From Frank Rühl to Peninim

A story of people, type and technology

Liron Lavi Turkenich

Submitted in partial fulfilment of the requirements of the Master of Arts in Typeface Design, Department of Typography and Graphic Communication, at the University of Reading, United Kingdom, September 2013.

Abstract

Frank Rühl, designed in 1910, was and still is the most popular Hebrew typeface in Israel. Like many others, it was adapted by Monotype to fit hot-metal typesetting and was redrawn and produced under the name 'Peninim'. The new opportunities for casting and setting Hebrew type together with vowel marks in a Monotype machine were influential and Peninim became Monotype's best selling Hebrew typeface. Three series were produced as part of Peninim: series 220 for unpointed characters, series 217 for pointed Hebrew and series 489 for casting Hebrew with Latin. Copyright issues, the small market for Hebrew and specific requirements made by customers defined the expansion of the typeface. The technical process of modification was surrounded by the mostly indirect communication between Monotype and Israel and included views about any need for another typeface, a relevant topic that could be applied for Monotype's other non-Latins.

This dissertation aims to provide a detailed description of Frank Rühl's adaptation from metal type for hand composition to hot-metal typesetting by comparing the two typefaces. The research was done mainly by reading correspondence from the Monotype archives in Salfords, including both personal views and facts. Matrix case arrangements, punches, 10-inch drawings and production logs are reviewed to allow a comprehensive understanding of the topic.

THE MONOTYPE CORPORATION LIMITED

Manufacture of New Faces

Series 489 HEBREW PENINIM 8-point with 101-8pt (Trial No.2)
For: St.Catherine, Bruges.

Proof received 7th September,1937. Sent to Mr.Morison

Approved 8th September,1937. No.H.1936.
by customer.

List of abbreviations:

MA – Monotype Archives

unkn – unknown

n.d. – not dated

M.C.A – matrix case arrangement

T.D.O – Type Drawing Office

– Design and typeset by Liron Lavi Turkenich.

– The Hebrew in the correspondence, books and articles were translated by the author unless stated otherwise.

– Photos are taken and figures are designed by the author unless stated otherwise.

– All images are shown at 100% scale unless stated otherwise. In some situations the image appears some pages before or after the text, a compromise for the benefit of presenting them at 100% scale.

– Appendix A is listing the Hebrew letters and vowel marks for convenient referring.

– The name of the costumer is often written as the subject in the correspondences.

– Note that the characters in most matrix cases accommodating Hebrew were produced upside down in the same way they would be cast. The keyboarding was done in the regular Hebrew direction and the type was cast backwards with the help of the reversed delivery method.

– Word count: 13,426

Contents

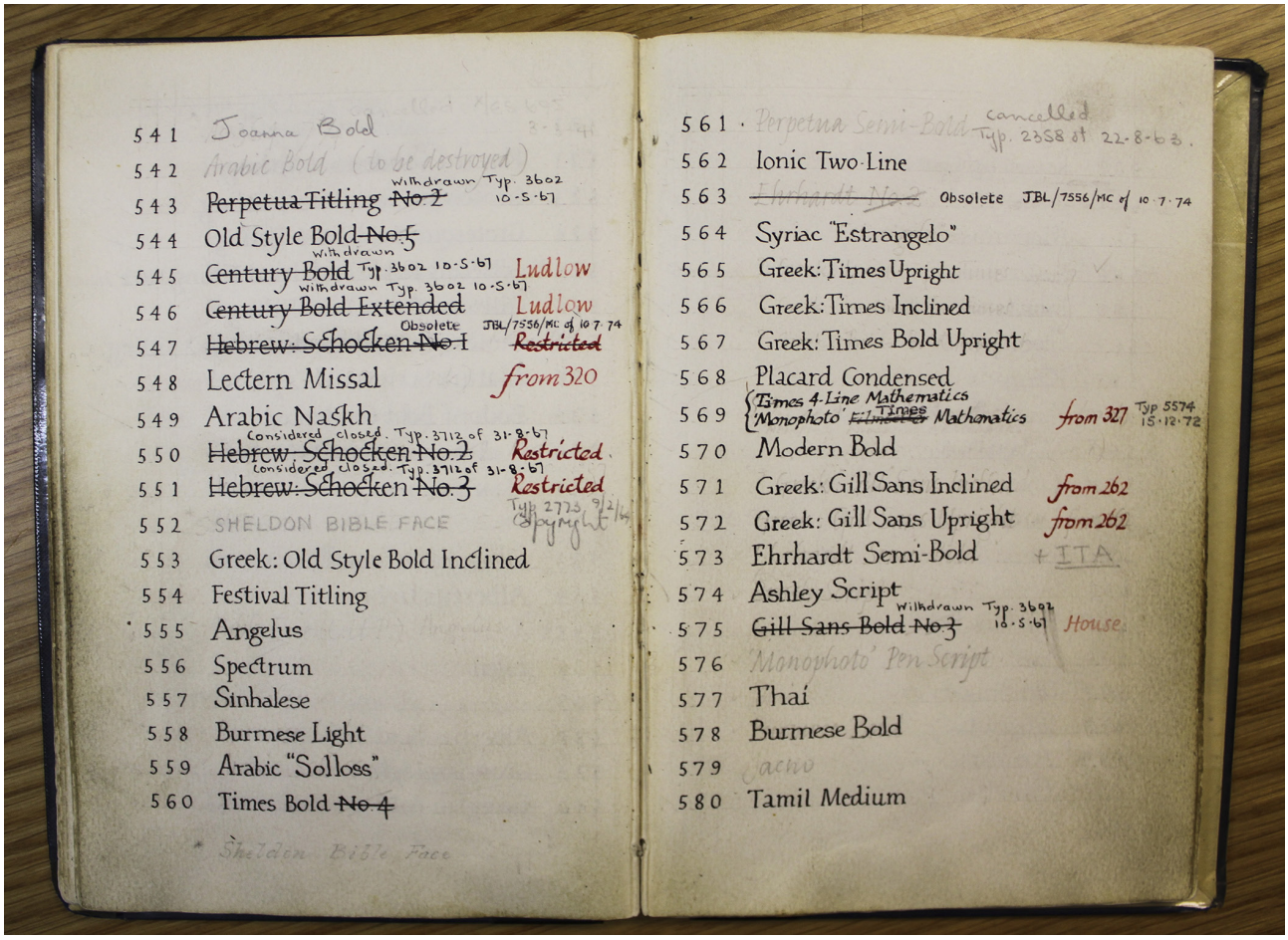

Figure 1.1 Type Drawing Office notebook listing all Monotype series numbers and names. (MA, Salfords)

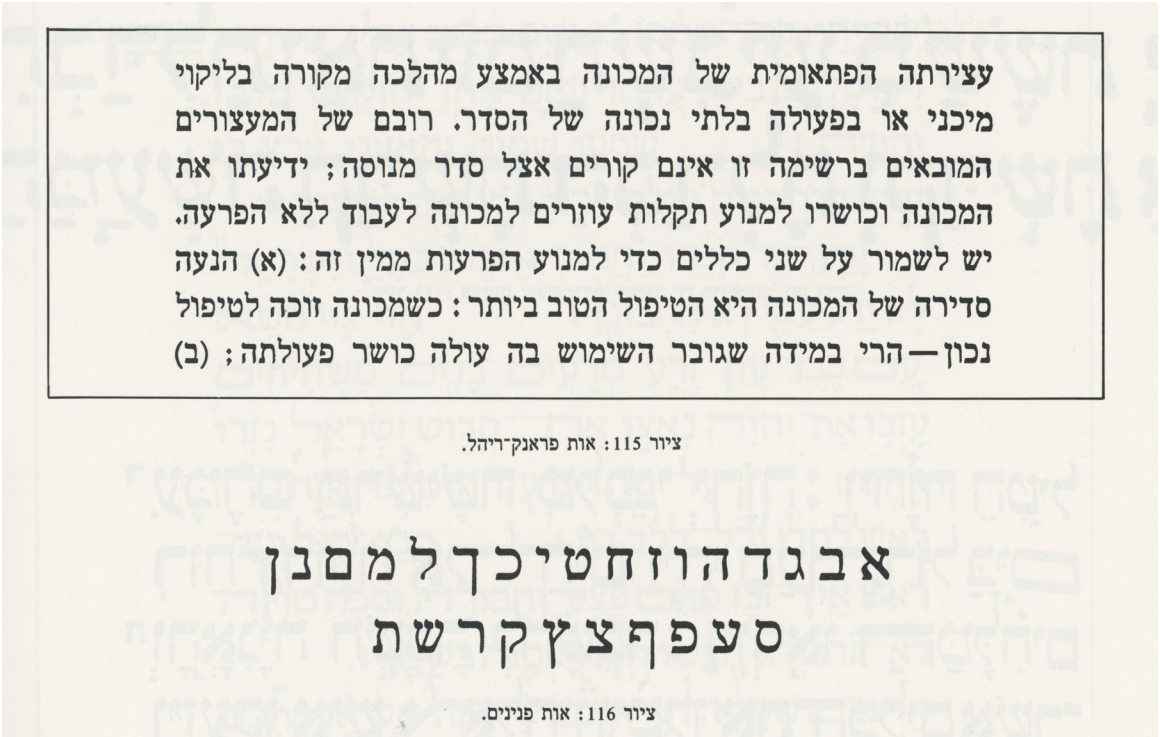

Figure 1.2 Top: Frank Rühl typeface, bottom: Monotype's version Peninim. From *'The Book of Hebrew Script'* (Yardeni, 1997)

1. Introduction

Within the impressive number of typefaces produced by Monotype, some non-Latin typefaces were cut, including a relatively large number of 11 Hebrew types[1] and several more that were abandoned over the years[2] (figure 1.1). Most of the early series were adaptations of existing typefaces, modified in order to be used for hot-metal typesetting. The aim of this dissertation is to compare what happened to the Hebrew typefaces during the transformation, while discussing the process in a broader view. In addition, issues relating to Monotype as a company providing machines and typefaces to local users around the world, without being able to read the script are interlaced throughout the dissertation, and may serve as an example for the other non-Latin faces that were produced. It is important to acknowledge that Monotype was controlling which typefaces were printed and used in hot-metal typesetting in Israel, therefore setting the tone of the printed matters in the country along with Linotype and Intertype.

Initially, this essay was meant to discuss all the Hebrew typefaces of both Linotype and Monotype. Later, due to a large quantity of material found, it was decided that instead of trying to spread and cover the majority of Hebrew typefaces it would be preferable to focus on one typeface in detail. The Peninim typeface chosen as the first Hebrew typeface produced by Monotype,[3] and although considered as one, it was produced as three different series for different usages and was the most popular Hebrew typeface ever cut in Monotype.

Peninim was based on Frank Rühl typeface, designed by Rafael Frank in Germany (figure 1.2). It is to this day the most commonly used typeface in Israel with many imitations and versions. Monotype's version – despite being requested by the clients Lerner & Teller to be as similar as possible to the original- was different due to the technology restrictions. As an example, in the pointed series unit widths had to be either 9 or 18 in order to allow good positioning of the vowel marks. Due to that, some characters had to be narrowed.

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1 According to a list sent by Monotype to Bezalel art and design academy in 1973. The Hebrew typeface listed are: Peninim (217, 220, 489), Sonzino (218), Ashurith (219), Levenim (221), Hebrew (222), Rabbinic (228), Mayer (488, 492), Koren (715, 716), Alachsoni (733), Dak (734, 736), Ave (735, 737)

2 the complete records can be seen in the Type Drawing Office handwritten notebook listing all Monotype series numbers and names.

