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A Short History of Hetchins Lug Design and Lug Production Methods.

There were various periods of Hetchins design activity. Elsewhere at the web site I have separated several periods by location and chronology: Tottenham, Southend, Leeds, pre-War/post-War, etc. This classification scheme is simple and has an obvious applicability, but here I would like to fill in some more detail along a different line of classification. The scheme of classification I shall now explore is based on lug design and the method (or methods) of lug production. Four periods of design development can be identified: First period (getting started, 1930-49); Second period (Latin Series, 1949-86); Third period (Bread-&-Butter designs, 1960-1986); Fourth period (Simplification, 1986-present).

First Period (getting started)

Very early production, from the 1930s to 1949, used standard lug blanks supplied by Chater Lea, Brampton, and Vaughan; these blanks were modified (cut, filed, drilled, etc.) by Hetchin's frame builder, Jack Denny, as well as other lug cutters employed specifically for this task. These were the same lug blanks as used by many other frame builders at the time. An early Hetchins looks much like an early Bates, as far as lugs are concerned. I shall call this the *first* period. (Not that Hetchin or Denny would have called it that; it has only a didactic significance in retrospect.)

Second Period (Latin Series introduced)

In 1940 or so, Denny began experimenting with more intricate variations of standard Chater Lea (or other) lug blanks. Two results of this were a Competition model with extra windows and points, a few of which are known to have survived (<http://www.hetchins.org/501comp-01.htm>). A second was called the Super Special. Denny started cutting extra windows into this Chater Lea lug blank. Several examples survive, both with and without the extra windows (<http://www.hetchins.org/501nulli-01.htm>). Super Specials are known in the records from 1944 to 1951; Competitions range from 1940 to 1948.

In 1948, a cycling and motorcycling trade show was held at Earl's Court, London. A frame was displayed there which had been built for Hyman Hetchin; it is listed in the sales ledgers as "E.C. Show Model." It featured lugwork of hitherto unknown intricacy. In addition, it featured very ornate ornaments on the fork crown and seat tube. (see <http://www.hetchins.org/504a.htm>). In the opinion of this author, that bike was displayed to test the waters; to see what the public response might be to fancy lugs. The response was presumably positive.

In 1949, a new set of lugs was designed and introduced to the public at the Lightweight Show and subsequently presented in the 1950 catalog. These designs were not based on Chater Lea blanks or any other blanks then available to every builder who cared to use them. They were unique to Hetchins. They had Latin names: 'Magnum Opus', a great

work, 'Experto Crede', trust the expert, and so on. This range was extended over the next few years with 'Magnum Bonum', a great good (1951), and 'Vade Mecum,' go with me (1953). The Super Special was replaced by the 'Nulli Secundus', second to none. The complete set consisted of six designs, collectively known as the 'Latin Series' on account of their names: Magnum Opus, Magnum Bonum, Nulli Secundus, Vade Mecum, Cognoscenti, and Experto Crede. Only one of them, the Nulli Secundus, resembled anything seen before.

These lugs were based on castings which were then modified by cutting, filing, and drilling. But, unlike, previous lug designs by Hetchins or other builders, the Magnum Opus casting was not delivered from the foundry complete—new bits were added. Ornate extensions were welded to extend the base. The extensions started out as flat stock and were originally hand-cut. The join was filed smooth and, after chroming or painting, invisible.

Fig. 1



Magnum Opus casting showing the point where the extension was welded on.

A second method appears to have been developed later by Hetchins (possibly by Jack Denny). The lugs started out as lug-thickness sheet metal. A lug pattern was traced onto the surface, and then the metal was sawn and filed, by hand, until it matched the pattern. To increase productivity, 10 to 12 sheets would be riveted together and cut at once. Jack Denny used this procedure in the shop, but other lug cutters were also employed as subcontractors. After the sheets were cut, they were separated and pressed round a lug-like form into shape, with sockets to fit mitered tubes, and the seam was tacked shut. A press was used to form the flat cut-outs into finished lugs.

The lug cutters were provided with templates or sketches of the lug designs to use as cutting patterns (see Fig. 2 below). At least one full set of patterns has survived; one of them shows a Latin Series pattern which never went into production.

