2	annual service, gear hub rebuild & lube, no parts required	£80
year 3	annual service + all cables; tyres	£115
year 4	annual service + chain & sprocket, gear hub rebuild & lube	£95
year 5	basic service, no parts required	£30
year 6	annual service + all cables; tyres	£115
<b>TOTAL</b>	<b>(including purchase cost)</b>	<b>£1,165</b>

For comparison, a typical new mid-range road bike would cost at least £500 to get components of a similar quality to the mid-range hybrid above. Again assuming the addition of lights, mudguards and luggage rack (assuming they can even be fitted, which is not always true), a road bike would look something like this:

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<b>Road bike</b>	<b>Initial purchase</b>	<b>£650</b>
<b>year 1</b>	annual service + brake blocks	£60
<b>year 2</b>	annual service + brake blocks; chain & cassette; tyres	£160
<b>year 3</b>	annual service + brake blocks; all cables; chain, cassette & crankset	£195
<b>year 4</b>	annual service + brake blocks; chain & cassette; new wheels; tyres	£260
<b>year 5</b>	annual service + brake blocks; chain & cassette	£100
<b>year 6</b>	annual service + brake blocks; all cables; chain, cassette & crankset; tyres	£255
<b>TOTAL</b>	<b>(including purchase cost)</b>	<b>£1,680</b>

## CONCLUSIONS

Surprisingly, over the 6 year period, the first three bikes have an almost identical cost of ownership. Perhaps cost is not, therefore, a significant factor in deciding what type of bike to purchase, if the choice is between these three at any rate. Much more important is the question of what style of bike you want and need. If you require lots of gears and good brakes for hilly terrain and you want a relatively lightweight bike, the £425 hybrid is a good option. It will need more replacement components over the years, but you may consider this a price well worth paying. If you prefer a very upright riding position, can live with a smaller range of gears and a heavyweight bike, and minimal maintenance is a priority, the Dutch bike is better. At £700 it's more expensive to purchase, but repays the difference over a few years of ownership. If, on the other hand, you want a heavy bike which is unpleasant and inefficient to ride, has lots of annoying maintenance issues, but still costs no less to own and run, then the budget bike is the one for you!

The road bike works out more expensive overall, because despite costing more than the hybrid or the budget bike to purchase, it cost no less to service and maintain. Road bikes can also have additional problems for commuting such as a lack of tyre clearance for fitting mudguards, and the difficulty or impossibility of fitting a pannier rack. The calculations above only reinforce the view, therefore, that for commuting purposes a modern road bike is not a particularly practical choice: unless you value very low weight and speedy acceleration above all else, it's both cheaper and more practical to get a different style of bike.

The road bike could equally have been a similarly priced mountain bike, and the calculations and potential problems would remain the same. Interestingly, it could also have been a £650 hybrid bike: evidence that a higher purchase price does not necessarily mean lower running costs. Whereas if you spend too little and buy a budget bike your running costs will be higher, conversely if you spend too much and buy a £650 hybrid bike

instead of a £425 one your running costs will also be higher. This is partly because the components are more expensive (assuming you replace like-for-like components as they wear out and don't want to "downgrade" the bike with each service), but it's also because some components (e.g. wheel rims, aluminium chainrings, 9- or 10-speed drivetrain) will wear out more frequently thanks to being optimised for low weight, performance, or simply marketing hype rather than long life.

All of the above assumes that you are in the position of having to buy a new bike. However, if you're fortunate enough to already own a thirty or forty year old racer or tourer in working condition, I suggest you hang onto it for as long as possible! Provided you're content to have only 10 or 12 non-indexed gears and less powerful brakes, you can avoid most of the durability problems associated with modern components. However, such bikes are becoming increasingly rare, especially in good condition, and new sprockets and chains of comparable durability are simply unobtainable, so when they do finally wear out you'll be in the same position as the owner of a modern bike. There are also very good reasons why bikes of this type went out of fashion: not everyone gets on with friction shift gears and drop handlebars, and having a narrow range of gears can be a real drawback to many cyclists, especially in a hilly city like Bristol. Perhaps worst of all, the braking power afforded by chromed steel wheel rims is woeful in wet weather, to the point of being dangerous in modern traffic.

## ***USE BEYOND 6 YEARS***

After the 6-year period, the differences in running costs become more pronounced.

The budget bike will probably be very broken and, as if it hasn't had enough money thrown at it already, its repair will certainly not be financially viable for much longer.

The hybrid bike may now need components such as derailleurs, bottom bracket, new wheels again etc. but assuming it's maintained in this fashion there's no reason why it couldn't go on for another few years, costing an average of £100 per year or not much more to maintain. There are plenty of 15 or 20 year old hybrid bikes still on the road today.