3 In the UK.

In addition, proportion changing and emphasising of certain features and were included in the modifying of Frank Rühl as Peninim for the Monotype machine.

Within the limited scope of the essay, Peninim will only be reviewed in the Hot-Metal typesetting years starting from the new Hebrew composing options in 1920 until the transformation from metal to film in the 1960's

The first chapter consists of background necessary to understand the specific information about Peninim typeface. It contains a description of the original Frank Rühl designed by Rafael Frank, a brief introduction of the Monotype system and machine, information about composing and casting Hebrew in those machines and the relationship between Monotype and Israel. The second chapter, reviews the three series that were produced as part of Peninim typeface: series 217 of pointed Hebrew,[4] series 220 containing text and display sizes and series 489 which was produced in order to be cast with Latin. Additionally, a short summery of the copyright issue, the production process and requests from clients are detailed along with describing general issues regarding Hebrew such as combining few series in one matrix case. The sales of Peninim are also noted for the purpose of understanding the importance of the typeface. The last chapter deals with comparing the original Frank Rühl and Peninim typefaces by discussing the specific features of each in relation to itself and to the other version. Furthermore, the dissimilarities between each series are detailed.

See Appendix A about how the research through Correspondence in the Monotype archive was done.

4 'Points' refer to Hebrew vowel marks

Figure 2.1 Raphael Frank, signed by him.
The National Library of Israel, e-resource.
(The National Library of Israel. original: Frank, 1926)

Figure 2.2 Bomberg Typeface from *'Über hebräische Typen und Schriftarten'* (Frank, 1911)

2. Frank Rühl

The 1920's were years in which a large Jewish cultural community lived and acted in Berlin and were the natural audience and contributors to the growing appreciation of Hebrew as a graphic form in itself.[5] In 1911, Rafael Frank (1867-1920) the designer of Frank Rühl wrote an essay about his typeface (figure 2.1). The essay 'Über hebräische Typen und Schriftarten' was reprinted by Berthold typefoundry in 1926. The article begins by noting that the regained interest in the Hebrew language created a need for Hebrew typefaces to be used for printing bibles, Hebrew literature, newspapers and journals.[6] According to Ittai Tamari, the most important reasons for Frank Ruhl's success is that its appearance coincided with the rise of the Zionist movement, that required Hebrew typefaces for printing matters, and the need for a new, secular book face.[7]

Frank writes that the 'old' typefaces reflected the tool used – the broad nib pen, which doesn't allow any calligraphic sophistications. Through that statement, he probably promoted his own type face, which had more typographic forms and was influenced by the Jugendstil's decorative aesthetic. Daniel Bomberg's typeface (figure 2.2) from Venice was used as the inspiration for the design of Frank Rühl, and some alterations were introduced in the aim of better letter differentiation.[8] Because of those changes, Frank received some comments from non-Jews regarding this departure from traditional letterforms, but as a Sofer[9] he was able to provide acceptable explanations. According to him, in designing a Hebrew typeface, there is a need to receive approval from 'Shulchan Aruch'[10] which

5 Stephen Lubell, 'Joseph Tscherkassy – Orientalist and Typefounder,' Gutenberg-Jahrbuch 71, 1996. p.225, 229

6 Rafael Frank, 'Über Hebräische Typen Und Schriftarten,' Archiv Für Buchgewerbe 36, 1911. p.20-25.

7 Ittai Tamari, 'Digitization of Hebrew fonts, or: some evolutional evaluations,' in Raster imaging and digital typography, André and Roger Hersch, editors. Cambridge University Press, 1989, p.190–191

8 Koren claimes the opposite; according to him pairs of letters in Frank Rühl look too similar.
Eliyahu Koren, 'The Letter as a basic element in the design of sacred books,' in A Letter is forever, Moshe Spitzer, editor. Jerusalem: Israel Ministry of Education and Culture, 1990, p.85–90

9 A jewish scribe.

10 The code for Jewish law.

Figure 2.3 Frank's solution to distinguish between *Shin* and *Sin* in *'Über hebräische Typen und Schriftarten'* (Frank, 1911)

Figure 2.4 According to Frank, the stability of his typeface derives from straight tops of the letters. From *'Katalog hebräischer und Jüdischer Schriften'* (Berthold, H., 1924) [200%]

describes the form and structure that each letter should have.[11]

In the essay, he also mentions his new idea to insert the vowel marks as an integral part of the letter, and to distinguish between *Shin* and *Sin* (figure 2.3). He also claims that the Ashkenazic[12] high contrast harms the type's quality and readability, and indeed Frank Rühl has a lower contrast than its predecessors.[13] According to him, the stability of his typeface derives from straight tops of the letters (figure 2.4). In mentioning the strength of the vertical strokes in Frank Rühl he criticises the 'bumps and jellyfish' shapes of the existing Hebrew faces.[14] It is interesting to notice that both Raphael Frank and Henri Friedlaender consider the strength of the typeface as a virtue but while Frank sees his typeface as such, Friedlaender critically mentions that Frank Rühl lacks it.[15]

Frank Rühl typeface was produced by the Leipzig foundry C.F. Rühl in 1908 in eight sizes, both with and without vowels and published in an 8-page brochure in 1910 showing the new Hebrew typeface (figure 2.5 p.14). C.F. Rühl foundry was purchased by Berthold in 1918 and the size range of Frank Rühl was extended to 72pt in lead and about 192pt in wood. In 1924 Frank Rühl was presented in Berthold's Hebrew catalogue (figure 2.6 p.15). Although samples of Hebrew types appeared in catalogues since the 17th century, according to Stephen Lubell, the Berthold specimen was the first Hebrew catalogue of its kind.[16]

The purpose of the catalogue, according to the introduction by Berthold's head of the Oriental department Joseph Tscherkassky, was to facilitate the connection of the Hebrew typographer with the 'western art of printing'.[17] He tried to give the specimen an oriental character which fitted his opinion of a new contemporary Hebrew typography. The pages were designed with decorative borders, vignettes and initial letters amongst examples for use and type specimens in several sizes including the typefaces Frank Rühl, Meruba, Margalit, Rashi and Mirjam.

Berthold's Hebrew catalogue and Rafael Frank's essay were given

11 Frank, 'Über hebräische Typen und Schriftarten.'

12 One of the Hebrew styles, developed in Germany and north-eastern France. Written with a quill and influenced by Gothic forms. For examples see Ada Yardeni, 'The Book of Hebrew Script'.

13 Today, Frank Rühl is considered as a high contrast typeface, compared with the used typefaces in Israel.

14 Frank, 'Über hebräische Typen und Schriftarten.'

15 A public annoncement for the publication of two types of the 'Hadassah' letter. Jerusalem 1958.

16 Stephen Lubell, 'Joseph Tscherkassy-Orientalist and Typefounder,' 225, 233.

17 H. Berthold, Katalog hebräischer und Jüdischer Schriften, Berlin: H. Berthold Schriftgiessereien und Messinglinien–Fabriken ag, 1924

ORIGINAL=
ERZEUGNIS

FRANK=RÜHL=HEBRÄISCH

GESETZLICH
GESCHÜTZT

Grade=Verzeichnis ohne und mit Vokalen

Nr. 3711. Nonpareille (6 Punkte) 1 Satz ca. 6,5 kg.

לכן חכו־לי נאם־יי ליום קומי לעד · כי משפטי לאסף גוים לקבצי ממלכות
לשפך עליהם זעמי כל חרון אפי · כי באש קנאתי תאכל כל הארץ:

Nr. 3712. Petit (8 Punkte) 1 Satz ca. 12,5 kg.

לכן חכו־לי נאם־יי ליום קומי לעד · כי משפטי לאסף
גוים לקבצי ממלכות לשפך עליהם זעמי כל חרון אפי · כי
באש קנאתי תאכל כל הארץ:

Nr. 3713. Korpus (10 Punkte) 1 Satz ca. 12,5 kg.

לכן חכו־לי נאם־יי ליום קומי לעד · כי משפטי
לאסף גוים לקבצי ממלכות לשפך עליהם זעמי
כל חרון אפי · כי באש קנאתי תאכל כל הארץ:

Nr. 3714. Cicero (12 Punkte) 1 Satz ca. 12,5 kg.

לכן חכו־לי נאם־יי ליום קומי לעד ·
כי משפטי לאסף גוים לקבצי ממלכות

Nr. 3715. Mittel (14 Punkte) 1 Satz ca. 6 kg.

לכן חכו־לי נאם־יי ליום
קומי לעד · כי משפטי לאסף

Nr. 3716. Tertia (16 Punkte) 1 Satz ca. 8 kg.

לכן חכו־לי נאם־יי ליום
קומי לעד · כי משפטי

Nr. 3701. Nonpareille (6 Punkte) 1 Satz ca. 6,5 kg.

לָכֵן חַכּוּ־לִי נְאֻם־יְיָ לְיוֹם קוּמִי לָעַד · כִּי מִשְׁפָּטִי לֶאֱסֹף גּוֹיִם לְקָבְצִי מַמְלָכוֹת
לִשְׁפֹּךְ עֲלֵיהֶם זַעְמִי כֹּל חֲרוֹן אַפִּי · כִּי בְּאֵשׁ קִנְאָתִי תֵּאָכֵל כָּל הָאָרֶץ:

Nr. 3702. Petit (8 Punkte) 1 Satz ca. 12,5 kg.

לָכֵן חַכּוּ־לִי נְאֻם־יְיָ לְיוֹם קוּמִי לָעַד · כִּי מִשְׁפָּטִי לֶאֱסֹף
גּוֹיִם לְקָבְצִי מַמְלָכוֹת לִשְׁפֹּךְ עֲלֵיהֶם זַעְמִי כֹּל חֲרוֹן אַפִּי · כִּי
בְּאֵשׁ קִנְאָתִי תֵּאָכֵל כָּל הָאָרֶץ:

Nr. 3703. (Korpus 10 Punkte) 1 Satz ca. 12,5 kg.

לָכֵן חַכּוּ־לִי נְאֻם־יְיָ לְיוֹם קוּמִי לָעַד · כִּי מִשְׁפָּטִי
לֶאֱסֹף גּוֹיִם לְקָבְצִי מַמְלָכוֹת לִשְׁפֹּךְ עֲלֵיהֶם זַעְמִי
כֹּל חֲרוֹן אַפִּי · כִּי בְּאֵשׁ קִנְאָתִי תֵּאָכֵל כָּל הָאָרֶץ:

Nr. 3704. Cicero (12 Punkte) 1 Satz ca. 12,5 kg.

לָכֵן חַכּוּ־לִי נְאֻם־יְיָ לְיוֹם קוּמִי לָעַד ·
כִּי מִשְׁפָּטִי לֶאֱסֹף גּוֹיִם לְקָבְצִי מַמְלָכוֹת

Nr. 3705. Mittel (14 Punkte) 1 Satz ca. 6 kg.

לָכֵן חַכּוּ־לִי נְאֻם־יְיָ לְיוֹם
קוּמִי לָעַד · כִּי מִשְׁפָּטִי לֶאֱסֹף

Nr. 3706. Tertia (16 Punkte) 1 Satz ca. 8 kg.

לָכֵן חַכּוּ־לִי נְאֻם־יְיָ לְיוֹם
קוּמִי לָעַד · כִּי מִשְׁפָּטִי

Nr. 3718. Doppelcicero (24 Punkte) 1 Satz ca. 10 kg.