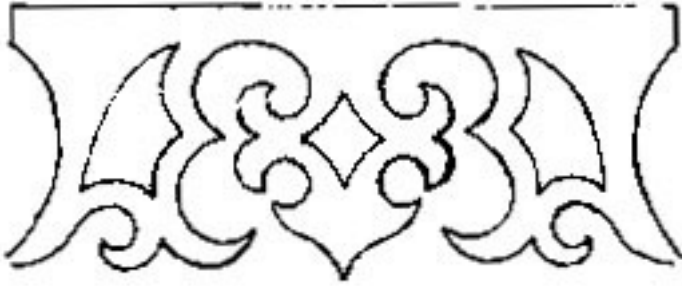


Fig. 2: Lug cutter's pattern, *Magnum Opus* version 2, top head lug.

A variation on this production method was to trace the lug pattern onto a single over-long lug blank and cut away the blank until it matched the pattern. Compared to the stack-method, this was time-consuming and labor-intensive. Moreover, two lugs could hardly be cut identically by this process, whereas stack-cut lugs would come out in identical dozens.

Starting in 1956, the *Experto Crede* model was offered in two versions, cast and pressed. The *Experto Crede* was a big seller, and it is possible that pressed versions were offered as they could be turned out more quickly to meet the high demand.

The production records from 1950 to 1960 list over 4,700 frames; at three lugs per frame, this comes to over 14,000 lugs. It is scarcely possible that they were cut singly from pre-formed blanks, even by several subcontractors. The vast majority must have been cast or stack-cut. Single-cut blanks would have been likely only for prototypes, new designs, or testing purposes.

The fleur-de-lys extensions (for fork crowns and brake bridges) were later die-stamped.

A few of the designs were not commercially successful and later dropped (e.g., the *Cognoscenti*), whereas several others were well received by the public and established Hetchin's reputation as 'a marque of distinction'. One model in particular, the second version of the *Magnum Opus*, introduced in 1953, came to embody the *Hetchins Look* in the cycling public's consciousness (see Fig. 3. below). Production and sales figures from 1950 to 1960 were strong, averaging 430 frames per year over eleven years. Additional frame builders were hired for the shop, and some frames were probably subcontracted to other London builders as well, to meet the large number of orders. This was undoubtedly Hetchin's heyday. I shall call this the **second** period of design development.



Fig. 3: Magnum Opus version 2, introduced 1953.

Third Period (bread-and-butter models introduced)

In the 1960s and 70s, another, ***third***, burst of lug design activity occurred. In addition to the Latin Series, Hetchins introduced new models based on industry-standard lug blanks, such as Prugnat or Nervex, and modified them. The Mountain King, for example, is simply a Prugnat long point lug with bits filed and drilled away. The Italia and Swallow models also used industry-standard Prugnat lugs with slashes or scallops (many variations are known). The Keyhole and Spyder are other lug designs based on standard lug blanks which were cut, filed, and drilled. Italias, Swallows, Keyholes, and Spyders were probably Alf's bread-and-butter frames, and hundreds were exported to the USA, while the more exotic Latin Series models were becoming increasingly pricey, compared to the rest of the market, and affordable only for an increasingly elite clientele.

In the 1970s, Alf diversified, commissioning an unknown number of frames from an Italian builder; they bore Hetchins paint, transfers, and badges, and many were exported to the USA to compete against such major players as Cinelli, Masi, Colnago, Pogliaghi, and De Rosa.

By the 1970s, orders had dropped to a half or a third of the levels of the 1950s and the other frame builders who had been in Hetchin's employ (Bob Stratfull and Stan Broom) were gone. Jack Denny, by then an old man, continued building frames, but from about 1977 onwards, some of the production, including the Latin Series, was carried out by subcontract to Bob Jackson Cycles (Leeds).

From the 1970s, in addition to the bread-and-butter frames, Alf catered to a very specific clientele on the principle that the customer got whatever he wanted. Collectors sometimes purchased several frames and never rode them; a number of such special-order frames have survived from this period. They often have elaborate embellishments, for example the customer's initials cut into an ornament extending 30 cm or more along the seat tube (example: <http://www.hetchins.org/504d.htm>). These extra ornaments were cut, one-at-a-time by hand, from flat stock.

