A Catalog of Pickett Metal Slide Rules

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Background

When partners Roswell Colvert Pickett and Arthur F. Eckel began producing slide rules around the end of World War II, hand-held slide rules had already been developed to a plateau of uniformity. More than a century of work by highly creative inventors and manufacturers had evolved the general mechanical design, the scales, and even the sizes of slide rules to a point where the products of different makers were often quite similar – differing primarily in minor characteristics such as materials (e.g., basswood vs. mahogany vs. bamboo) or the arrangement of scales. The slide rules produced by leading companies such as Keuffel & Esser and Post were, by this time, well adapted to the needs of users and very well made – leaving little apparent opportunity for further innovation.

Nevertheless, it appears that Pickett and Eckel did see opportunities for innovation – not in the basic structure and scales of slide rules, but in two areas of rapidly developing technology: printing and materials science. Riding a post-war wave of technological progress in these areas, the company founded by Pickett and Eckel would, over a period of only three decades, capture a substantial fraction of the slide rule market by producing a large and distinctive inventory of slide rules. As a collector, I find Pickett slides rules especially interesting because they were constantly changing. It seems that every 2-4 years there was a notable change in the materials, mechanical design, or manufacturing process of Pickett slide rules, usually without significant change in the scales of particular models. In fact, over the 30+ years that Pickett manufactured slide rules, it is possible to define at least 12 distinct mechanical designs. Most of these designs were applied to each of about 14 core models that the company made, two different colors were produced for many, and there were numerous changes in logos and artwork, yielding perhaps 250 distinguishable variants of Pickett's core models. If we also count the 6-inch pocket models and the specialty and promotional slide rules, there may have been 350 distinct metal slide rules produced by Pickett during that company's relatively brief lifetime, and Pickett's plastic models add another 40 or so to that total. This represents an average of about one new slide rule per month!

For a collector obsessed with having "one of each," Pickett slide rules may be seen as either a dreamland or a nightmare, depending in large part on the collector's disposable income. My experience has been a bit of both. But what most intrigues me most as a Pickett collector is the "archeological" aspect of collecting – the challenge of reconstructing a progression of step-wise design modifications made over time by Pickett from a study of the slide rules themselves, much as an archeologist produces a record of civilization by examining shards of pottery. I find it interesting to consider what may have motivated the various design changes. Some were clearly attempts to leverage new technologies, some were apparently motivated by cost-cutting, and some are best explained as marketing gimmicks. The profitable ideas were kept, and the bad or less practical ones were eventually abandoned. What emerges is a fascinating history of Pickett Industries, a company that was clearly committed to innovation, willing to take risks, and unafraid of chaos. That legacy is written in the mechanical designs of its metal slide rules.

In this paper, I highlight the evolving design features of Pickett metal slide rules, propose a nomenclature for their classification, and present a catalog that covers the instruments I own as well as others that I have found pictured on websites or in eBay advertisements. Hopefully, this system of classification will enable more precise communications among Pickett aficionados and will enable efforts by the slide rule community at large to develop an exhaustive listing of Pickett products. That effort long predates my involvement and stems primarily from a landmark paper by Dr. Rodger Shepherd in 1992. In Vol. 1 of this Journal, Shepherd authored a paper entitled "Pickett Metal Slide Rules" in which he precisely described the key characteristics of these slide rules, thereby bringing some order to the seeming chaos of the Pickett world.[1] He published an update a few years later acknowledging that the variety of Pickett slide rules was even greater than he had originally recognized.[2] My revisitation of this topic is presented as a respectful extension of Shepherd's landmark work. For continuity, I have in large part retained Shepherd's overall classification system and terminology, but my system of categorization augments Shepherd's description by incorporating a few additional details of construction that I believe are significant. I also propose a set of five particular data elements, which I believe are necessary and sufficient for the practical classification of Pickett metal slide rules. Finally, I provide a listing of

distinguishable slide rules for fourteen of the most common models.

Given the enormous variety of Pickett slide rules and the limitations of my own collection and knowledge, the catalog that I present represents only a subset of the slide rules produced by this company. I focus on the 12-inch metal slide rule models intended for general users (also called 10-inch models since their printed scales are about 10 inches long). That selection excludes specialty models made for particular fields or industries, promotional models that were branded for specific companies or schools, presentation or "Executive" models intended as gifts or awards, the various 6-inch "pocket" models, and the large number of plastic models that Pickett also produced. Those other types of Pickett slide rules are worthy of systematic cataloging but are beyond the scope of this paper.

Mechanical Designs of Pickett Metal Slide Rules

All Pickett 12-inch metal slide rules have the same general design, consisting of two stators and a slide that moves in parallel between them (Fig. 1). The stators and slide engage through a pair of tongue-in-groove fittings. Two stator posts are permanently attached to each end of one stator with pairs of rivets, and the other stator is pinched between the stator posts at each end by tightening a screw. Loosening the screws, repositioning the stators, and retightening the screws allows a user to both align the scales printed on the stators and adjust the friction that resists movement of the slide. A cursor encircles this assembly and slides along its length. That cursor consists of two cursor bars, which contact the outer edges of the stators, and transparent lenses (usually front and back) that bridge between the cursor bars and lie parallel to the plane of the stator-slide-stator assembly. A "hairline" is scribed on the inner surface of each lens, perpendicular to the slide, and the lenses are attached to the cursor bars with small screws. Using the hairlines, a user can set the cursor to a particular value on one scale and then read the corresponding value on any other scale. Importantly, a small leaf spring rests in a recess of one cursor bar and pushes against the edge of one stator. This pulls the opposite cursor bar squarely against the other stator and ensures that the hairlines remain perpendicular to the slide rule scales at any cursor position. Finally, some models also contain a pair of hidden slide springs installed in cutouts in one stator under the stator posts. These slide springs push against the slide to make frictional resistance to movement of the slide less sensitive to adjustments of stator spacing.

This general mechanical design was used for all Pickett 12-inch metal slide rules and for nearly all metal "pocket" models. Despite the elegance of this general design, its assembly was remarkably complex; each slide rule was assembled from a total of 24-28 component parts. The precise shapes and constituent materials of these components evolved over time, generating 12 distinguishable designs (Fig. 2). These designs are described in detail in the text that follows.

Design M1A. This initial design appears to have been used only for the earliest Model 1, 2, 3, and 4 slide rules. The stators and slide were made of a magnesium alloy, coated on both sides by a thin plastic laminate onto which the scales were printed. These slide rules measure approximately 0.16 inch in thickness, except for the earliest Model 1 slide rules, which are 0.19 inch thick. Well-worn examples such as the one shown in Fig. 3 reveal that Design M1A stator posts were chrome-plated brass, and I presume that the same is true for the cursor bars, since these also show the distinctive shininess of chrome plating. Design M1A slide rules can be identified from photographs by two features that are also visible in Fig. 3 – the stator posts on one side have threaded holes to receive the stator screws (instead of threaded inserts) and the rivets ends are hollow.

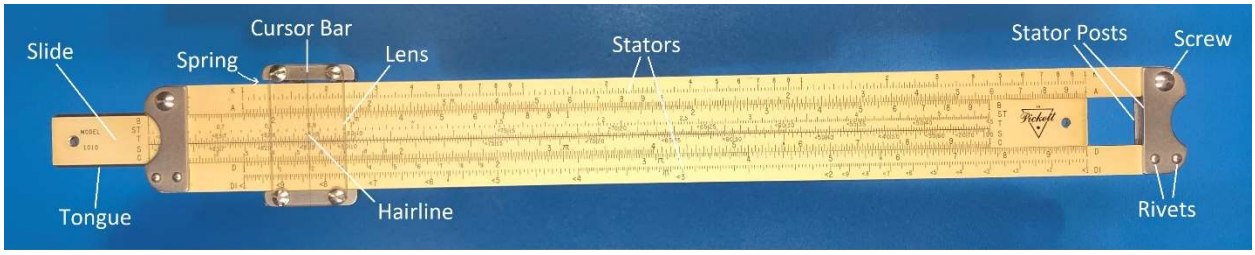

FIGURE 1. General Design of Pickett Metal Slide Rules. Despite the seeming simplicity of this general design, its construction required the assembly of 2 dozen or more component parts.