לכן חכו־לי נאם־יי ליום קומי לעד·

Nr. 3719. Doppelmittel (28 Punkte) 1 Satz ca. 12 kg.

לכן חכו־לי נאם־יי ליום קומי

SCHRIFTGIESSEREI C. F. RÜHL · LEIPZIG

Figure 2.5 Frank Rühl original specimen. *'Frank Rühl Hebräisch'* (C.F. Rühl, 1910)

Figure 2.6 Front Yiddish page of Berthold's Hebrew catalogue. (Berthold, 1924)

Figure 2.7 Published versions of Frank Rühl in different setting systems. Names are not mentioned. The first lines shown are the regular version and the next five are their bold versions. Only line 1 matches in the design with א1 (Aleph), the rest (2 and ב2 and so on) were set together. (Narkkis, 1992)

to all the members of the Soncino Society[18], which gave the catalogue mixed reviews. The unknown reviewer claimed that despite its novelty, the oriental spirit deriving from it does not match with the modern typography. Regarding the typefaces, he wrote: 'Yet once again one must add with regret that the creation of a completely satisfactory, well-conceived and classical Hebrew type has not yet been achieved'.[19]

Throughout the 1920's and after, Frank Rühl was distributed and copied in several European foundries and adapted for hot-metal typesetting machines in the United States and England. In 1922 Berthold, B.D. Stempel and others stated Frank Rühl in the list of typefaces they offer. Unlike those foundries which kept the original cut of the typeface, all the other letterpress versions distorted the letterforms, thickened and simplified the strokes.[20]

It appears that no true bold or italic version of Frank Rühl was ever cut by Berthold.[21] Until the sixties, Frank Rühl had only a regular weight and emphasis in a text was received by using either Miriam typeface or large letter spacing. Zvi Narkiss claims that because Miriam's letterforms are so alien to Frank Rühl, they stick out and prevent a flowing reading. Several heavy versions were linked with Frank Rühl's regular as its bold style, each setting system[22] with a different combination. Once again, he rejects that solution for emphasis under the same reason. Figure 2.7 presents published versions of Frank Rühl in different setting systems. The first lines shown are the regular version and the next five are their bold versions. Only line 1 matches in the design with 1א (Aleph), the rest (2 and 2א and so on) were set together but the bold weight's design differs from the regular within the same style and from the other Frank Rühl bold versions. Because of the horizontal stress in Hebrew, the letter height sets a limit to the bold version. However, In 'sans-serif' faces it is easier to create several weights due to the lower contrast.[23]

Narkiss states that Bomberg typeface was considered the best

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18 Society for Jewish bibliophiles in Germany, founded in 1924. Lubell, 'Joseph Tscherkassy,' 229

19 Original quote in German, translated by Stephen Lubell. Ibid.

20 Ittai Tamari, Hebräische Schriftgestaltung in Deutschland von der Jahrhundertwende bis zum Ausbruch des Zweiten Weltkrieges unter besonderer Berücksichtigung der 'Frank-Rühl'- Lettern, Ph.D. thesis. Mainz: Johannes Gutenberg Universitat, 1993, p.526-7

21 Lubell, 'Joseph Tscherkassy,' 223

22 by mentioning setting systems he probably refers to the different filmsetting machines of different companies.

23 Zvi Narkkis 'the fundamentals of typography and Hebrew typography,' in The book of printing, Tel-Aviv: National Printing Union, 1992

Figure 2.8 Bomberg typeface and Frank Rühl. It would probably be easier to read Frank Rühl today. (Narkkis, 1992)

Hebrew face for many years, but if set today besides Frank Rühl the latter would probably be chosen as more convenient to read (figure 2.8). In the same way, some typefaces may be better for reading than Frank Rühl, and we just need to get used to them in the same way that people got used to Frank Rühl. He urges the reader to make the effort because even though one prefers to read the typeface he is most used to, we are capable to easily accept new changes.[24] As will be discussed later in the essay, it appears that people's minds were set about the dominancy of Frank Rühl and even though some suggestions to change it were raised, they were neglected at some point or another. In 1987, the Israeli daily newspaper Maariv carried out a design transformation in which they changed the solely used Frank Rühl to a version of Narkiss typeface[25]. The readers completely rejected the new typeface, and after two and a half years Frank Rühl was back in use, neglecting the brave trial that didn't succeed.[26]

24 Ibid.

25 The typeface was called Kislev.

26 Hanoch Marmari, 'The Elastic, the Hammer and the Little Mermaid,' The Seventh Eye, 2007, http://www.the7eye.org.il/20107.

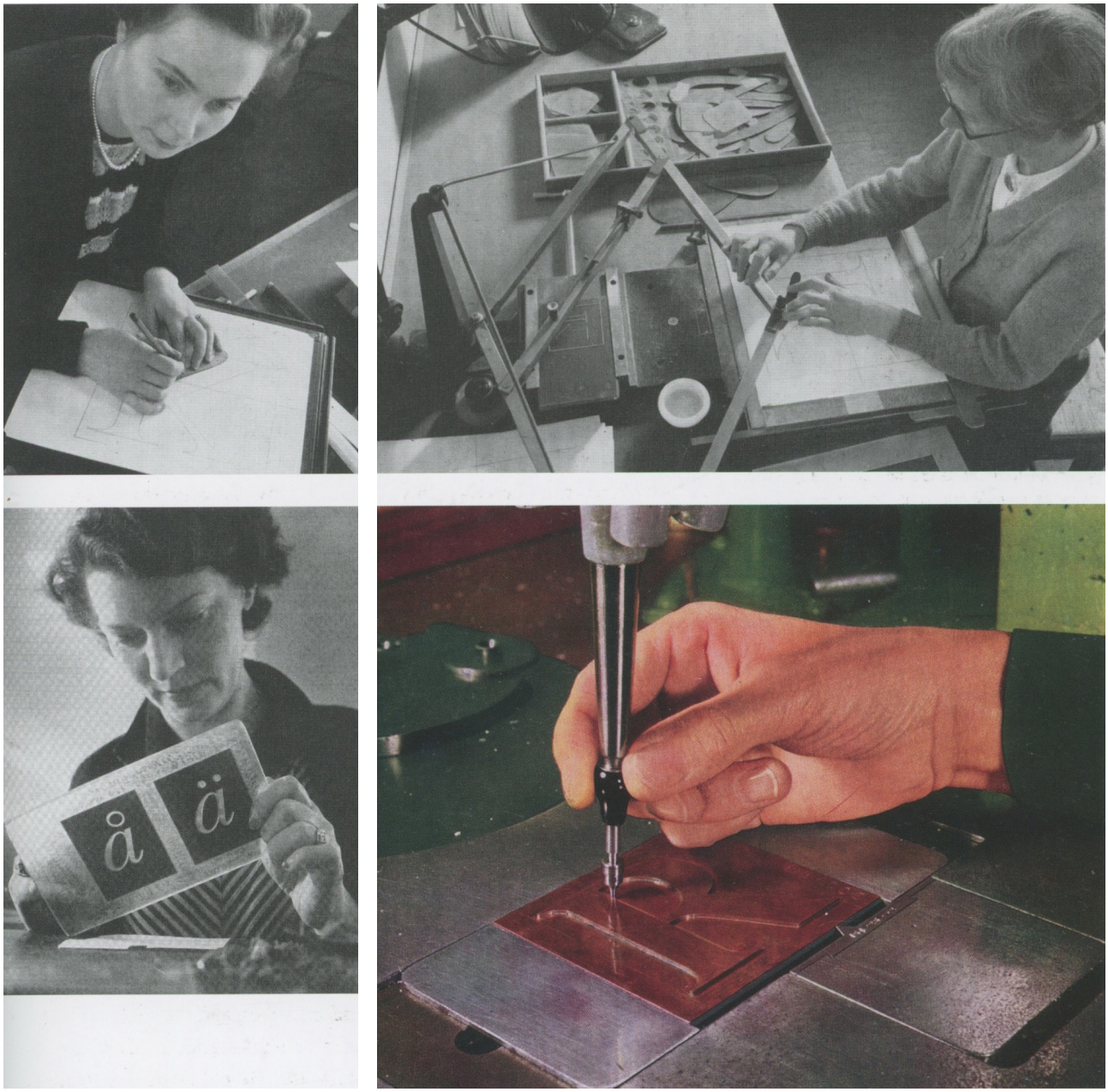

Figure 3.1 From top left clockwise: the making of 10-inch drawings; the pantograph tracing the drawings for the making of patterns; pattern is traced with the pattern-making pantograph in order to make the punches; checking accuracy of the wax pattern to be electroplated with copper. (Baines & Haslam, 2005)

3. Monotype

3.1 Process

The Monotype machine[27] was developed by Tolbert Lanston and J. S. Bancroft in 1890 and commercialised by the Lanston Monotype Machine Company in America and the Lanston Monotype Corporation in England. It was able to offer casting of individual letters and allow kerning, unlike the Linotype machines. An essential innovation was the composing and justifying the line of text before casting it.[28]

According to Stanley Morison, the first typefaces made for mechanical composition were 'copied or stolen from the type founders'[29]. This applies also for the early Hebrew typefaces of Monotype. Making large drawings from existing types was pretty much straightforward; Beatrice Warde and Legros & Grant described that the original type that was to be copied was enlarged, then by a skilful manipulation was corrected from the inkspread effect of the printing and the wearing down of the type. The original typeface were transferred by the T.D.O (TYPE DRAWING OFFICE) to 10 inch drawing which determined the appearance of the final type; the drawings were explicit translations of the original used as a model and not as final images.[30]

The copper patterns were cut by a pantograph[31], which was following the shapes of the large drawings by using the same curves that had been used for drawing them. The pattern-cutting pantograph cut into a layer of wax which was then electroplated with copper; the copper shell was filled with type-metal[32] (figure 3.1). The pattern, about one-quarter the size of the drawing, was used to make the steel punches (can be seen in figure 5.12 p.84), followed by the matrices which will help cast the final type. The punches were

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27 Due to the limited scope of this dissertation, the Monotype machines will not be described in detail. Please see other sources for further reading.

28 Richard Southall, Printer's Type in the Twentieth Century, London: The British library and Oak Knoll Press, 2005, p.35, 44

29 Stanley Morison, 'A tally of types,' Cambridge: privately printed, 1953, p.19

30 Southall, 'Printer's Type in the Twentieth Century.'
For more information about the involvement and the reaction of designers the the hot-metal versions see p.29-34

31 the Pantograph is a device that reproduces the movements of a tracing point at a different scale by means of pivoted levers.