By the 1980s, this dual system of bread-and-butter frames based on industry-standard lugs and the Latin Series for choosier customers was no longer economically viable. Bread-and-butter frames were being made faster and cheaper by other, mass-production manufacturers, and the market for one-offs was too small to sustain the shop. In 1982, Alf commissioned a study by Hugh O'Neill, the conclusion of which was that Alf would have to find a new frame builder and invest in substantial modernization, or give up. By April 1986, he had sold the business.

This concludes what I would call the **third** major period of Hetchins design, and subsumes what has elsewhere at the web site been separated under two region-based headings (Tottenham and Southend). No catalog was issued from 1964 to 1987. The names *Swallow*, *Keyhole*, and *Spyder* do not appear in any catalog, neither before 1964 nor after 1987. The names are taken from Hetchin's sales ledgers, and it is somewhat conjectural what features distinguished them from each other or from other similar designs (the Italia and the Swallow, for example, are very similar).



Fig. 4: 1984 Spyder

Fourth Period (simplification)

The **fourth** period of Hetchins design development commences in the months immediately after the sale of Hetchins and its *de jure* unification with Bob Jackson Cycles after April 1986.

Under new ownership and management, Hetchins/Jackson proceeded to do what O'Neill had previously said would have to be done, namely to modernize the operation. First, the dozen or so lug designs from the 1950-1986 period were reduced to three. Second, the method for producing the remaining lug designs was modernized and simplified. And third, a number of frames were produced as prototypes or exhibition frames (example: <http://www.hetchins.org/504bjcmo-01.htm>) for a newly designed catalog in 1987 (<http://www.hetchins.org/303>).

1. *Reduction of the number of lug designs:* the 1964 catalog listed the following models: Italia, Vade Mecum i, ii, and iii, Experto Crede, Experto Crede Plus, Mountain King, Mountain King deluxe, Nulli Secudus, Magnum Bonum, Magnum Opus, and Track Supreme. In addition, Keyholes, Swallows, Spyderys, Specials, and deluxes were made to order. Of these, four were crystallized out, but in the event only *three* appeared in the 1987 catalog. The three remaining models were: *Magnum Opus*, *Scorpion Bonum*, and *Novus Ductor*. At least one prototype or catalog frame designated 'Magnum Bonum' was produced, but it did not appear in the new catalog. It would appear that it was replaced by the new Scorpion Bonum design.

2. *Simplification of the lug-making process:* by this time, the firms which had formerly supplied the elaborate Latin Series castings were no longer supplying them (or no longer even in business), and the hand-cutting of sheets of lug material was no longer affordable. Perhaps the craft itself was dying, as new trainees were lacking. Jackson turned to industry-standard blanks and modified them, just as Jack Denny had done in the 1940s (using Chater Lea blanks), and again later in the 60s and 70s (using Prugnat and Nervex). From 1987, exclusively industry-standard blanks were used; so far as I know, only a very few prototypes, if any, could have been made the old-fashioned way by hacking at sheet metal or long blanks; more likely, a few remaining sets of original castings may have been used up. The industry-standard blanks used are what is called a three-window pointed lug, as used by any number of other frame builders. It looks like a Prugnat lug and often has heart-shaped windows. See Fig.5 below: 3-window standard lug blank; stamped tang.



The above two simplifications resulted in the following: the three lug designs to be offered in the 1987 catalog were all based on the same industry-standard three-window pointed blanks; the difference between the models was simply a matter of brazing on more or fewer, or longer or shorter, tangs: the familiar Hetchins fleur-de-lys pattern. The differences among the three models were: **a)** whether tangs were also added to the bottom bracket (none for Novus Ductor, short tangs for Scorpion Bonum, long tangs for Magnum Opus), whether tangs were also added to the brake bridge (ditto), and the length of the tangs added to the fork crowns (short for ND, medium for SB, long for MO); **and b)** the MO head lugs had a few extra slashes or scallops on the sides or underneath compared to the SB and ND. Many minor variations are known, but the basic design was: stamped tangs brazed onto industry-standard three-window pressed blanks (see Fig. 6 below). The deluxe version of the MO is characterized by cauliflowery bits added to the sides of the head lugs (rather than slashes or scallops cut out of them).

Whereas the ornamental tangs were die cut in previous decades, they are now laser cut.