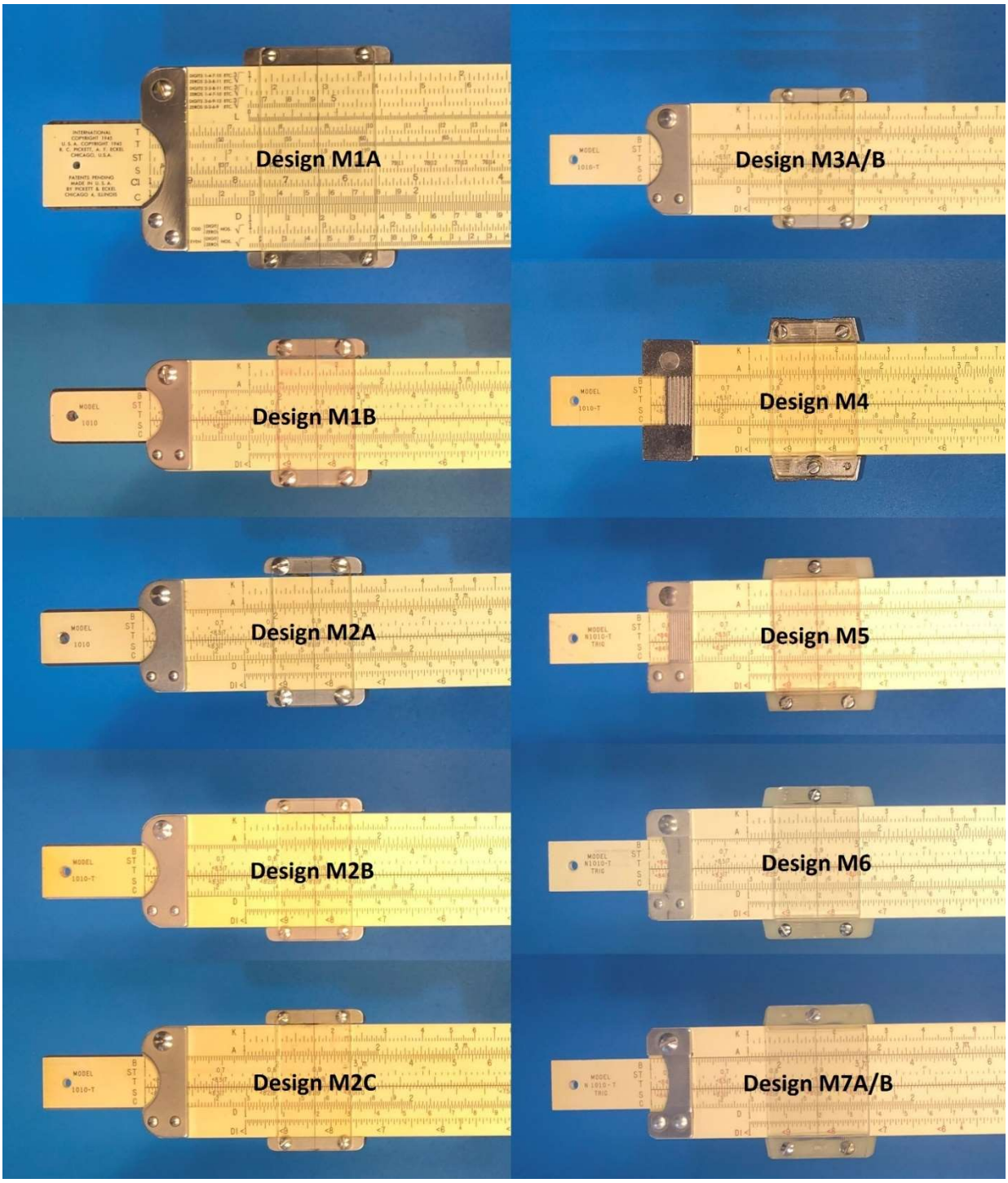

FIGURE 2. Variations in Pickett Metal Slide Rule Design over Time.
The numbering convention shown here largely follows the "Period" numbering system used by Shepherd[1] but with lettered subdivisions. Except for those that differ only by the presence or absence of slide springs (designs M3A vs. M3B and M7A vs. M7B), models can all be identified from a face-view photo in which the slide protrudes from one end.

Design M1B. With this design, Pickett began to use stator posts that were punched from 0.050-inch thick sheet metal. Cursor bars were machined from a similar appearing metal. This eliminated the need for chrome plating and presumably reduced production costs. Also beginning with this design, a threaded insert was used in the stator posts, eliminating the need for threading and providing a more durable anchor for the stator post

screws. Stator posts and cursor bars very similar to these would be used for 6 sequential designs (M1B–M3B).

Design M2A. A problem with the early Pickett metal slide rules was corrosion of the magnesium alloy. This could "freeze" the slide in place and cause pitting of the white coating of the slide rule faces (as is visible in Fig. 3). To overcome those problems, Pickett soon switched to aluminum stators and slides. That change in metal represents the only substantive difference between Design M1B and Design M2A. One additional, minor difference in manufacturing is noteworthy because it can help collectors distinguish similar magnesium and aluminum slide rules. The holes near the ends of the slides of magnesium slide rules were apparently made by a simple drilling process, while manufacture of the aluminum slide rules involved an additional step to "clean" the holes with a countersink bit. Hence, Design M2A slide rules usually show a shiny beveled rim around the slide holes.

Design M2B. Because the density of aluminum is about 50% greater than that of magnesium, Design M2A slide rules weigh about 50% more than the corresponding Design M1B models. Perhaps to reverse this increase in weight, Pickett next made a design change to reduce the thickness of its slide rules from approximately 0.15 inches to 0.10 inches. That change resulted in Design M2B aluminum slide rules, which weigh essentially the same as Design M1B magnesium slide rules of the same length and width. With this change, Pickett added a "-T" suffix to most of its model numbers, perhaps to identify these as "-thin" versions. Like Design M2A, Design M2B slide rules show a shiny beveled rim around the slide holes. Design M2A and M2B slide rules can be distinguished from pictures of their front or back faces by noting the head size of the cursor screws; the #2-56 screw of the M2A has a much larger head than the #1-64 screw used with the M2B (Fig. 2).

Design M2C. Pickett next changed the way that the metal stock was coated. Prior designs involved a white plastic laminate bonded to the metal stock prior to machining the slide holes, as can be inferred from the shiny bevels around the slide holes. For Design M2C (and subsequent) slide rules it is clear that a coating of liquid paint was applied by a spray technique instead and that this was done after the slide holes were machined. Beginning with Design M2C, paint covers the beveled rims of the slide holes, and overspray is visible within the holes themselves.