32 Southall, 'Printer's Type in the Twentieth Century,' p.23

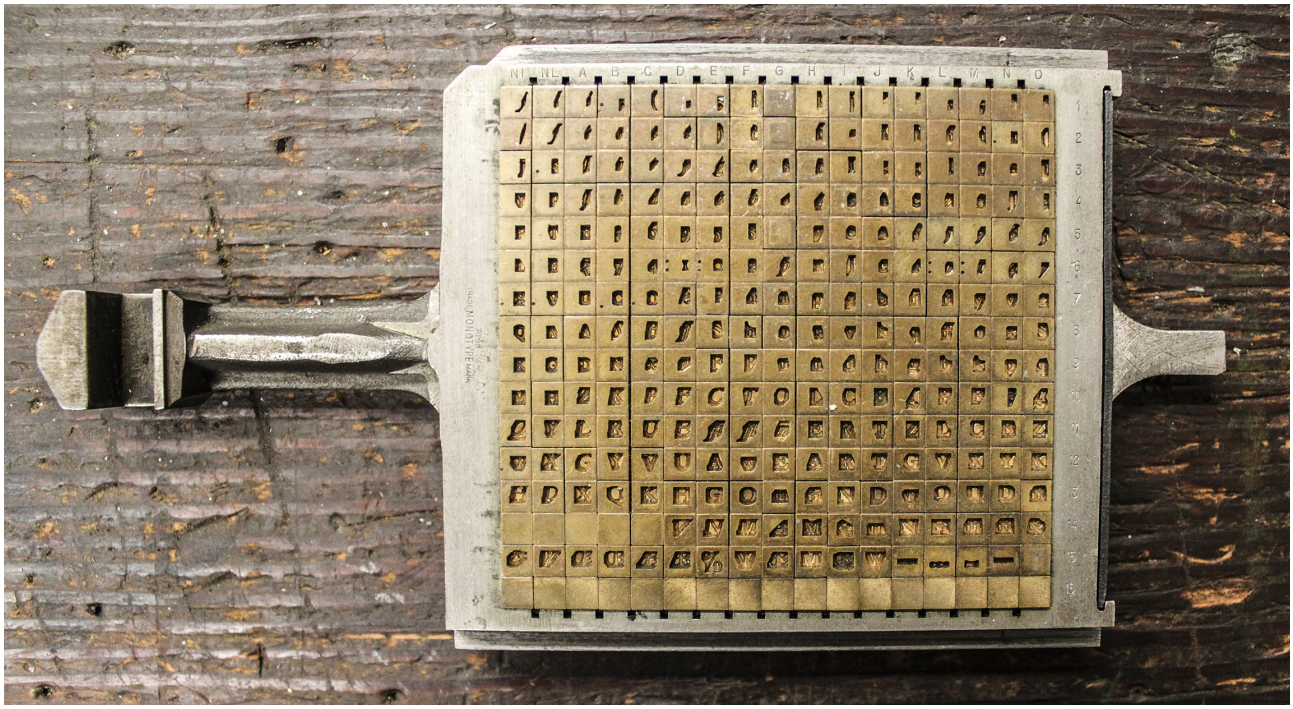

Figure 3.2 Matrix case

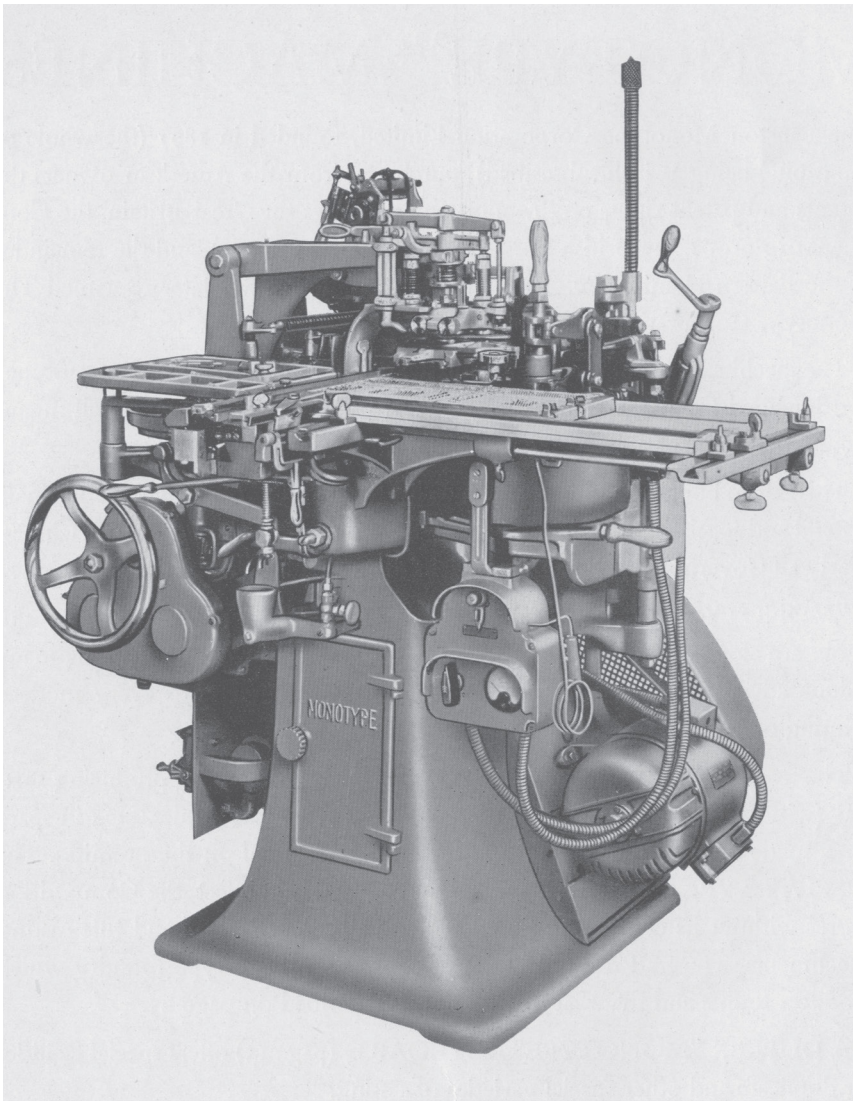

Figure 3.4 Monotype composition caster
From *'Monotype' Machines*
(Monotype, n.d.) [20%]

cut with the punch-cutting machine, similar to the pantograph. The tracing around the profile of the character on the pattern was done while imitating the same shape on the blank punch which was hardened after being approved. Even though the punch-cutting machine worked on a pantographic principle and could produce several punches from one pattern, the traditional practice of optical compensation, changing width and modifying of the x-height was continued in order to maintain legibility in small sizes.[33] The punches were stamped into the matrices and they were then ready to be arranged in cases (figure 3.2) and were sold to costumers.

The width of the widest character was divided into 18 units, and the rest of the characters were derived from it, with the narrowest being 5 units. The width of an em at a certain size was the 'set width'. In the matrix case (referred also as die-case), characters located in each row shared the same width.[34] The arrangement of the matrix case is called M.C.A (can be seen in figure 4.11 p.50), and much effort was put into finding the right order according to unit widths and the frequency of characters. Some characters did not have room in the matrix case and were left outside.

The process of transforming the drawing to the finished type was long, and it was hard to anticipate how the design would come out printed in a small size. Any corrections that needed to be made had to go all the way back from the proof to the punches, patterns and drawings.

The keyboard (figure 3.3 p.24) and the caster (figure 3.4) were two separate units. Each letter was typed into the keyboard which punched two holes in a paper ribbon, marking the position for letter. After the keyboarding, the ribbon was taken to the caster and the matrix case was moving according to its coordinates, allowing the right letter to be cast. The letters came out of the caster as individual units, already in the typed order.[35]

3.2 Hebrew in Monotype

> *'When the flexible 'Monotype' shall have followed its present solution of ancient Hebrew machine composition by other adaptations covering the many related or similar languages and*

33 Walter Tracy, Letters of credit: a view of type design, London: Gordon Fraser, 1986, p.36-38

34 In 1963 the introduction of the unit shift system allowed placing different units in the same row of the matrix case. For further reading see Monotype booklet 'The unit shift system', MA

35 Phil Bains and Andrew Haslam, Type & Typography, 2nd ed. London: Laurnce King, 2005, p.94

Figure 3.3 Monotype keyboard. From, *A 'Monotype' Composing Machine Described.* (Monotype, n.d.) [25%]

> *dialects, Oriental students and peoples will owe to this wonderful machine, more than to any other single agency, the rapid growth, the typographic excellence, and an ever-increasing satisfaction in the reading of the printed mother tongues…'*[36]

The transition from hand composition to hot-metal typesetting required some changes in the design of typefaces;[37] above all, the standardisation of the letterforms to fit specific unit widths and the matrix case. The letterforms had to be redrawn, and were more precise and measured than the hand drawn, together with the advantages and shortcomings of it.[38]

In the first few decades of the twentieth century, Hebrew as a spoken language was still a new idea,[39] and followed by it was the revival and acceleration of Hebrew publications,[40] which were demanded in America due to the increase of the Jewish population.[41] Apart from the basic letters, the Hebrew consists of optional vowel marks – 'points'[42] to assist reading. The pointed Hebrew is not crucial to the Hebrew speaker, as it is possible to understand by context and acquaintance with the words. However, for the Hebrew reader in the diaspora the points are necessary.[43]

Before Mechanical composition, setting the tiny vowel points in Hebrew was a tedious and slow job. The alternative was cutting the letters including the vowel points, which was expensive to produce. For those reasons, it was preferred to produce unpointed Hebrew books.[44]

Hebrew could be cast on Linotype machines but casting it with points was impossible, in addition to the problem of single errors requiring the casting of a whole new line. In 1920, two Monotype

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36 Cyrus Adler, 'A New Hebrew Press,' in Journal of the American Oriental Society 41, 1921, p. 225–229

37 the definition of a typeface according to Southall is: 'a set of characters shapers with common appearance characteristics derived from a single original, that exist in a range of sizes and are identical for one or more subranges of sizes within the range.'
Southall, Printer's Type in the Twentieth Century, 49

38 Tamari, 'Hebräische Schriftgestaltung in Deutschland,' p.465-7

39 Until the end of the 19th century and the beginning of the 20th century the Hebrew language was used only for religious purposes. Only after, it became a spoken secular language.
For further reading see: Jack Fellman, The revival of a classical tongue: Eliezer Ben Yehuda and the modern Hebrew language. The Hague: Mouton, 1973

40 'A revolution in the composition of Hebrew,' in The Monotype Recorder, no. 26, 1927, p. 12-17

41 Adler, Cyrus. 'A New Hebrew Press,' in Monotype 9, no. 1, 1921, p. 1-3.

42 A name for the Hebrew vowel points. Will be used for the rest of this essay.

43 'A revolution in the composition of Hebrew,' p. 12-17

44 Ibid.

Figure 3.5 Wide versions of letters (green) and *Alef-Lamed* ligature (blue) were omitted during the transition to hot-metal. From Berthold's Hebrew catalogue. (Berthold, 1924)

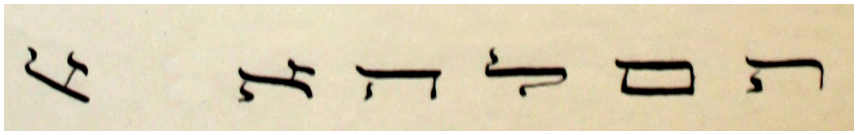

Figure 3.6 Wide versions of letters omitted drawn in a letter regarding Hebrew. On the left: a *Alef-Lamed* ligature. From correspondence, *'Composing and casting of vocalised Hebrew'* (Hebrew research folder, MA, Salfords) [110%]