After 6 years the Dutch bike is barely middle aged. It too may need a new bottom bracket, headset or wheel bearing rebuild but these are all very worthwhile on a good quality bike of this value. Unless crash-damaged or abused it ordinarily should never need new wheel rims, brakes or gear hub, and rarely a new sprocket or chain. It's not unusual to see hub-geared, hub-braked bikes of this type still in use after 30, 40 or even 50 years. And they hold their value well, so if it does ever need to be sold it should easily fetch £200 or more.

For higher mileage users the trends are accelerated: if you commute 10 or 20 miles a day all year round, the

Dutch bike will repay its higher purchase cost after only 3 years or so, and will work out comparatively cheaper and cheaper thereafter. However, arguably a high-mileage commuter is more likely to want a fast hybrid or road bike for greater efficiency and speed over the longer distance. It would cost more to maintain, but some may well consider this worthwhile.

Whichever of the bikes above we choose, the lifetime cost is much cheaper than owning and running a car or using public transport for the same period. Depending on what monetary value you place on your time, it may even be cheaper than walking!

## **NOTES**

Each bike was assumed to have had an annual £50 service. On top of this, additional parts and labour charges were differentially added for components which typically wear out on each type of bike. If you do your own bike maintenance the £50 cost can of course be omitted, in which case the higher maintenance bikes work out comparatively cheaper - although unless you actively enjoy maintaining your bike, arguably you should place some value on your time spent doing so.

The hybrid bike was assumed to be a mid-range sensible, solid, reliable model with V-brakes, 24-speed derailleur gears, mudguards and luggage rack included, but no unnecessary extras such as suspension or disc brakes. The Bristol Bicycles sold by Jake's Bikes are exactly this kind of bike. They have good quality puncture-resistant tyres as standard, but no lights, so aftermarket LED lights are added to the price. Other examples are the Ridgeback Anteron, Kona Dew, Claud Butler Urban 400 and Dawes Discovery 301. The advantage of this kind of bike is that it's relatively light at 14kg (31lb), but still has a wide range of gears (approx a 450% range) and powerful brakes. The disadvantage is that the gears will wear out more quickly than on a Dutch bike, the chain is exposed, and eventually the wheel rims will wear out from braking.

The Dutch bike in this example has 7-speed hub gears and hub brakes, a fully enclosed chain, and mudguards and luggage rack as standard. It too has puncture-resistant tyres, but unlike the hybrid it has integrated dynamo lighting included in the price. The Azor Jersey, Batavus Cambridge or Gazelle Primeur are examples of such a bike, all of which are available in the UK. The advantage of this kind of bike is that its gears, brakes and chain are all enclosed so are clean and low-maintenance. The disadvantages are that it's significantly heavier at 18kg (40lb), has fewer gears (approx a 225% range), and somewhat less responsive brakes.

The budget bike was a bottom-of-the-range mountain-bike-style model from a mail order website or department store. It has basic 18-speed derailleur gears and no extras such as suspension or disc brakes. There are no lights, mudguards or luggage rack so these are added to the purchase price. The Falcon Storm,

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Dawes XC18, Integra Matrix or Claud Butler Trailridge 1.1 are examples of just such a bike. The tyres are cheap knobby ones, so in the calculations above it is assumed that these are worn out after less than a couple of thousand miles and replaced with better puncture-resistant ones. The wheels are the cheaper single-walled, freewheel type so that they too are damaged more easily and need to be replaced every few thousand miles. Headset, bottom bracket, shifters and derailleur are also assumed to break and need replacement during the lifetime of the bike. In addition to the low purchase price, the advantage of a bike like this is that it has a pretty wide range of gears (approx 400%) despite their basic construction, and it is potentially less at risk of being stolen than the others. The disadvantages are that it's heavy at around 18kg (40lb), unpleasant to ride thanks to the knobby tyres, cheap saddle, plasticky brakes and gears etc., and maintenance will probably become a nuisance thanks to the low quality components.

The road bike was a mid-range model of the sort typically used for winter training or commuting rather than serious sport or competition. It has 18 derailleur gears, and no lights, mudguards or luggage rack so the cost of buying these separately has been added to the above calculations. Examples of road bikes in this price bracket are the Claud Butler Torino SR2, Dawes Giro 500, Giant Defy 3 or Specialized Allez Double. The main advantage of a road bike is that it's fast and efficient and light, at perhaps 12kg (27lb). It has an intermediate range of gears (maybe 350%), at somewhat higher ratios than on a hybrid, so will be fast but not quite so easy uphill. The disadvantages can be that it's less comfortable to ride on city roads thanks to the drop handlebars and hard, narrow tyres; and it may be necessary to fit compromised mudguards or pannier rack because of frame clearance issues and lack of frame eyelets.

Any other purchases and costs (e.g. pannier bags, helmet, repair after minor damage etc.) were assumed to be the same for all bikes, and so excluded from the calculations above.