Design M3A. Pickett's next design change was to reverse the direction of the tongue-in-groove fitting between slide and stators, putting the grooves in the edges of the slide and having the tongues protrude

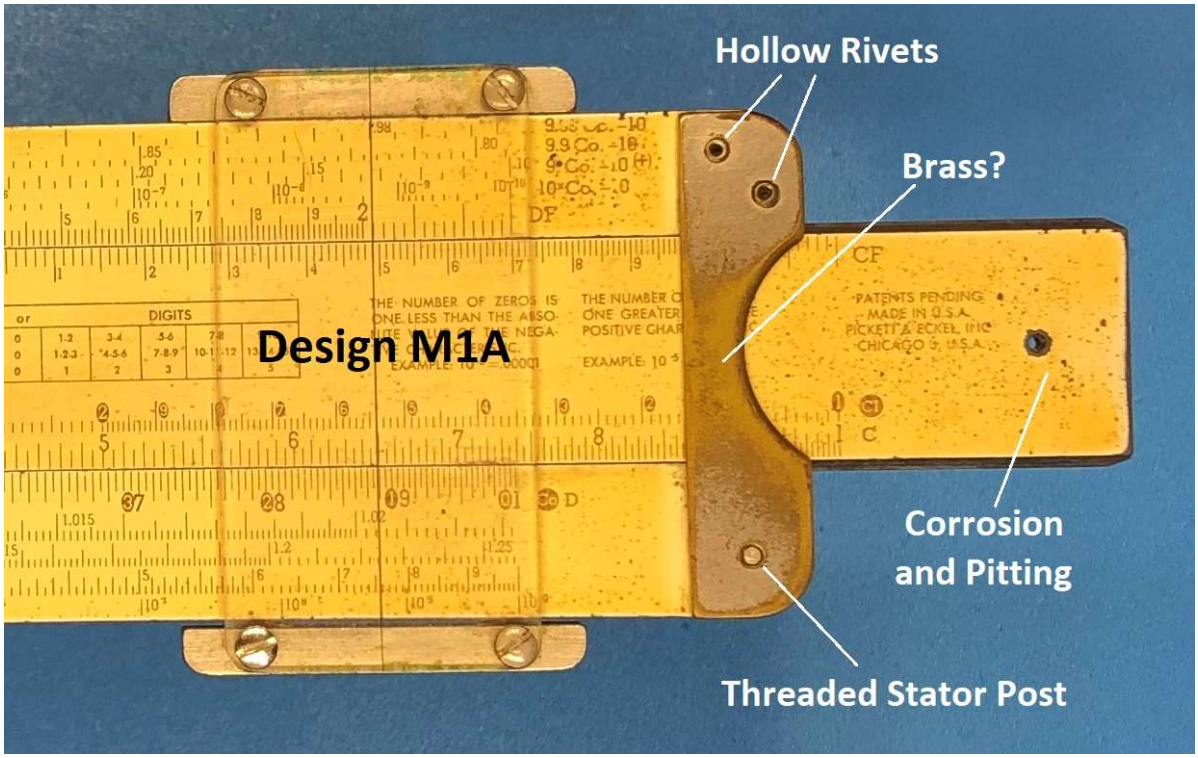

FIGURE 3. Design M1A Pickett Slide Rule. This well-worn Model 3 example shows loss of chrome plating, pitting of the printed surfaces, and magnesium corrosion in the slide hole.

inward from the stators. Prior to this, the inner edges of the stators had been grooved and the slide was machined to have a tongue on each edge.

Design M3B. The apparent reason for reversing the tongue-in-groove direction becomes clear with Design M3B, which added a cursor spring under each pair of stator posts. These springs press on one edge of the slide, making the frictional resistance to slide movement more consistent. It is impossible to distinguish Design M3A and M3B slide rules from the pictures normally provided in Ebay advertisements, but with a slide rule in hand one can either look from an end to see a spring under the stator posts or listen for a distinctive click as one end of the slide is passed between a pair of stator posts.

Design M4. Despite the distinguishing features described above, Designs M1A-M3B are actually very similar in appearance. In contrast, Design M4 is quite different from the previous designs (Fig. 2). Design M4 stator posts were manufactured by a die-cast process and consist of "clamshell" pairs that wrap around the tips and sides of the stator ends. "Rivet" heads are visible on only one side, indicating that these connectors mate with some integral shape cast into the opposite stator post. Design M4 cursor bars are trapezoidal die-cast parts, and the cursor lenses are octagonal, molded lenses. The portions of the inner surfaces of the lenses that contact the cursor bars contain shallow ridges that run parallel to the body of the slide rule. Whereas previous cursor lenses were mounted with four screws, Design M4 and subsequent lenses are secured with only three screws.

Design M5. Pickett soon changed from die-cast metal to molded nylon cursor bars, and it indicated that change by adding an "N" prefix to most model numbers. An exception is Model 800, which appears to have added the "N" prefix very late, despite its prior production with nylon cursor bars. Design M5 cursor bars retain the trapezoidal shape of Design M4 but are thinner and longer. M5 lenses are similar to those used with Design M4, but are now attached with self-threading screws. At the same time, Pickett replaced the die-cast stator posts with square, U-shaped metal posts that appear to have been produced by a stamping process. Unlike Design M4, these posts do not extend beyond the edges or the ends of the stators. But like Design M4, the middle portion of the Design M5 stator post has ridges that run perpendicular to the long dimension of the slide.

Design M6. The next change in design involves only the stator posts. Design M6 stator posts have a curved rather than square "cutout," and the stamped ridges now run parallel to the slide.

Design M7A. The next design change involves only the molded cursor lenses. With Design M7A these were changed from flat to convex, possibly to provide slight magnification, their width was increased from 0.95 inches to 1.14 inches, and the molded ridges in the lenses that contact the cursor bars now run perpendicular to the long dimension of the slide rule. Design M7 slide rules are easily recognized in pictures as those having nylon cursor bars and lenses with a width nearly equal to the cursor bar length.

Design M7B. This design differs from Design M7A only by elimination of the slide springs.

Design M8. A final design differs from Design M7 primarily by the asymmetrical, scalloped shape of its stator post cutouts.

Fig. 4 shows how the shapes of the outer edges of the stators changed during the design evolution from M1A to M7. Because the outer stator edges mate with the cursor bars, changes that are visible in Fig. 4 coincide with the changes in cursor design described above. Note that stators of Designs M1A-M3B have grooved outer edges which center the cursor bars on the slide rule and position the cursor lenses close to, but not touching, the slide rule faces; the groove in the stator that contacts the cursor spring is wider than the groove in the opposite stator. In contrast, the stators of Designs M4-M7B have flat outer edges. For those later designs, the cursor lenses were molded with small flanges to center the cursor bars on the outer edges of the stators. Since the stator edges are not visible in typical photographs of slide rules that show only the printed surfaces, and since information about the stator edges is redundant with other characteristics, I chose not to use stator edge contour as a defining feature for the design categories described above.

Models and Scales

Pickett used each of the designs described above to produce a variety of different slide rule "models." Particular models contain 6 to 34 scales that were thoughtfully selected to meet the needs of a specific type of user. Models are identified by numeric names of 1 to 4 digits, many of which remained in production for three decades with only minor variations in scale number and placement.