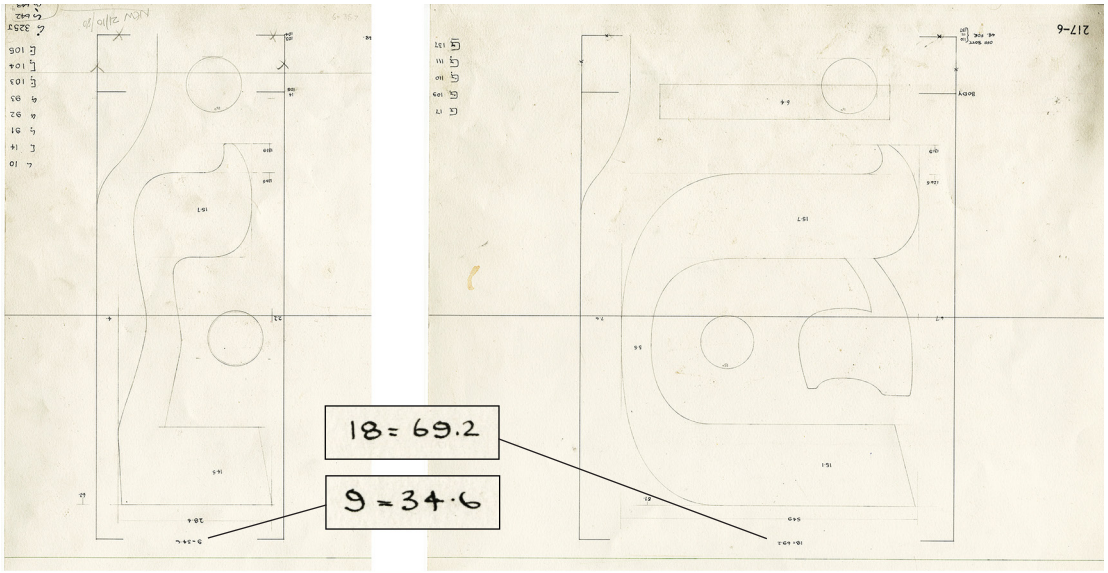

Figure 3.8 10 inch drawings of series 217, showing a wide letter – *Peh* adjusted to 18 units and a narrow letter – *Nun* adjusted to 9 units. The numbers show the unit width of each. (MA, Salfords) [25%]

machines were built for the Jewish Publication Society by raised funding, for the initial purpose of printing the Jewish National Classics Series.[45]

As for a typeface ,the classic Hebrew (280M) issued by Lanston Monotype intended to maintain a tradition of the Hebrew printing as it was known in America.[46] Prints were taken from the typeface designed by Manasseh Ben Israel, a Dutch Jewish Rabbi and printer, and parts were altered for a better letter differentiation.[47]

When searching for the best arrangement for the die-case, the only Hebrew ligature and widened versions of some letters were omitted due to infrequent use (figures 3.5, 3.6). With 97 Hebrew characters and 17 vowel points it was possible to cast 1649 letter-point combinations.[48] The approved Hebrew Matrix cast consisted of 225 characters, including the basic letters, the letters with vowel points above and inside (*Holam*, *Dagesh*) and vowel points. In addition, numerals, punctuation and cantillation marks[49] were also included[50] (figure 3.7 p.28). For the layout of the matrix case, the Head of the T.D.O Fritz Steltzer suggested to create four groups of different unit widths, each having its own vowel points. He also proposed that in order to avoid difficulty while setting the text, the vowel points should each be placed in keyboard near the letters from the same width.[51] It is not entirely clear when the letters were finally arranged, divided to 18 units for the wide characters (such as Aleph-א) and 9 units for the narrow ones (*Vav*-ו, *Nun*-נ)(figure 3.8); each vowel point was cut in both unit sizes, to be able to match both character widths.[52]

In a report sent from Berlin, it was advised to cast the pointed Hebrew in one of two different ways: the first was by using the ordinary mould and casting the letters on half of the body size and the points on the other half; the ascenders fill a full body (figure

45 Adler, 'A new Hebrew press,' 1-3
In March 1927, Dr. Cyrus Adler writes to Monotype, complaining that the statement published in February 'It will now be possible to print Hebrew with the vowel marks on the Monotype machine' was not any news because it was already possible in 1920. Adler to Monotype, 'Dr. Adler Corrects London Report on Hebrew Monotype Machine,' 8 March 1927, http://www.jta.org/1927/03/08/archive/dr-adler-corrects-london-report-on-hebrew-monotype-machine

46 Hebrew typefaces in America were descendent from the Netherlands and Venice.

47 Adler, 'A new Hebrew press,' 1-3

48 unkn, 'Composing and casting of vocalised Hebrew', 1922, Hebrew research folder, MA. Report from Berlin

49 also called *T'amim*.

50 Adler, 'A new Hebrew press,' 1-3

51 Steltzer to unkn, 'American report & Berlin report on Hebrew', 16 May 1922, Hebrew research folder, MA

52 Adler, 'A new Hebrew press,' 1-3

Figure 3.7 Text set in Classic Hebrew no. 280M at 10pt in three variations: basic characters, with vowel marks and with vowel and cantillation marks. Detail: full vocalised Hebrew. From '*A New Hebrew Press*' in Monotype journal. (Adler, 1921) [detail: 150%]

נַחֲמוּ נַחֲמוּ עַמִּי יֹאמַר אֱלֹהֵיכֶם: דַּבְּרוּ עַל־
לֵב יְרוּשָׁלַ͏ִם וְקִרְאוּ אֵלֶיהָ כִּי מָלְאָה צְבָאָהּ כִּי
נִרְצָה עֲוֹנָהּ כִּי לָקְחָה מִיַּד יְהוָה כִּפְלַיִם בְּכָל־
חַטֹּאתֶיהָ:

Classic 10 Point No. 280M—with Musical Accents and Vowel Points

נַחֲמוּ נַחֲמוּ עַמִּי יֹאמַר אֱלֹהֵיכֶם: דַּבְּרוּ עַל־
לֵב יְרוּשָׁלַ͏ִם וְקִרְאוּ אֵלֶיהָ כִּי מָלְאָה צְבָאָהּ כִּי
נִרְצָה עֲוֹנָהּ כִּי לָקְחָה מִיַּד יְהוָה כִּפְלַיִם בְּכָל־
חַטֹּאתֶיהָ:

Showing use of Vowel Points without Musical Accents

נַחֲמוּ נַחֲמוּ עַמִּי יֹאמַר אֱלֹהֵיכֶם: דַּבְּרוּ עַל־
לֵב יְרוּשָׁלַ͏ִם וְקִרְאוּ אֵלֶיהָ כִּי מָלְאָה צְבָאָהּ כִּי
נִרְצָה עֲוֹנָהּ כִּי לָקְחָה מִיַּד יְהוָה כִּפְלַיִם בְּכָל־
חַטֹּאתֶיהָ:

Without Musical Accents or Vowel Points

נחמו נחמו עמי יאמר אלהיכם: דברו על
לב ירושלים וקראו אליה כי מלאה צבאה כי
נרצה עונה כי לקחה מיד יהוה כפלים בכל
חטאתיה:

Classic 8 Point No. 280M—with Musical Accents and Vowel Points

נַחֲמוּ נַחֲמוּ עַמִּי יֹאמַר אֱלֹהֵיכֶם: דַּבְּרוּ עַל־לֵב יְרוּשָׁלַ͏ִם
וְקִרְאוּ אֵלֶיהָ כִּי מָלְאָה צְבָאָהּ כִּי נִרְצָה עֲוֹנָהּ כִּי לָקְחָה מִיַּד
יְהוָה כִּפְלַיִם בְּכָל־חַטֹּאתֶיהָ:

Classic 7 Point No. 280M—without Musical Accents or Vowel Points

נחמו נחמו עמי יאמר אלהיכם: דברו על לב ירושלים וקראו
אליה כי מלאה צבאה כי נרצה עונה כי לקחה מיד יהוה כפלים
בכל חטאתיה

Classic 6 Point No. 280M—with Musical Accents and Vowel Points

נַחֲמוּ נַחֲמוּ עַמִּי יֹאמַר אֱלֹהֵיכֶם: דַּבְּרוּ עַל־לֵב יְרוּשָׁלַ͏ִם וְקִרְאוּ אֵלֶיהָ כִּי
מָלְאָה צְבָאָהּ כִּי נִרְצָה עֲוֹנָהּ כִּי לָקְחָה מִיַּד יְהוָה כִּפְלַיִם בְּכָל־חַטֹּאתֶיהָ:

Classic 5 Point No. 280M—without Musical Accents or Vowel Points

נחמו נחמו עמי יאמר אלהיכם: דברו על לב ירושלים וקראו אליה כי מלאה
צבאה כי נרצה עונה כי לקחה מיד יהוה כפלים בכל חטאתיה

Classic 4 Point No. 280M—without Musical Accents or Vowel Points

נחמו נחמו עמי יאמר אלהיכם: דברו על לב ירושלים וקראו אליה כי מלאה צבאה כי נרצה עונה כי לקחה
מיד יהוה כפלים בכל חטאתיה

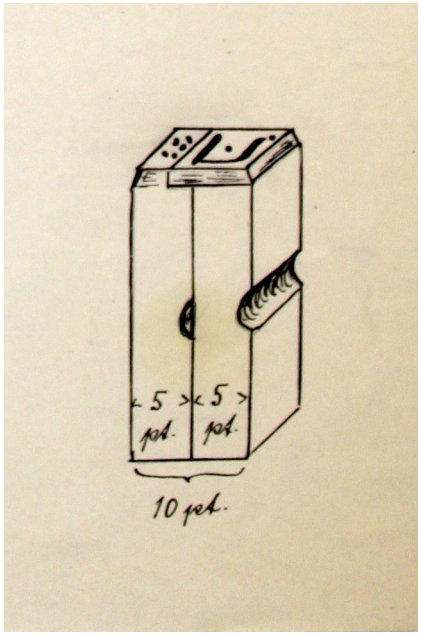

Figure 3.9 This figure presents one of the German solutions for casting vowel points. The idea was to cast the letters on half of the body size and vowel marks on the other. This solution was not chosen due to the fact that type smaller then 10pt could not be cast. From correspondence, *'Composing and casting of vocalised Hebrew'* (Hebrew research folder, MA, Salfords)

3.9). The alternative was to use a special mould.[53] The American solution for the multiple character-vowel combinations, was that the characters would be set in one line followed by another line below with the vowel points. The first line was set as if it was unpointed Hebrew and was justified in the regular method. In the following line, the operator composed either the vowels or spaces of widths equal to the characters in the previous lines.[54] Regarding these options, Steltzer replied that the German solution of the special mould would be too complicated. Moreover, he found the American solution of casting the letters and accents each on a full body better than the German idea of casting each on half body. He explained that if the solution from Berlin was taken, it will not be possible to cast any type smaller than 10pt, that is 5pt. For letters and 5pt for vowel points.[55]

The caster is where the difference lies in producing Hebrew type or Latin; the Hebrew matrices were placed upside down (for references see figures 4.10, 4.11 p.50) and the type and lines were assembled in the reverse order from Latin composition; the type coming out of the machine was pushed onto a galley or tray to the left, instead of to the right. With these changes, the right to left text is cast properly for Hebrew and ready for use.