While some may think that brazing tangs onto industry-standard blanks is somehow less original than sawing sheet metal (or trimming castings), it is a logical development of what Hetchins had always done anyway, as early as the 1940s. Tangs had always been added to industry-standard lug blanks, fork crowns, brake bridges, and bottom brackets. The result was no less fancy than the legendary Latin Series from the 1950s, and it was economically viable for the 1980s. The lugwork on the current model, MO Mk 3 deluxe, covers more square millimeters of head, down, and top tube than the MO Mk 2 ever did.

This is what I would call the **fourth** design period, and it continues to this day.



Fig. 6: 1987 Magnum Opus 3.

The Hetchins Mystique

It was the MO Mk 2, produced from 1953 to 1986, which defined the *Hetchins Look*; it is that model which remains the most sought after by collectors and the one most likely to be replicated by rogue frame builders. Like the Mercedes 300 SL Gullwing—no matter what other sports cars Mercedes makes for the next hundred years, however technically advanced and aesthetically pleasing they may be, they will inevitably be compared (prejudicially) with the legendary Gullwing from the 1950s. I can well understand people who pine for the ‘old’ Hetchins (I myself have six of them from 1951 to 1984). As collector’s pieces, to hang on the wall and bring out twice a year at the Concours d’Elegance, they embody something intangible which may never again be seen or equalled. But for people who want a bike to ride, it must be conceded that the brakes and non-indexed gears of that period are in every way inferior to modern components and that a modern frame must meet modern standards and specifications to be safe on the road.

If, as some commentators have claimed, there was some definite point at which ‘old’ Hetchins became ‘new’ Hetchins—when the mystique began to fade—, then I suppose they would latch onto April 1986 as the cut-off date. That was when Alf sold the business and production was *de jure* transferred to Bob Jackson Cycles. But there is a flaw in that argument. Alf had been *de facto* subcontracting the work to Jackson anyway since 1977. Ah, but the lugs were redesigned as well after 1986, one might counter. But there is a flaw in that argument, too. Alf carried on as a part-time consultant until 1990, well after the new designs had been launched, and he must have had a hand in the new designs.

Those who pine for the ‘old’ Hetchins may, I fear, be partly laboring under some myths which have grown up about Hetchins. So it is time to blast a few of them.

Myth no. 1: *Jack Denny made every Hetchins* (with its corollary: a Hetchins not made by Jack is less genuine). There were other frame builders in Hetchin’s employ in the 1950s and 60s, Stan Broom and Bob Stratfull by name. (You can see one of Bob’s weekly time cards with his piece-work wages at the web site: <http://www.hetchins.org/202b.htm>.) Without a builder’s frame card, there is no way to determine which of them built a particular frame. No difference in quality has ever been ascertained. Moreover, both Harry and Alf subcontracted frame building during periods when the in-house staff were not able to keep up with the work load.

Myth no. 2: *every Hetchins was custom-made*. First let us define ‘custom-made’. ‘Hand-made’ is pretty clear: it means that a robot did not do the brazing, a craftsman did. In the case of many frames from Hetchin’s heyday in the 1950s, even the lugs were hand-made by a craftsman (though not all by Jack Denny). Of course, many parts were not hand-made, neither in Hetchin’s workshop nor by subcontractors: the topeyes, dropouts, tubes, cable stops & guides, fittings, fork crowns, and so on were mass-produced products. A totally hand-made frame you will not get even from Alex Singer, who was famed for making his own fitments, brakes, and panniers—even Alex Singer used industry-standard tubes and dropouts. ‘*Custom-made*’ means built to customer specifications, the opposite of off-the-peg. ‘Off-the-peg’ means built before the customer is known, to some fixed set of dimensions—and Hetchins made thousands of those. The catalogs give the designations of the fixed-dimension models: Road Model No.2, Road Model No.3, Road Model No.3a, Path Model No.10, Circuit of Britain, etc. A customer who wanted something else got it; such a frame was called a ‘*Set Up*’ (an example builder’s card for a Set Up is shown at the

web site: <http://www.hetchins.org/202a.htm>). Production and sales records indicate that the number of Set Ups was small; less than 10% of the total production. Moreover, Hetchins often built frame sets and left them unfinished (no paint, no fitments, etc.) until a prospective customer walked in the door who wanted something close enough to it for it to be promised to him and finished off. That was how it was, in those days, and certainly not only at Hetchins. Every cycle manufacturer had slow months of the year and had to pay his frame builder(s) to make off-the-peggers until the summer months when business boomed again. Thus, some frames (even the most elegant models) were sold long after they were built, sometimes years later—this accounts for a number of anomalies in the dating of frames in the Hetchins Register (kept for many years by Len Ingram). So it is simply way off the mark to claim that every Hetchins was custom-built in the sense of made-to-measure for a specific customer. On the contrary, the percentage of off-the-peggers was highest precisely during Hetchin's heyday, the 'old' period, and encompasses all the Latin Series models.