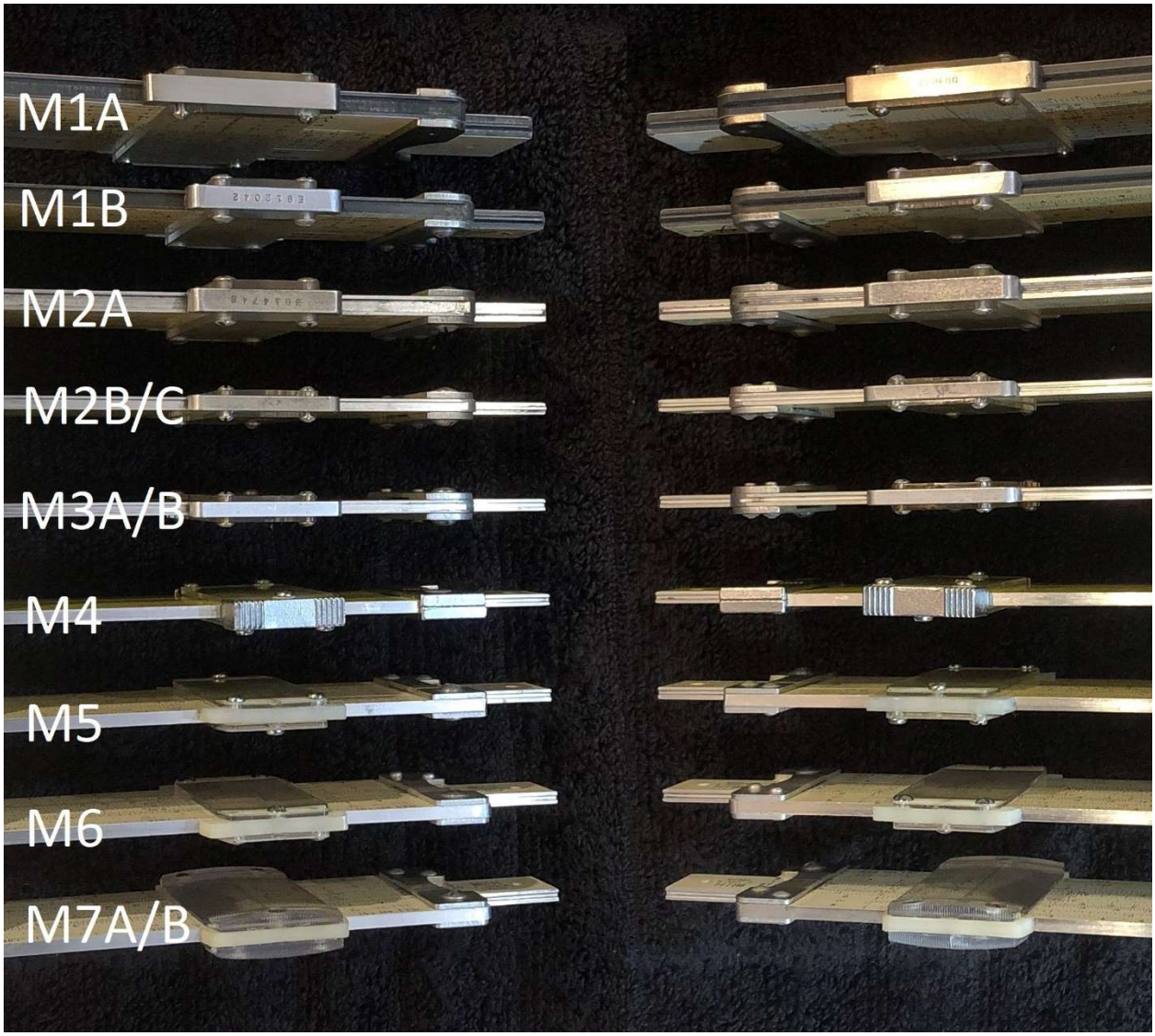

FIGURE 4. Variations in the Shape of Stator Outer Edges. The left side of this figure shows the stator edges that contact the cursor spring. The slide rules pictured are all Model 500 except for Design M1A, which is Model 1.

This section describes fourteen 12-inch metal slide rule models that Pickett produced for the general consumer market, including the most common models. I identify the scales included for each model below, demarking those on the slide within brackets ([…]) and using a slash (/) to separate the scales of the front and back faces, respectively.

Basic Models. These models were intended for users who needed a simple, low-cost slide rule for general arithmetic calculations. Pickett marketed several basic models simultaneously, which differed with regard to the number of scales (6-10), the placement of those scales, and the type of information printed on the reverse side. These 12 x 1¼ inch (30.5cm x 3.2cm) slide rules have scales printed on the front side only (Simplex), except for Model 904 and some late Model 901 rules that each have 20-log unit "decimal keeper" scales on the reverse side, designated C* and D*, which can be used to compute the exponent in multiplication and division of numbers in scientific notation. Models 901 and 902 were produced throughout most of the Pickett company's lifetime using a wide range of mechanical designs. Model 902 included two trigonometric scales, and Model 903 added CF and DF scales, while eliminating the rarely used B scale.

Model 901

Designs M1B-M2A: A [B 1/C C] D K -- Reverse side contains instructions for how to use a slide rule
Designs M2B-M5: K A [B CI C] D L -- Reverse side contains equivalents
Designs M5-M7A: K A [B CI C] D L -- Reverse side contains instructions and equivalents
Design M7A: A [B CI C] D L / X [Y C*] D*

Model 902

Designs M1B-M5: K A [B S T C] D L -- Reverse side contains instructions for how to use a slide rule
Designs M5-M7B: K A [B T S CI C] D L -- Reverse side contains instructions and decimal equivalents

Model 903

Design M2A: K A [B T S CI C] D L -- Reverse side has conversion factors
Designs M2C-M5: K A DF [CF T S CI C] D L -- Reverse side has tics for slide settings for conversions.
Designs M5-M7B: K A DF [CF T S CI C] D L -- Reverse side has conversion factors, decimal equivalents, and instructions.

Model 904

Designs M5-M7A: K A [B T S CI C] D L / X [Y C*] D*

Trigonometric Models. These duplex 12 x 1¼ inch slide rules have all of the scales necessary for efficient arithmetic and trigonometric computations, including three folded scales (CF, DF, and CIF) and the usual three trigonometric scales (S, ST, and T).

Model 1000

Design M1B: A [B T ST S] D K / DF [CF CIF CI C] D L

Model 1010

Designs M1B-M5: K A [B ST T S C] D DI / DF [CF CIF CI C] D L
Designs M5-M6: K A [B ST T S C] D DI / DF [CF CIF CI C] D DI L
Designs M7A-M7B: K A [B ST T S C] D DI / L DF [CF CIF CI C] D DI

Model 1011

Designs M5-M7B: K A [B ST T S C] D DI / Ln DF [CF CIF CI C] D DI L

Log Log Models. These duplex 12 x 1½ inch (30.5cm x 3.8cm) slide rules include log log scales based on natural logarithms (base e), which can be used to quickly compute expressions of the form x^y. Using the C scale of the slide to represent y, 6 log log scales allow calculations for values of x and x^y between 1.01 and 20,000 or between 0.99 and 0.00005. Model 800 and later Model 500 slide rules place the log log scales with reciprocal values adjacent to each other, which enables calculations for $y<0$. However, because these pairs of scales are scattered on both sides of the slide rule, a user must sometimes enter the values of x and y on one side of the slide rule and read the value of x^y on the opposite side, hoping that the cursor hairlines on the two sides are perfectly aligned. Earlier versions of Model 500 placed all log log scales for $x>1$ on one side and those for $x<1$ on the other, eliminating the need to turn the slide over during calculations with $y>0$. However, direct calculations involving negative y are not possible with these slide rules, since the scales for $x<1$ are not reciprocal to those for $x>1$ but rather use the B scale instead of the C to specify y. That approach provides a greater range for x and x^y values less than 1 (0.999 to 0.0001) using only two log log scales, but it has 2-fold lower precision in the readings. In later years, Pickett changed the Model 500 slide rule (renamed HI Log Log) to a scale set equivalent to the Model 800. It also introduced Model 803, which includes 8 log log scales, all printed on one side of the slide rule, thereby increasing the range for allowable x and x^y values and eliminating any need to turn the slide rule over for power calculations. However, with 28 scales crowded onto a 1½-inch wide slide rule, the Model 803 can be hard to read. Pickett probably offered such a wide variety of log log models to accommodate different user preferences with regard to these many technical trade-offs.

Model 500

Designs M1B-M2B: LL0 LL00 A [B T ST S] D K / L LL1 DF [CF CIF CI C] D LL3 LL2
Designs M2B-M5: LL0 LL00 A [B ST T S C] D K / L LL1 DF [CF CIF CI C] D LL3 LL2
Designs M6-M7B: +LL1 -LL1 A [B T ST S C] D DI K / +LL2 -LL2 DF [CF CIF L CI C] D +LL3 -LL3

Model 800

Designs M1B-M7B: LL1+/- A [B ST T S C] D DI K / LL2+/- DF [CF CIF L CI C] D LL3+/-

Model 803

Designs M4-M7A: LL0+/- LL1+/- DF [CF CIF L CI C] D LL2+/- LL3+/- /
√ √ K A [B S ST T CI C] D DI DF_M

Advanced Models.

These high-end models have dimensions of 12 x 2 inches (30.5cm x 5.8cm) – a width that can accommodate up to 34 scales. The first metal slide rule marketed by Pickett was the DeciPoint, which collectors have designated as Model 1. It modified the Rietz set of scales to include 5 scales for high precision calculations of square roots and cube roots instead of the usual A, B, and K scales. Model 1 was soon replaced by Model 2, which added 8 log log scales based on common logarithms (base 10) rather than the natural logarithms used subsequently for Models 500, 800, and 803. The CF_M and DF_M scales on Models 2, 3, and 4 slide rules are "folded" at 2.30=ln(10) rather than at π, as this facilitates conversions between natural and common logarithms. Differences between Model 2 and Model 3 are subtle, but Model 4 is distinctive in its inclusion of scales for hyperbolic trigonometric functions.