The keyboard worked the same as the Latin, and actually it was only necessary to know how to change the galley-mechanism from standard to Hebrew and back again. In a letter written by H.T Martin in January 1922, it is even emphasised that 'After the Hebrew attachment is once in the casting machine, the operator need know nothing whatever about Hebrew….'[56]

In relation to Hebrew printing, The Jewish Chronicle stated that 'The benefits of the Monotype are almost unlimited'. The word 'revolution' is mentioned in many sources and indeed, in relation to Hebrew printing and new possibilities the Monotype was revolutionary. The printing of Hebrew books was immensely encouraged and the praising continued: 'With the Monotype it is possible to print every variety of Hebrew matter beautifully and at the smallest cost. In short, it is the only remedy for the persistent ills that handicap the fullest possible development of Hebrew literature. It alone can liven up the very depressed state of the Hebrew book market'.[57] According to Cyrus Adler, setting a certain galley of type in Monotype machine would take 45 minutes whereas in hand

53 unkn, 'Composing and casting of vocalised Hebrew', 1922, Hebrew research folder, MA. Report from Berlin

54 Adler, 'A new Hebrew press,' 1-3

55 Steltzer to unkn, 'American report & Berlin report on Hebrew', 16 May 1922, Hebrew research folder, MA

56 Martin to Duncan, 31 January 1922, Hebrew research folder, MA

57 'A revolution in the composition of Hebrew,' p. 12-17

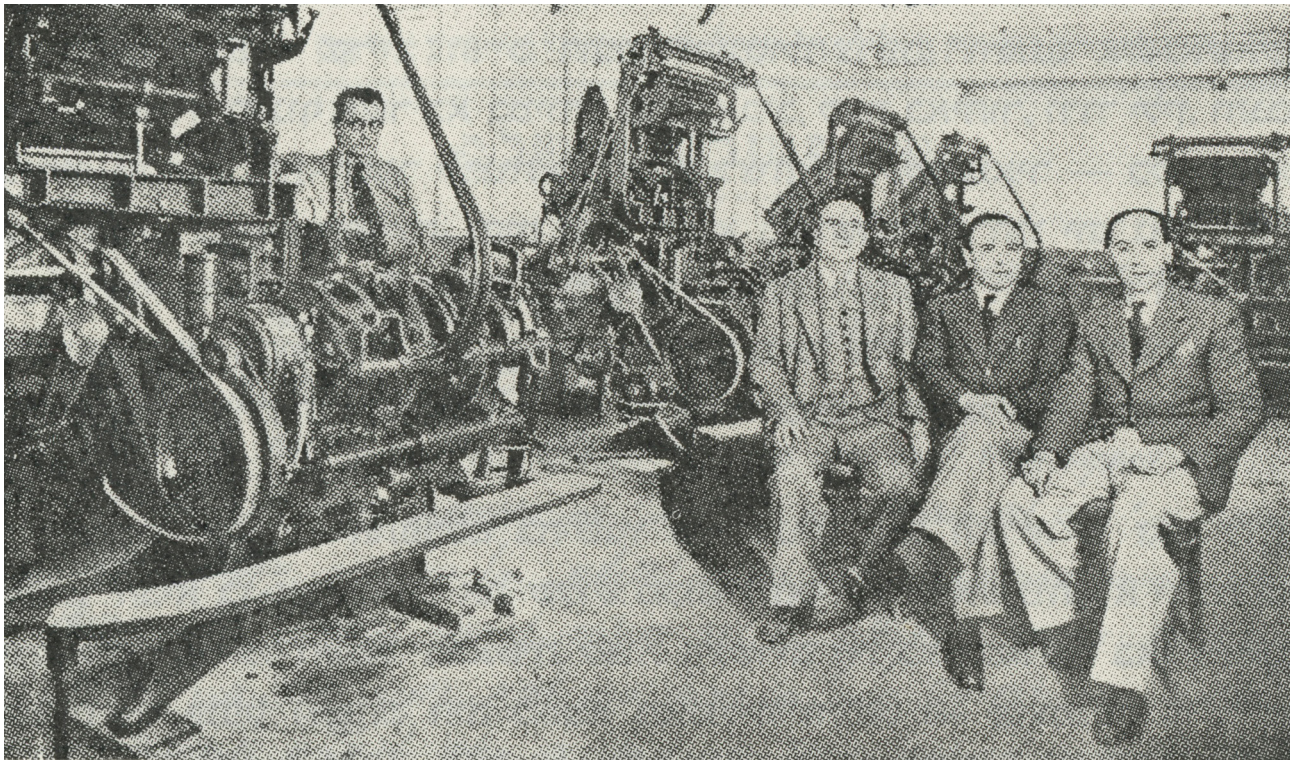

Figure 3.10 The first Linotype machines in Israel, 'Hasolel' printing house.
From *The Art of Printing, Four Centuries of Printing in Eretz Israel* (Olitzky, 1973) [150%]

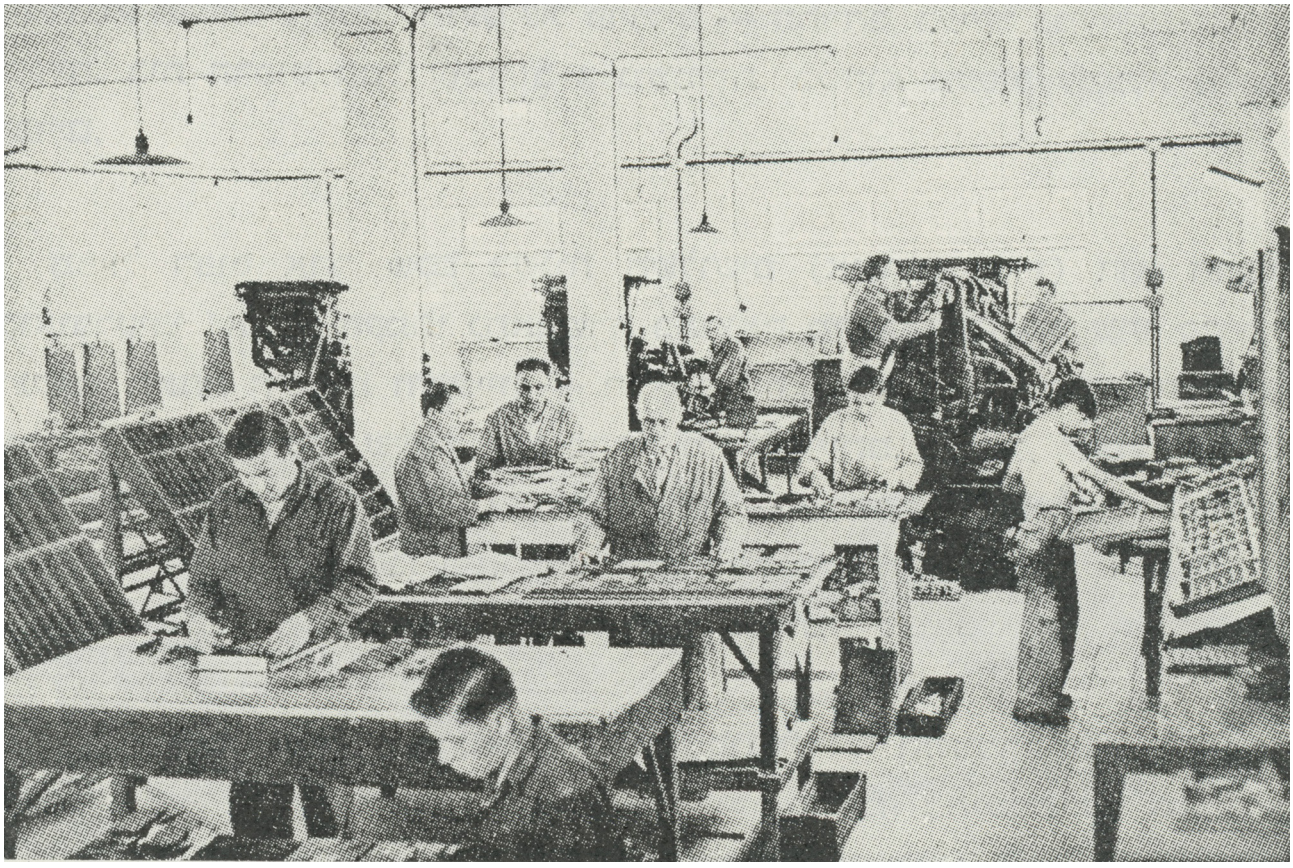

Figure 3.11 Ahva printing house in Jerusalem, hand composition.
From *The Art of Printing, Four Centuries of Printing in Eretz Israel* (Olitzky, 1973) [150%]

composition it would take 145 minutes.[58]

Trail proofs of a new Hebrew typeface[59] was sent probably to Steltzer in 1926. He was not satisfied with the design and suggested to abandon it in favour of the special typeface designed for Lerner & Teller.[60] This special typeface had the same general weight as the earlier, but according to Steltzer, with 'much more pleasing appearance and will probably always be preferred by our customers'.[61] William Burch agreed with Steltzer about abandoning the 12pt, but suggested to continue the design of the small sizes in the future.[62]

In the Israeli journal 'The World of Print', the Monotype machine was described in general and specifically for Hebrew setting. The automatic matrix case movement in the caster was described in a poetic way as 'was guided by mysterious forces'. The value of the possibly to cast vowel points with the letters was confirmed also from the Israeli users. In the Journal, the writer explained how the composition and casting of vowels in done and mentions the typefaces available for this action, including 'Peninim' typeface.[63]

3.3 Monotype and Israel

Around 1918 Itamar Ben Avi brought to 'Hasolel' printing house the first Linotype machine in Israel (figure 3.10). People from all around the country came to see 'the wonder', and despite technical difficulties the first line was cast in a festive ceremony. The Linotype machine had caused conflicts with the hand composition typesetters (figure 3.11) deteriorating to quarrels and fights.

'Davar' newspaper, founded in 1925 received couple of Monotype machines through donations and the first issue was printed in 1929. The fear of printers loosing their work place due to the hot-metal machine evoked endless discussions of how to treat the 'problem'. In the beginning of the 30's many printing houses already had the machines and the printers were relived to hear that abroad, the hot-metal typesetting did not cause the compositors to lose their jobs but quite the contrary, enlarged printing demands.

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58 Adler, 'A new Hebrew press,' 1-3

59 It is unclear which typeface is discussed.

60 Regarding Peninim typeface.

61 Steltzer (probably) to Burch, 14 April 1926, Hebrew research folder, MA

62 Burch to Steltzer (probably), 15 April 1926, Hebrew research folder, MA

63 Sol Hess, 'Monotype, the only option for fully vocalised Hebrew' in The World of Printing 7, The national union of printers: Organisation of printing plants in Israel: 'Amal' highschool for the printing trade, 1964, p. 51-56

Ha'aretz press were the first in Palestine[64] to order the Monotype installation, especially for the purpose of receiving their on typeface made on it. At that time, there were no trained Monotype operators in the country and Ha'aretz press had to start by working with unskilled men. According to Gershom Schocken, it was Ha'aretz press who opened a new market for Monotype in Palestine, and the second machine order of Davar Press was a direct influence from their actions.[65]

Monotype's communication with Israel was done in the same way as with all the countries outside the UK, through local agents. The agents reported to the Overseas department, which was in charge of the connection with Monotype's other departments. The agents in Israel were Palewco Ltd. from Tel Aviv. Michael Lewin was Palewco's agent who dealt with most of this communication, according to correspondence. For obvious reasons, the majority of the communication was through letters, rarely via phone calls and in some cases in face-to-face meetings, usually in England.

The local agents could gather information from customers and future customers, receive comments and requests for a different M.C.A[66] or another point size in a certain series. However, it was clear that it was Monotype who decided what and if they produce according to the requests. In a letter from Arthur Firmage to Michael Lewin in relation to Palewco's opinion about a new Hebrew typeface, Firmage stated that: 'If they should decide to cut the face that will be entirely up to them, whether you accept it or not is another matter….'[67] In some cases the native Hebrew speaker's opinion was needed; Monotype admitted that their knowledge about Hebrew is limited and therefore they were not able to assist with answers to all enquires about the writing system.[68] From the information found, answered to most questions about the language were received from the local agent.