In case that was not put forthrightly enough: just because you're the original owner of a Magnum Opus Mk 2, that doesn't mean it was custom-made by Jack Denny! It may have collected dust as a partial-assembly for ten years before being sold off the peg, and Jack may never have touched it. Nonetheless, all Hetchins were *hand-made*.

If, after reading and digesting the above, if, after having discarded all guru-ism, hyperbole, and false myths about how and why they were made, you still think a 1950s Latin Series Hetchins embodies something special, valuable, and evocative of a remarkable historical period (Britain was pulling itself up by the bootstraps after a devastating war), *because it is a fine piece of craftsmanship*, then I understand your passion and share it.

That quality remained consistently high, even for off-the-peggers, is the real tribute to Hetchins and what, perhaps as much as the elegance of the Latin Series, distinguished it from its competitors. Virtually every other frame builder eventually compromised quality for quantity, or went bust. Hetchins did neither.



Fig. 7: 1990 Magnum Opus 3 deluxe.

Recent Hetchins

In 1993 Jackson Cycles and Hetchins parted ways; David Miller, who had been the manager at Jackson Cycles, left, taking the Hetchins marque with him. Since then, David reports, the MO deluxe is pretty much the only model which anyone still orders, the others having been relegated to insignificance. If a customer wants a Scorpion Bonum, David will build it for him, but the reality is that the model selection has been effectively reduced to a single one: whatever the customer wants. And the customer generally wants an MO deluxe. There have been some special editions—a 60th Anniversary edition and the MO Millennium, for example, which were even fancier than the MO deluxe. These were not remakes of the famous designs from Hetchin's heyday in the 1950s, but logical and historical developments of them. If a firm were not to develop in 50 years, it would not be maintaining its reputation, but embalming it. The brand shows a consistent historical development in keeping with the industrial advancements of the day, while retaining a high degree of brand recognition (rather like the radiator grills on RollsRoyces or Aston Martins).

Every Hetchins made today is not only as hand-made as ever, but absolutely custom-made to individual customer specification. One myth, at any rate, has become reality. Nowadays, Hetchins caters to a very small group of collectors who are looking for a piece of tradition but made with modern materials to modern standards and specifications. I think it is fair to say that the very best of what Hetchins ever was is the part that survives today, reduced to its essentials. See Fig. 8 (next page).



Fig. 8: 2020 Magnum Opus in 953 Stainless

A Cycling Icon

Hetchin's place in cycling may be summed up thus: while a few other frame builders were a match for Hetchins, or even more than a match, in terms of craftsmanship—one might mention Les Ephgrave and W.B. Hurlow—, nonetheless, Hetchins is the standard by which others are judged, as far as lugged steel frames are concerned. Hetchins is a cycling icon.

This is confirmed in several ways. Anyone who follows Internet cycling forums will notice that whenever a lugged steel frame is compared for quality, it is Hetchins to which it is compared. Second, Hetchins are highly sought by collectors, called by some “the Holy Grail” of cycle collecting. Third, a number of highly-respected steel-frame builders explicitly state that they were inspired by Hetchins. And the most backhanded (or underhanded) compliment of all is that when rogue builders forge a classic frame, it is Hetchins they forge; plagiarism is the sincerest form of flattery.

Hetchins achieved its iconic status through a combination of factors. These include:

- a) technical innovation (as evidenced by several patents);
- b) consistently high quality of workmanship and finish even at relatively high production levels;
- c) intrinsically pleasing designs;
- d) brand recognition (significantly increased by the export market) and brand loyalty (Hetchins owners are phenomenally loyal, many of them owning several machines from different periods—Jimmy Thomson was probably the record-holder, with thirty or so);
- e) longevity (very few marques started in the 1930s or 40s are still in production today).

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