Model 1 (DeciPoint)

Design M1A: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ L [T T ST S CI C] D √ √ -- Reverse side has aids for computing decimal places

Model 2

Design M1A: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ L [T T ST S CI C] D √ √ / $1/N_1$ $1/N_2$ $1/N_3$ $1/N_4$ [CF CI C] D N_1 N_2 N_3 N_4
Designs M1B-M2A: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T T ST S CI C] D DI √ √ /
N_1 $1/N_1$ N_2 $1/N_2$ DF_M [CF_M L CI C] D N_3 $1/N_3$ N_4 $1/N_4$
Designs M4-M5: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T T ST S CI C] D DI √ √ /
LL1+/- LL2+/- DF_M [CF_M L CI C] D LL3+/- LL4+/-

Model 3

Design M1A: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T ST S CI C] D DI √ √ /
$1/N_1$ $1/N_2$ $1/N_3$ $1/N_4$ DF [CF CI C] D N_1 N_2 N_3 N_4
Designs M1A-M1B: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T ST S CI C] D DI √ √ /
$1/N_1$ $1/N_2$ $1/N_3$ $1/N_4$ DF_M [CF_M CI C] D N_1 N_2 N_3 N_4
Designs M2CA-M4: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T ST S CI C] D DI √ √ /
$1/N_1$ $1/N_2$ $1/N_3$ $1/N_4$ DF_M [CF_M L CI C] D N_1 N_2 N_3 N_4
Designs M6-M7A: √ √ K A [B ST S T T CI C] D DI $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ /
LL0+/- LL1+/- DF [CF CIF Ln L CI C] D LL2+/- LL3+/-

Model 4

Design M1A-M1B: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T ST S CI C] D DI √ √ /
$1/N_1$ $1/N_2$ $1/N_3$ $1/N_4$ DF_M [CF_M Th Sh Sh CI C] D N_1 N_2 N_3 N_4
Design M1B-M2C: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T T ST S CI C] D DI √ √ /
N_1 $1/N_1$ N_2 $1/N_2$ DF_M [CF_M TH SH SH L CI C] D N_3 $1/N_3$ N_4 $1/N_4$
Design M3A-M5: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF T T ST S CI C] D DI √ √ /
LL1+/- LL2+/- DF_M [CF_M TH SH SH L CI C] D LL3+/- LL4+/-

Design M5: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF CIF T T ST S CI C] D DI √ √ /
LL1+/- LL2+/- DF_M [CF_M TH SH SH L CI C] D LL3+/- LL4+/-
Design M5-M7A: $\sqrt[3]{}\ \sqrt[3]{}\ \sqrt[3]{}$ DF [CF CIF T T ST S CI C] D DI √ √ /
LL1+/- LL2+/- DF_M [CF_M TH SH SH Ln L CI C] D LL3+/- LL4+/-

Other Distinguishing Features

Logos. Except for the earliest Design M1A versions, nearly all metal slide rules produced by Pickett contain a logo, usually on the right-hand side of the front face of the slide. Several different logos were used, as pictured in Fig 5. Following Shepherd,[1] I treat the oval found on the back side of Design M1A slide rules as a logo. There is a general order in which the various logos were introduced, but different logos seem to have been used simultaneously on different models. Also, the ordering of design changes and of logo changes cannot always be reconciled; for example, it appears that the Disk logo was used both before and after O-Script for certain models (e.g., 803 and 4). Nevertheless, logos are a convenient descriptor for characterizing slide rule variants, and their changes provide a useful complement to Pickett's other changes in printing. For example, it is quite helpful to recognize that the transition from Triangle to Disk appears to coincide with the introduction of yellow eye-saver versions (denoted with the suffix -ES), even though that transition occurred at different designs for different models.

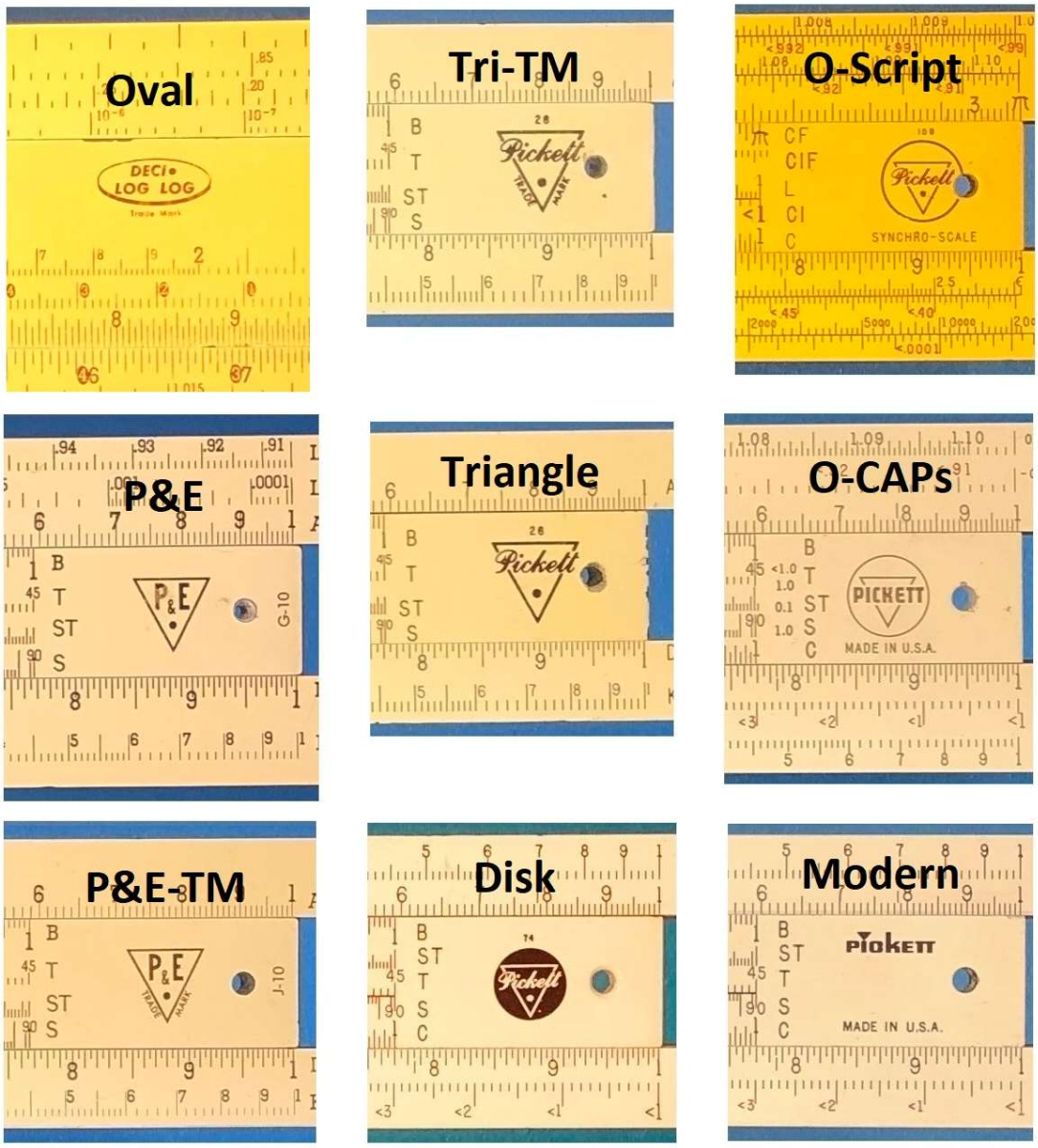

FIGURE 5. Logos used by Pickett Industries for Metal Slide Rules. I do not consider text beneath the Logo (as in these O-Script and O-CAPs examples) to be a part of the Logo.