As for logistics, only few complaints were found regarding the slow postal services between Israel. As for money transfer and payments from Israel for machines,[69] in 1958 Monotype stated that there is difficulty getting money from Israel.[70]

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64 The state of Israel was declared two years after the letter, in 1948. In all correspondence before that, it is referred to as Palestine.

65 Schocken to Quixley, 11 June 1946, Hebrew correspondence folder, MA

66 Matrix Case Arrangement.

67 Firmage to Lewin, 18 March 1963, Hebrew correspondence folder, MA

68 unkn, 'Veenman & Zonen, Wageningen Holland,' 15 April 1959, correspondence folder 217, MA

69 Schocken to Quixley, 11 June 1946, Hebrew correspondence folder, MA

70 unkn, 'Pointed Hebrew matrices required by The Government printer in Tel Aviv,' 14 January 1958, Hebrew correspondence folder, MA

In the beginning for 1958, a letter was sent inside Monotype, describing the problems they had with Hebrew. Firstly, Stanley Morison was since the war[71] against 'doing anything further in the way of Hebrew'. Even though Geoffrey Paulson was interested in making an effort regarding the Hebrew, the T.D.O was asked to look at a new enquiry to a limited degree in order to save waste of time. In addition, it was stated that Hebrew is a restricted market.[72] This was mentioned before as a reason why Monotype did not charge the standard price for a new 6pt size of Peninim typeface, series 217, requested from the Government printer in Israel.[73] Despite the small market, the largest single order made from Israel in value of approximately £20,000 was received in1959.[74] In 1958 Lewin was encouraging Monotype to supply requests as early as possible in order to maintain a prosperous relationship.[75] However, two years after, Monotype decides not to cut new Hebrew typefaces for some time, due to the time consuming making of drawings, punches and patterns.

In April 1973, Bezalel Academy in Jerusalem asked to receive information about the Hebrew typefaces of Monotype as they were collecting and classifying Hebrew typefaces for a future archive.[76] Despite the fact that Monotype did not have a prepared specimen presenting the Hebrew[77], they sent some kind of specimen (see Appendix E). A list of the typefaces is sent to Israel through Lewin so he could 'veto any information which he feels may cause any embarrassment to our commercial standing'.[78]

71 It is not clear why he wrote that.

72 unkn, 'Pointed Hebrew matrices required by The Government printer in Tel Aviv,' 14 January 1958, Hebrew correspondence folder, MA

73 Harris to Weller, 'Pointed Hebrew matrices required by The Government printer in Tel Aviv,' 10 January 1958, Hebrew correspondence folder, MA

74 Harris to Weller, 'Hebrew series 217-6pt, 220-5pt,' 10 September 1959, Hebrew correspondence folder, MA

75 Turner to Weller, 'Massadah Press Ltd. Ramat Gan, Israel,' 17 December 1958 correspondence folder 217, MA

76 Unknown, 14 April 1973, Koren research folder, MA

77 Monotype did not produce specific Hebrew specimens, either because they did not put much effort in marketing, or that Hebrew was a small market. There is a catalogue covering the non-Latins but it is unlikely that any customer was interested in such wide range of scripts (except for dictionaries or prayer books) and therefore this catalogue was too broad for them. The Hebrew typefaces showen in that catalogue were not a full list.

78 Weller to Vesey, 4 June 1973, 'Academy of Arts and Design, Jerusalem,' Koren research folder, MA

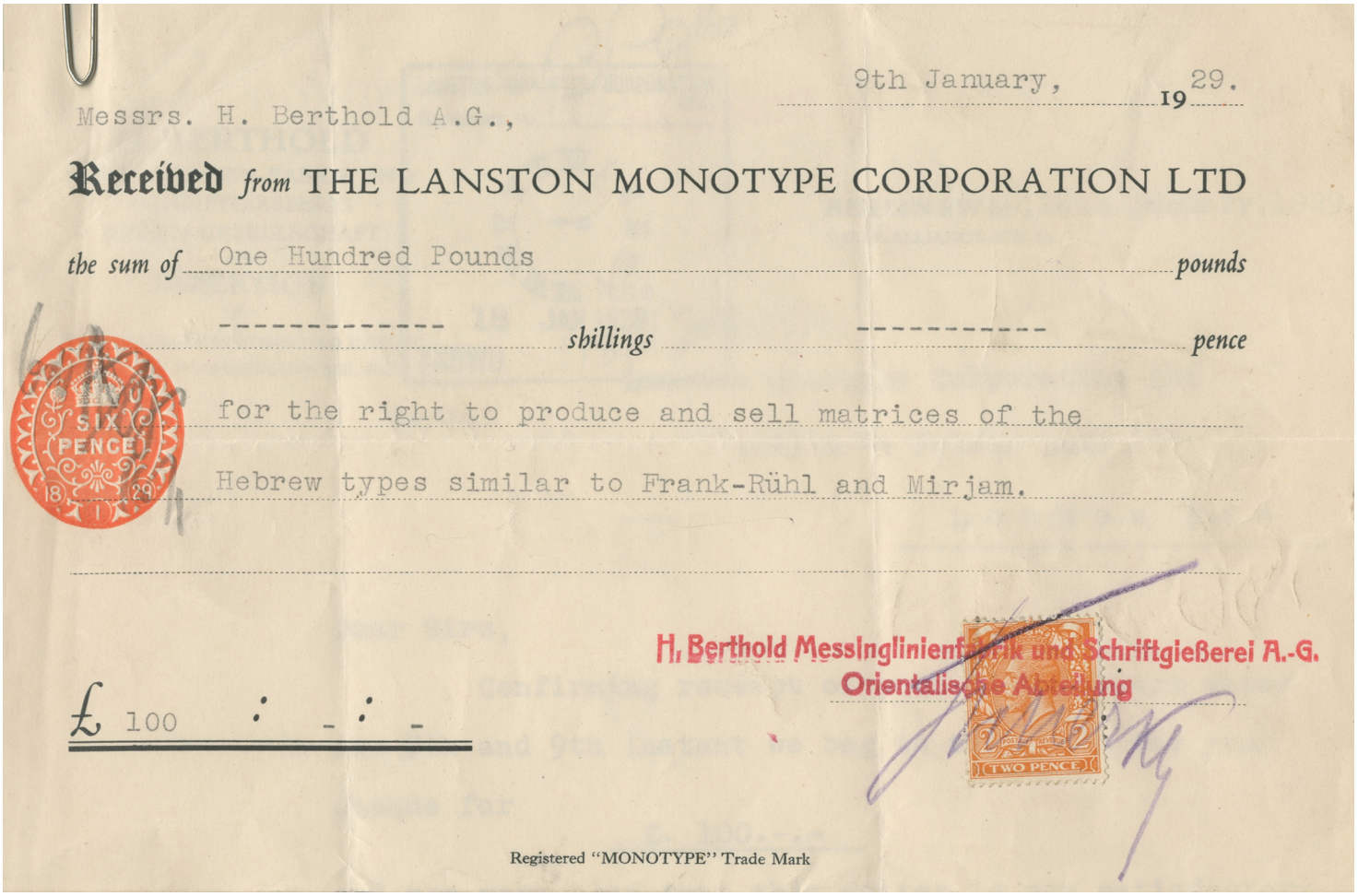

Figure 4.1 The receipt for Monotype's payment to Berthold for the production and selling of Frank Rühl and Mirjam typefaces. Note that the date is roughly two years after the first Peninim series was produced. (Hebrew types contract folder, MA, Salfords)

4. Peninim

Peninim series 217, 220 and 489 were Monotype's version of Frank Rühl typeface (see Appendix C for a full character set of series 217 and 220). As mentioned before, Frank Rühl was the most dominant typeface used for texts, both in newspapers and all sorts of publications. Hence, the Monotype users in Israel used Peninim vastly and it became Monotype's best selling Hebrew typeface.

4.1 Monotype and Berthold – Copyrights

The copyrights to the typefaces manufactured by the Corporation are not always easy to trace, and sometimes even impossible. The correspondence in such case can assist greatly, and the legal rights issues of Peninim typeface can be described.

Due to problems Monotype had with Berthold Foundry over infringement in 1958, Morison advised that they should not produce any further sizes of Peninim typeface until they are certain they are not infringing Berthold's rights. D. Weller, the secretary of the typographical committee contacted George Westover, a consulting engineer who conducted negotiations with Lerner & Teller in order to find information about the rights over Peninim/Frank Rühl typeface.[79] Westover was able to provide information about the old story; according to him: 'Lerner & Teller sold to Monotype Corporation drawings of what they claimed to be new Hebrew typeface'. Shortly after, they bought a Monotype plant and were soon busy with Hebrew setting. Either their materials or Monotype's specimen reached Berthold and 'the fat was in the fire' – the foundry claimed infringement.[80]

The copyrights contract was not found, but Berthold's request for payment and Monotype's receipt were found within the Designer's Contracts in Salfords. On January 1929 – three years after the first size of Peninim was produced – Monotype paid Berthold one hundred pounds 'for the right to produce and sell matrices of the Hebrew types similar to Frank Rühl and Mirjam'[81] (figure 4.1). Berthold considered the matter settled and offered to send Monotype

79 Weller to Westover, 17 January 1958, Hebrew correspondence folder, MA

80 Westover to Weller, 'Lerner & Teller,' 20 January 1958, Hebrew correspondence folder, MA

81 Monotype's version of Mirjam is Levenim, series 221

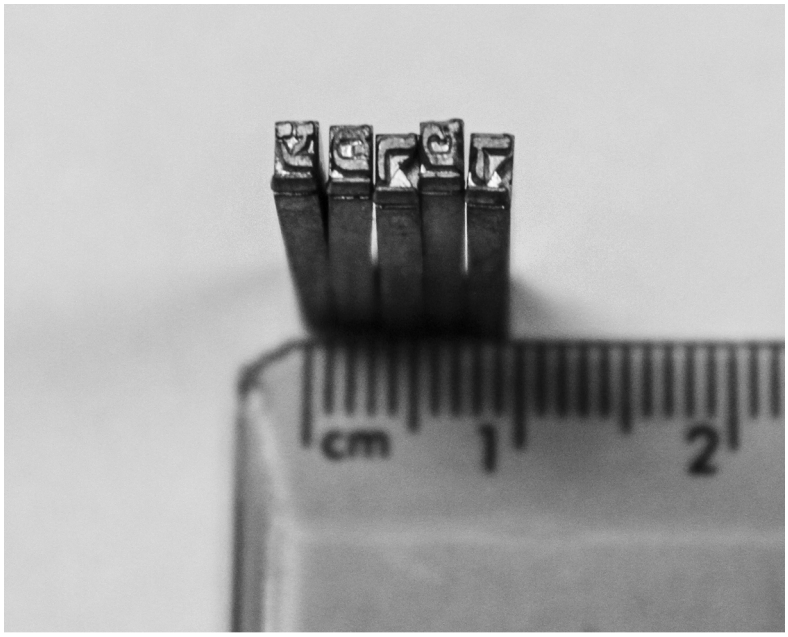

Figure 4.2 Type cast of 217-7pt. The image presents the type cast with underline bar following a request from Germany in 1962 (Production folder p-217, MA, Salfords) [300%]

their new Hebrew and 'Oriental' typeface specimens in order to avoid this error in the future.[82]

