



Alex Moulton, a keen cyclist and CTC member, had been researching and developing his design for an improved bicycle for some five years. The final version used 16" (420 mm) wheels with tyres inflated very hard. The small wheels gave good acceleration and plenty of space over for wide frame-fixed carriers. Moulton, a leading suspension designer, overcame the hard ride of the small wheels by incorporating a rubber suspension system (see Note 1 below). Under most conditions this gave a smoother ride than a conventional bicycle. The Moulton bicycle had an open 'unisex' frame with 'instant' adjustment for a very wide range of rider heights. Some versions could be taken apart for easy storage or for carrying in the boot of a small car.

The bike was an instant success and by the mid 1960s production exceeded 1,000 units a week. It was the product of extensive original research and had not been produced in response to market demand; it was therefore a 'technology push' rather than a 'market pull' product. Nonetheless it became very fashionable, 'a mini-bike to go with mini-skirts and mini-cars, all part of the "Swinging 60s"' (see Note 2 below).

It also created the market for subsequent unisex shopper and folding bicycles, most of which were technically inferior attempts to cash in on the Moulton's successful image. The epitome of these 'market pull' products was Raleigh's balloon tyred 44 lb. (20 kg) RSW 16.

Before the Moulton, cycle sales had been declining rapidly; from 1961 to 1963 they dropped from 0.9 million a year to 0.6 million. The Moulton went on sale in Spring 1963 and bicycle sales immediately started to rise. They had risen to 0.75 million a year by the time Raleigh took over the original Moulton company in 1967. Sales then dropped back to about the 1963 level. However, by 1969 sales were again rising fast and by 1980 had reached 1.5 million bicycles per annum. The Moulton had rekindled interest in cycling generally and helped to dispel the 'cloth cap' image which associated cycling with under-privilege – even the aristocracy rode the mini-bike!

Alex Moulton went into bicycle manufacture only after Raleigh had rejected his design as unmarketable. This was a major blunder for Raleigh

but they still profited from the new bike, most versions of which were fitted with Sturmey-Archer gears. The most widely used gear on Moultons during the mid 1960s was the FW wide-ratio four-speed.

The hub gears fitted to the first Moultons had 36 spoke holes and were fitted with 14 tooth sprockets – standard products from the Sturmey-Archer range. But soon Moulton demand was sufficient to induce Sturmey-Archer to introduce 28 hole hub shells and a 13 tooth sprocket. These became available by early 1964.

Until this time most cycles with hub gears used a cable which was open for most of its route to the hub and which ran over a pulley wheel. But the Moulton used a very long fully sheathed cable. From about 1965 a special 50 thou inner cable was fitted to resist stretching (50 thousands of an inch = 1.27 mm). Without such a cable, stretch could lead to misadjustment and gear slip. Engaging low gear on the FW was difficult enough already for many riders (and had been even harder for users of the first FWs, which had 'double square' dogs on the larger sun; these were soon replaced by dogs which were ramped off on the non-drive side for smoother changes). Cable stretch was probably the origin of the highly improbable rumour according to which Raleigh had tried to sabotage Moulton by supplying defective FW hubs.

Woodburn + Moulton + Sturmey-Archer = A Record

The launch of the Moulton had been closely followed by another significant event for Sturmey-Archer; the RRA Cardiff to London record was broken by John Woodburn riding a Moulton equipped with a Sturmey-Archer FC gear (see Note 3 below).

This was probably the last major British record (other than veterans' records) broken using a hub gear. Moultons used the hub gear because of the difficulty in getting a high enough gear with a derailleur when using such a small wheel size. Even so, they had to produce their own special 11 tooth sprocket (see Note 4 below).