Artwork. For many Pickett metal slide rules there is a two- or three-digit numerical code in small font on each side. These numbers presumably reference the particular artwork images that were used for printing the scales. The number on the front side is often positioned above the logo, while the location on the back side varies. Some slide rules have a code on the front or back side only, and some have no codes at all. The numbers of these artwork codes do not progress in a predictable way, but they do, nevertheless, provide a useful marker for describing distinguishable slide rules.

Reverse Scale Indicators. Nearly all Pickett metal slide rules contain at least one scale for which the numerical labels increase from right to left, rather than left to right. The most common of these is the CI scale, which represents the reciprocal of C. Except for the earliest models, Pickett printed the labels of these scales in a different way, so the user would be reminded to read the scale backwards. Several different methods were used to mark the reverse scales (described below as Field 5).

Proposed Data Elements for a Pickett Metal Slide Rule Catalog

Based on the slide rules I have acquired and my examination of many photographs posted at the International Slide Rule Museum (https://www.sliderulemuseum.com/) and on Ebay (https://www.ebay.com/), I suggest that the following descriptors are sufficient to distinguish nearly all variants of 12-inch Pickett metal slide rules: 1) Model number, 2) Design style, 3) Logo, 4) Artwork, and 5) Reverse scale labelling. Note that these five features represent just a small subset of the many characteristics that vary among Pickett slide rules and could potentially be used to distinguish them. Other differing features include size, weight, cursor screw metal composition, stator screw orientation, scales, color, model name, company name, font, city and postal code, copyright dates, logo size, logo-associated text, additional printed information, and misprints or errors. I have found that, with rare exceptions, variations in these other features are redundant with variations in the five core descriptors listed above. For example, a change in the number or placement of scales for a particular model is typically captured by a change in the Artwork code. Hence, the five core features listed above should serve well to index a catalog of Pickett metal slide rules, with a sixth "free text" descriptor added in occasional situations to distinguish two different slide rules that are identical with regard to the five standard characteristics.

Furthermore, in communications regarding different slide rule versions, it will be helpful to have a standardized vocabulary and notation. Standardized notation is useful 1) for collectors wishing to maintain an electronic inventory of their collection, 2) for sellers (as on eBay) who wish to provide a complete yet succinct description of a particular slide rule, and 3) for publications and data repositories that share listings of the known variants of Pickett metal slide rules. Hence, I also propose a defined syntax for describing distinguishable Pickett slide rule variants. That system specifies a preferred notation for six fields including the five core descriptors described above. Examples of this system's use are shown in the Appendix, which includes my own listing of known manufactured versions for fourteen common models of Pickett metal slide rules.

Field 1: Model Number. Manufacturer's code as printed on the slide rule but with removal of spaces.

Field 2: Mechanical Design. The letter M (for 12-inch metal slide rule) followed by an alphanumeric code as defined below (see Fig. 2).

- M1A: Chrome-plated cursor bars and stator posts. Hollow rivets. Magnesium stators and slide. Grooved stators. Threaded stator posts. Rectangular cursor lenses mounted with 4 screws.
- M1B: Same as M1A but with machined cursor bars and punched, smooth stator posts with threaded inserts.
- M2A: Same as M1B except aluminum stators and slide. Thickness ≈ 0.15 inch (3.81mm).
- M2B: Same as M2A but with thickness ≈ 0.10 inch (2.54mm).
- M2C: Same as M2B but with slide painted after machining of the slide holes.
- M3A: Same as M2C but with grooved slide instead of grooved stators.
- M3B: Same as M3A but with addition of slide springs under stator posts. The model designation M3 (without an A or B) should be used when it is not possible to determine whether slide springs are present (as when examining photos of the slide faces only).
- M4: Die-cast metal cursor bars and stator posts. Octagonal lenses attached with 3 screws. Slide springs.
- M5: Stamped stator posts with square cutouts and ridges perpendicular to the slide. Nylon cursor bars. Flat, octagonal lenses < 1 inch (2.54cm) width, with molded lines parallel to the slide, mounted with 3 screws. Slide springs.
- M6: Same as M5 but the stamped stator posts have contoured cutouts and ridges parallel to the slide.
- M7A: Same as M6 but with convex lenses > 1 inch

width that have molded lines perpendicular to the slide.

M7B: Same as M7A but without slide springs. The model designation M7 (without an A or B) should be used when it is not possible to determine whether slide springs are present (as when examining photos of the slide faces only).

M8: Same as M7 but with asymmetrical "scalloped" stator post cutouts and, possibly, a metal-framed cursor.

Field 3: Logo. Code as described below (see Fig. 5).

Oval: No logo. Model description surrounded by oval.

P&E: P&E within triangle. No TRADE MARK.

P&E-TM: P&E within triangle with TRADE MARK printed around lower vertex.

Tri-TM: Script "Pickett" over triangle with TRADE MARK printed around lower vertex.

Triangle: Script "Pickett" over triangle. No TRADE MARK.

Disk: Black-filled circle containing a reverse image of the Triangle logo.

O-Script: Script "Pickett" over triangle, all within a circle.

O-CAPs: All caps "PICKETT" over triangle, all within a circle.

Modern: "Pickett" printed in bold font with a triangle for the dot of the "i".

Field 4: Artwork. Numbers that are printed in small font on the front (side with primary scales) and/or back of the slide rule. Use "/" to separate front and back codes. Use "None" if no Artwork code is printed.

Field 5: Reverse Scale Notation. A descriptor from the list below.

N/A: Not applicable because no reverse scales are printed.

Same: Labels of reverse scales are not distinguished from others.

Dot: Labels of reverse scales are printed in background color within a black dot.

Circle: Labels of reverse scales are enclosed within a circle.

<Blk: Labels of reverse scales are preceded by "<".

<Red: Labels of reverse scales are preceded by "<" and printed in red.

Field 6: Other Descriptor. A concise description of any additional characteristic needed to distinguish slide rules with identical Fields 1-5. For example, the content of the back side of a simplex slide rule may be given as "/" followed by abbreviated text. This field should not be used to describe damage or alterations to a particular slide rule after manufacture. This field will usually be blank.

Chimeras and Ambiguities

It is not uncommon to find a slide rule with characteristics of two different designs. These may represent situations in which Pickett produced a limited run of slide rules by combining leftover parts of an old design with freshly manufactured parts of a new design. One such example in my collection is a 901-T (not N901-T) with Triangle logo and die-cast cursor bars, all consistent with Design M4, but with the stamped, square stator posts that are unique to Design M5. This is a definitive example of a transitional or chimeric version. However, the majority of ambiguous examples I have encountered involve a slide rule that is entirely of one design except for having a cursor of a later design. Because the cursors of Designs M4-M7B are interchangeable with each other, there are many such possibilities, and in the absence of provenance from the original owner forward, it is impossible in these cases to distinguish between Pickett's manufacture of a chimeric version and an owner's later replacement of a broken cursor. Given this uncertainty, I choose not to identify as chimeric any slide rule that could be explained by cursor replacement.

Another type of classification ambiguity is mismatch between color and the -T or -ES designation. I am aware of three examples. One is an N901-T M5 Disk 65/ <Blk slide rule in my own collection that was produced using stock painted with the bright yellow color characteristic of -ES (eye-saver) slide rules. Two others examples have been reported in this Journal. One is an N3-T M5 rule found by Bob Koppany.[3] The other is an N2-T M5 slide rule recognized by Dr. Simi Lyss.[4] All three appear to have been produced near the time that Pickett first introduced the yellow eye-saver color option and may represent experimental uses of the new color.

Notes:

1. Shepherd, Rodger, *Pickett Metal Slide Rules*, Journal of the Oughtred Society, 1-1, Spring 1992
2. Shepherd, Rodger, *Pickett Metal Slide Rules – A Brief Update*. Journal of the Oughtred Society 3-2, Fall 1994
3. Koppany, Bob, *A Pickett N3T Variant*, Journal of the Oughtred Society, 19-1, Spring 2010
4. Lyss, Simi MD, *Pickett N2T Yellow Variant*, Journal of the Oughtred Society, 19-2, Fall 2010

Appendix

A Catalog of Pickett Metal Slide Rules (12-inch General Use Models, Updated August 2024)

(Variants listed in parentheses are expected to exist, but have not yet been found by the author.)

Basic Models

901

Model	Design	Logo	Artwork	Reverse	Other
No.901	M1B	Tri-TM	20/21	Circle	
No.901	M1B	Triangle	20/21	Circle	/Alhambra
No.901	M1B	Triangle	20/21	Circle	/No city
No.901	M2A	Triangle	20/21	Circle	
901-T	M2B	Triangle	65/	<Blk	
901-T	M2C	Triangle	65/	<Blk	
901-T	M3B	Triangle	65/	<Blk	
901-T	M4	Triangle	65/	<Blk	
901-T	M4&5	Triangle	65/	<Blk	Chimera
N901-T	M5	Disk	65/	<Blk	White /Equiv
N901-T	M5	Disk	65/	<Blk	Yellow /Equiv
N901-T	M5	Disk	65/	<Blk	White /InstrEquiv
N901-ES	M5	Disk	65/	<Blk	
N901-T	M6	Disk	65/	<Blk	
(N901-ES)	M6	Disk	65/	<Blk	
N901-T	M7A	Disk	65/	<Blk	/InstrEquiv
N901-T	M7A	Disk	65/	<Blk	/DecimalKeeper
N901-ES	M7A	Disk	65/	<Blk	/InstrEquiv
N901-ES	M7A	Disk	65/	<Blk	/DecimalKeeper
N901-T	M7A	Disk	None	<Blk	
N901-ES	M7A	Disk	None	<Blk	

902

Model	Design	Logo	Artwork	Reverse	Other
No.902	M1B	Triangle	40/41	<Blk	Alhambra, Thr-*
No.902	M1B	Triangle	40/41	<Blk	Alhambra, Thr+*
No.902	M1B	Triangle	40/41	<Blk	No city
No.902	M2A	Triangle	40/41	<Blk	©1949
No.902	M2A	Triangle	40/41	<Blk	No ©
902-T	M2B	Triangle	39/41	<Blk	
902-T	M2C	Triangle	39/41	<Blk	
902-T	M3A	Triangle	39/41	<Blk	
902-T	M3B	Triangle	39/41	<Blk	
902-T	M4	Triangle	39/41	<Blk	
N902-T	M5	Disk	39/41	<Blk	
N902-ES	M5	Disk	39/41	<Blk	
N902-T	M5	Disk	66/	<Blk	
N902-ES	M5	Disk	66/	<Blk	
N902-T	M6	Disk	66/41	<Blk	
N902-ES	M6	Disk	66/41	<Blk	
N902-T	M7A	Disk	66/41	<Blk	
N902-ES	M7A	Disk	66/41	<Blk	
(N902-T)	M7A	Disk	/41	<Blk	
N902-ES	M7A	Disk	/41	<Blk	
N902-T	M7A	Modern	None	<Blk	
N902-ES	M7A	Modern	None	<Blk	

N902-T	M7B	Modern	None	<Blk	
N902-ES	M7B	Modern	None	<Blk	

* Thr- Threaded holes do not extend through the entire thickness of the cursor bars
Thr+ Threaded holes do extend through the entire thickness of the cursor bars

903

Model	Design	Logo	Artwork	Reverse	Other
903	M2A	Triangle	66/	<Blk	
(903-T)	M2B	Triangle	?	<Blk	
903-T	M2C	Triangle	47/	<Blk	
903-T	M3B	Triangle	47/	<Blk	
903-T	M4	Triangle	47/	<Blk	
903-T	M5	Triangle	47/	<Blk	
(N903-T)	M5	Disk	47/	<Blk	/ConvTics
N903-T	M5	Disk	47/	<Blk	/DecEquivInstr
N903-ES	M5	Disk	47/	<Blk	/ConvTics
N903-ES	M5	Disk	47/	<Blk	/DecEquivInstr
N903-T	M6	Disk	47/	<Blk	
N903-ES	M6	Disk	47/	<Blk	
N903-T	M7A	Disk	None	<Blk	
(N903-ES)	M7A	Disk	None	<Blk	
(N903-T)	M7B	Disk	47/	<Blk	
N903-ES	M7B	Disk	47/	<Blk	

904

Model	Design	Logo	Artwork	Reverse	Other
N904-ES	M5	Disk	66/123	<Blk	
N904-T	M7A?	Disk	66/123?	<Blk	
N904-ES	M7A	Disk	66/123	<Blk	

Trigonometric Models

1000

Model	Design	Logo	Artwork	Reverse	Other
No.1000	M1B	P&E-TM	J10/K10	Dot	
No.1000	M1B	Tri-TM	26/27	Circle	
No.1000	M1B	Triangle	26/27	Circle	
No.1000	M1B	Triangle	26/271	<Blk	
No.1000	M1B	Triangle	261/271	<Blk	

1010

Model	Design	Logo	Artwork	Reverse	Other
1010	M1B	Triangle	74/271	<Blk	
1010	M2A	Triangle	74/271	<Blk	
1010-T	M2B	Triangle	74/271	<Blk	
1010-T	M2C	Triangle	74/271	<Blk	
1010-T	M2C	Disk	74/271	<Blk	
1010-ES	M2C	Disk	74/271	<Blk	
1010-T	M3A	Disk	74/271	<Blk	
1010-ES	M3A	Disk	74/271	<Blk	
1010-T	M3B	Disk	74/271	<Blk	
1010-ES	M3B	Disk	74/271	<Blk	
1010-T	M4	Disk	74/271	<Blk	
1010-ES	M4	Disk	74/271	<Blk	

N1010-T	M5	Disk	74/271	<Blk	
N1010-ES	M5	Disk	74/271	<Blk	
N1010-T	M5	Disk	74/272	<Blk	
N1010-ES	M5	Disk	74/272	<Blk	
N1010-T	M5	Disk	74/272	<Red	
N1010-ES	M5	Disk	74/272	<Red	
N1010-T	M6	Disk	74/272	<Red	
N1010-ES	M6	Disk	74/272	<Red	
N1010-MF	M6	Disk	None	<Blk	
N1010-T	M7A	Disk	74/272	<Red	
N1010-ES	M7A	Disk	74/272	<Red	
N1010-T	M7A	Disk	None	<Red	
N1010-ES	M7A	Disk	None	<Red	
N1010-T	M7A	Modern	None	<Red	
N1010-ES	M7A	Modern	None	<Red	
N1010-T	M7B	Modern	None	<Red	
N1010-ES	M7B	Modern	None	<Red	

1011

Model	Design	Logo	Artwork	Reverse	Other
1011-T	M5	Disk	74/272	<Red	
1011-ES	M5	Disk	74/272	<Red	
(1011-T)	M6	Disk	74/272	<Red	
1011-ES	M6	Disk	74/272	<Red	
1011-T	M7A	Disk	74/272	<Red	
1011-T	M7A	Disk	None	<Red	
1011-ES	M7A	Disk	None	<Red	
1011-T	M7B	Disk	None	<Red	
(1011-ES)	M7B	Disk	None	<Red	

Log Log Models

500

Model	Design	Logo	Artwork	Reverse	Other
No.500	M1B	P&E-TM	G10/H10	Dot	
No.500	M1B	P&E	G10/H10	Dot	
No.500	M1B	Triangle	G10/H10	Dot	
No.500	M1B	Triangle	None	Dot	
No.500	M1B	Triangle	32/33	<Blk	
No.500	M2A	Triangle	32/33	<Blk	
500	M2A	Triangle	32/33	<Blk	
500-T	M2B	Triangle	32/33	<Blk	
500-T	M2B	Triangle	34/35	<Blk	
500-T	M2C	Triangle	34/35	<Blk	
(500-T)	M2C	Disk	54/55	<Blk	
500-ES	M2C	Disk	54/55	<Blk	
500-T	M3A	Disk	54/55	<Blk	
500-ES	M3A	Disk	54/55	<Blk	
(500-T)	M3B	Disk	54/55	<Blk	
500-ES	M3B	Disk	54/55	<Blk	
(500-T)	M4	Disk	54/55	<Blk	
500-ES	M4	Disk	54/55	<Blk	
500-T	M5	Disk	54/55	<Red	
500-ES	M5	Disk	54/55	<Red	

N500-T	M5	Disk	54/55	<Blk	
N500-ES	M5	Disk	54/55	<Blk	
N500-T	M6	Disk	83/84	<Red	
N500-ES	M6	Disk	83/84	<Red	
N500-T	M7A	Disk	83/84	<Red	
N500-ES	M7A	Disk	83/84	<Red	
N500-T	M7A	O-CAPs	None	<Red	
N500-ES	M7A	O-CAPs	None	<Red	
N500-T	M7A	Modern	None	<Red	
N500-ES	M7A	Modern	None	<Red	/Logo L&R
N500-ES	M7A	Modern	None	<Red	/Logo R only
N500-T	M7B	Modern	None	<Red	/Logo L&R
N500-T	M7B	Modern	None	<Red	Logo R only
N500-ES	M7B	Modern	None	<Red	/Logo L&R
N500-ES	M7B	Modern	None	<Red	/Logo R only

800

Model	Design	Logo	Artwork	Reverse	Other
800	M1B	Triangle	44/45	<Blk	
800	M1B	Triangle	70/71	<Blk	
800	M2A	Triangle	70/71	<Blk	
800-T	M2B	Triangle	72/73	<Blk	
800-T	M2C	Triangle	72/73	<Blk	
(800-T)	M3A	Disk	104/103	<Blk	
800-ES	M3A	Disk	104/103	<Blk	
800-T	M3A	Disk	102/103	<Blk	
(800-ES)	M3A	Disk	102/103	<Blk	
800-T	M3B	Disk	102/103	<Blk	
(800-ES)	M3B	Disk	102/103	<Blk	
800-T	M3B	Disk	105/108	<Blk	
800-ES	M3B	Disk	105/108	<Blk	
800-T	M4	Disk	105/108	<Blk	
800-ES	M4	Disk	105/108	<Blk	
800-T	M5	Disk	105/108	<Blk	
800-ES	M5	Disk	105/108	<Blk	
N800-ES	M5	Disk	105/108	<Blk	
800-T	M5	Disk	105/108	<Red	
800-ES	M5	Disk	105/108	<Red	
800-T	M6	Disk	105/108	<Red	
800-ES	M6	Disk	105/108	<Red	
800-T	M7A	Disk	105/108	<Red	
800-ES	M7A	Disk	105/108	<Red	
N800-T	M7A	Modern	None	<Red	
N800-ES	M7A	Modern	None	<Red	
N800-T	M7B	Modern	None	<Red	
(N800-ES)	M7B	Modern	None	<Red	

803

Model	Design	Logo	Artwork	Reverse	Other
803-ES	M3B	Disk	109/110	<Blk	
803-T	M4	Disk	109/110	<Blk	
803-ES	M4	Disk	109/110	<Blk	
803-T	M5	Disk	109/110	<Blk	
803-ES	M5	Disk	109/110	<Blk	

(N803-T)	M5	Disk	109/110	<Blk	
N803-ES	M5	Disk	109/110	<Blk	
N803-T	M5	O-Script	109/110	<Red	
N803-ES	M5	O-Script	109/110	<Red	
N803-T	M6	O-Script	109/110	<Red	
N803-ES	M6	O-Script	109/110	<Red	
N803-T	M7A	O-Script	109/110	<Red	
N803-ES	M7A	O-Script	109/110	<Red	
N803-T	M7A	Disk	None	<Red	
N803-ES	M7A	Disk	None	<Red	
(N803-T)	M7A	Modern	None	<Red	
N803-ES	M7A	Modern	None	<Red	
(N803-T)	M7B	Modern	None	<Red	
N803-ES	M7B	Modern	None	<Red	

Advanced Models

1

Model	Design	Logo	Artwork	Reverse	Other
1	M1A	Oval	None	Same	0.19 inch thickness
1	M1A	Oval	None	Same	0.16 inch thickness

2

Model	Design	Logo	Artwork	Reverse	Other
2	M1A	Oval	None	+/- Dot	C1 Inverted π
2	M1A	Oval	None	Dot	CI Upright π
No.2	M1B	Triangle	46/47	<Blk	
No.2	M1B	Triangle	163/47	<Blk	
No.2	M2A	Triangle	163/47	<Blk	
2-T	M2B	Triangle	258/259	<Blk	
2-T	M3A	Triangle	258/259	<Blk	
2-T	M4	Triangle	258/259	<Blk	
N2-T	M5	Disk	258/259	<Blk	

3

Model	Design	Logo	Artwork	Reverse	Other
3	M1A	Oval	None	Dot	
3	M1A	Oval	None	Dot	VECTOR
No.3	M1A	P&E-TM	A10/E10	Dot	
No.3	M1A	P&E-TM	D11/E10	Dot	
No.3	M1B	Tri-TM	301/253	Dot	
No.3	M1B	Triangle	301/253	Dot	/Alhambra
No.3	M1B	Triangle	301/253	Dot	/No city
3-T	M2C	Triangle	244/245	<Blk	
3-T	M3A	Triangle	244/245	<Blk	
3-T	M4	Triangle	244/245	<Blk	
3-T	M5	Triangle	244/245	<Blk	
(N3-T)	M5	Disk	322/321	<Red	
N3-ES	M5	Disk	322/321	<Red	
N3-T	M6	Disk	322/321	<Red	Model# in red
N3-T	M6	Disk	322/321	<Red	Model# in black
N3-ES	M6	Disk	322/321	<Red	Model# in red

N3-ES	M6	Disk	322/321	<Red	Model# in black
N3-T	M6	Disk	None	<Red	
N3-ES	M6	Disk	None	<Red	
N3-T	M7A	Disk	322/321	<Red	
N3-ES	M7A	Disk	/321	<Red	
N3-T	M7A	Disk	None	<Red	
N3-ES	M7A	Disk	None	<Red	
N3-T	M7A	Modern	None	<Red	
N3-ES	M7A	Modern	None	<Red	

4

Model	Design	Logo	Artwork	Reverse	Other
4	M1A	Oval	None	Dot	
4	M1A	Oval	F3/	Dot	
No.4	M1A	P&E-TM	D10/F10	Dot	
No.4	M1B	Tri-TM	243/254	Dot	
No.4	M1B	Triangle	243/254	Dot	
No.4	M1B	Triangle	241/251	<Blk	
No.4	M2A	Triangle	241/251	<Blk	
4-T	M2B	Triangle	256/257	<Blk	
4-T	M2C	Triangle	256/257	<Blk	
4-T	M3A	Disk	256/257	<Blk	
4-T	M3B	Disk	256/300	<Blk	
4-ES	M3B	Disk	302/300	<Blk	
4-ES	M3B	Disk	302/303	<Blk	
4-T	M4	Disk	256/300	<Blk	
4-ES	M4	Disk	302/300	<Blk	
4-T	M5	Disk	256/300	<Blk	
N4-T	M5	Disk	306/300	<Blk	
N4-ES	M5	Disk	306/300	<Blk	
N4-T	M5	O-Script	306/307	<Red	
N4-ES	M5	O-Script	306/307	<Red	
N4-T	M6	O-Script	306/307	<Red	
N4-ES	M6	O-Script	306/307	<Red	
N4-T	M6	Disk	306/307	<Red	
N4-ES	M6	Disk	306/307	<Red	
N4-T	M6	Disk	None	<Red	
N4-ES	M6	Disk	None	<Red	
N4-T	M7A	Disk	None	<Red	
N4-ES	M7A	Disk	None	<Red	
N4-T	M7A	Modern	None	<Red	
N4-ES	M7A	Modern	None	<Red	
N4-ES	M7B	Modern	None	<Red	

Supplements and corrections to this catalog may be sent to the author at vadaagnes@aol.com.