Back to 1958, John Dreyfus wrote that because series 217-8 was sold consistently since 1927, it was reasonable to assume that the agreement with Berthold 'sanctioned our continuing to manufacture their design'. He believed that producing the typeface is not infringing the rights.[83] Fletcher Rogers agreed with him, and added that 'any copyright has expired, and in the absence of an agreement (contract) we are free to do as we please'.[84]

At no point anyone claimed that Peninim was not copied from Frank Rühl and specifically from Berthold's specimen. Peninim was presented as being 'similar to Frank Rühl'[85] and on the test specimens from August 1926 the name of the typeface is indeed Frank Rühl[86]; the name 'Peninim' was only given to it one month later.[87] In the list of Hebrew typefaces sent to Bezalel Art Academy in Jerusalem (Appendix E), Berthold's Frank Rühl is not mentioned as the original version of Peninim. In contrast, the information added to Koren typeface that was produced for filmsetting in 1970, details the licence given by Deberny Peignot, Paris.[88]

4.2 Series 217- points and popularity

Series 217 consisted of 165 characters; 101 letters and the rest were other signs such as vowel marks. This series was Monotype's best selling series. The first size cut was 7pt between 1926-1927 (figure 4.2). It was made for Lerner & Teller from Berthold's 9pt Frank Rühl.[89] Soon after, 8pt followed, and was made proportionally from the 7pt. In the Production Logs it is noted that the founts[90] were meant to be as near Berthold's original as possible. The punches of 8pt were completed on June 1926 and were sent to Lerner & Teller

82 Berthold and Lanston Monotype Corporation, 9-16 January, Hebrew types contract folder, MA

83 Dreyfus to Weller, 'Hebrew series 217,' 22 January 1958, correspondence folder 217, MA

84 Rogers, 'Berthold and Hebrew,' 31 January 1958, Hebrew types contract folder, MA

85 Cover of Hebrew types contract folder, MA

86 'Trail no. 1, Hebrew (Frank Rühl) 220-36, 24 point,' 10-11 August 1926, correspondence folder 220, MA

87 4 September 1926, Production Logs 217, 220, MA

88 Veller to Vesey, 'Academy of Art and Design,' 4 June 1973, Koren research folder, MA

89 Production Logs 217, MA

90 A font (written also fount at the time) is a set of matrices from which types of a particular typefaces are cast in particular size.
Southall, Printer's Type in the Twentieth Century, 49-50

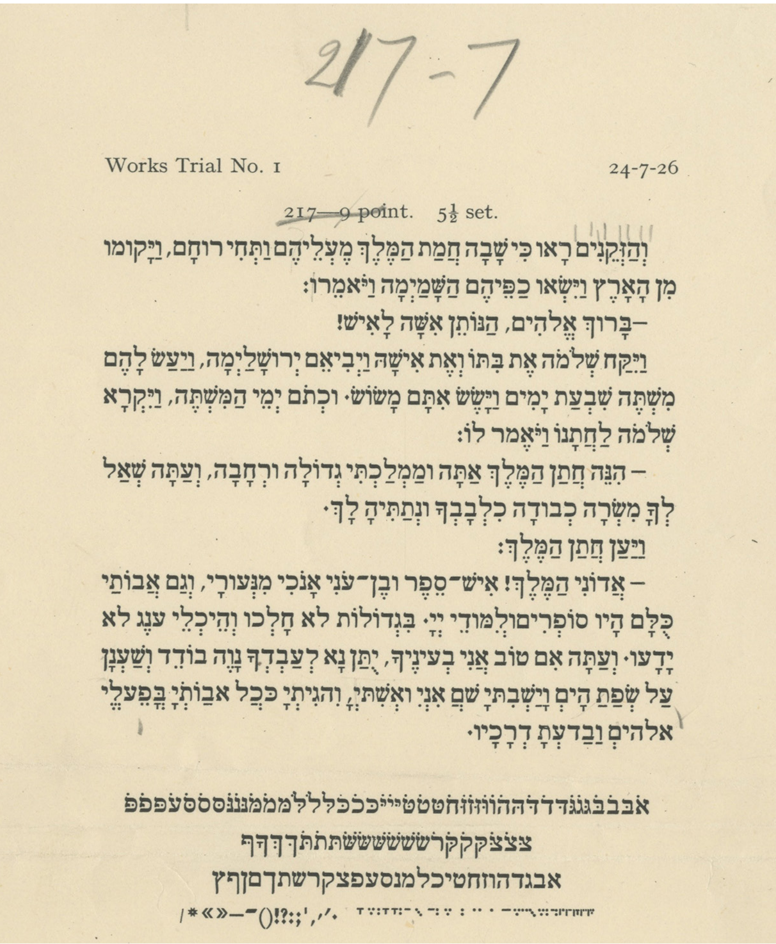

Figure 4.3 The first Work Trail for font 217-7pt printed in July 1926. Size 7pt was the first size of Peninim produced. (Correspondence folder 217, MA, Salfords)

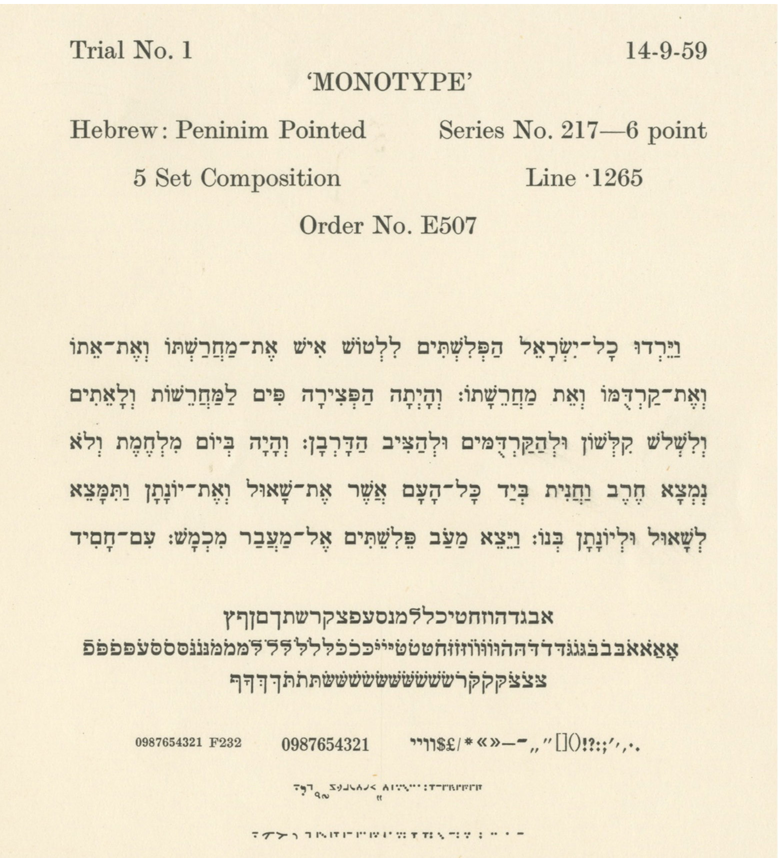

Figure 4.4 The first Works trail for font 217-6pt printed in September 1959. Size 6pt was produced after 217-7pt, being similar to it with wider proportions. (Correspondence folder 217, MA, Salfords)

for inspection.[91] Lerner & Teller were involved in the design, and few characters of Monotype's initial design were altered according to their modifications.[92]

Up until July, 7pt was the smallest size cut[93], but in 1959 6pt was added in order to extend series 217 and supply the customers with a small size Hebrew typeface. The drawings for 6pt were almost exact trace of 7pt, widened in order to fit 5 set which assisted the counters (figure 4.3, 4.4). In 1958, Massadah Press from Israel wanted to purchase the future matrices of 217-6pt. Furthermore, Palewco Limited, Monotype's agents in Israel wished to order three additional sets of matrices for other customers in Israel, which they agreed to finance themselves. Maintaing prospective business in Israel was important, and Monotype was urged to deliver the fount within 6 months.[94] Some suggestions and demands arrived from Monotype users in Israel through Palewco's agent Michael Lewin[95], the main one is to include series 220-5 in the matrix case with 217-6.[96] E. A. Firmage, the overseas manager in Monotype offered to use 220-6 instead of cutting a whole new size, but Ha'aretz Press insisted on their need for 5pt and Monotype agreed.[97]

Two requests for series 217 in 5pt were recorded. In responding to the first request in 1959, Cecil Fellows, Monotype's chief service manager suggested to use series 547-6[98] because it was already available. However, it was restricted to Ha'aretz press and it would anyhow need to be cut at 5pt size.[99] The second request arrived in 1960 from an Israeli professor. The T.D.O recommended to undertake experimental cutting of selected characters but reported that it will not be possible to cut from existing patterns[100] and because the size is very small the accents would almost reach the manufacture limit.[101] As far as the records show, 5pt Was not cut.

Two additional sized 7.5pt and 9pt were made partially: in both

91 1 June 1926 Production Logs 217, MA

92 Index cards 217, MA

93 22 July 1935 Production Logs 217, MA

94 Turner to Weller, 'Massadah Press Ltd. Ramat Gan, Israel,' 17 December 1958, correspondence folder 217, MA

95 From Palewco Limited.

96 Michael Lewin to Monotype, 23 December 1958, correspondence folder 217, MA

97 Firmage, Weller and Ha'aretz press, 6 January, 13 January, 13 February 1959, correspondence folder 217, MA

98 Shocken Hebrew.

99 Cecil Fellows to unkn. 28 April, 31 December 1958, correspondence folder 217, MA

100 It would have to be made on 4.5 set which is the narrowest set width possible for manufacture.

101 Firmage and Weller, 16-17 August 1960, correspondence folder 217, MA

Figure 4.5 Two trails of font 220-36pt from August 1926. The top was the first, with three descenders and one ascender not cast. The font was suppressed because of problems with overhanging characters. (Correspondence folder 217, MA, Salfords)

only the points (vowels) were cut and the rest was taken from the nearest size available.

4.3 Series 220- text and display sizes

Series 220 was cut initially for Lerner & Teller and was issued in text sizes as well as display sizes. In the first printed trial found for sizes 18pt, 24pt and 36pt, dated 10-11 August 1926, the typeface's name is still 'Frank Rühl', which in September of that year would be changed to 'Peninim'.[102] Sizes 6pt and 7pt of series 220 were produced around the beginning of 1927. The 6pt size was made as an exact copy Frank Rühl 6.5pt type, with few characters altered in correspondence with changes made in series 217-7. The 7pt size was made proportionally from the 6pt.

In May 1947 A. Zeltser from Brighton complained that he could not cast six overhanging characters[103] from series 220-36pt (figure 4.5). Monotype agreed that indeed, there is a problem and suggested to withdraw the matrices and to stop supplying it to customers.[104] In August, the typographic committee discussed the matter and decided to suppress 220-36 because those overhanging characters could not be cast on the Type and Rule caster.[105] Two days later, the 36pt font was officially suppressed.[106] In correspondence between Charles Poore, the works manager and Cecil Fellows two solutions were proposed but in both, only the Super Caster[107] could be used and that was not suitable for A. Zeltser's specific case because he was using a display type attachment and not a super caster.[108] Regardless of this customer's case, the 36pt problem could be solved with a special equipment necessary for casting on the Super Caster. However, it was proposed to maintain the suppression because the solution given

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102 6 September 1926, Production Logs 220, MA

103 There were two parts to the casting of a character; the mould which gave the character its body and the die (individual matrices from the matrix case) which gave the type its actual shape. A character overhangs when a it is cast on a smaller body than the die, and parts of it are over hanging.

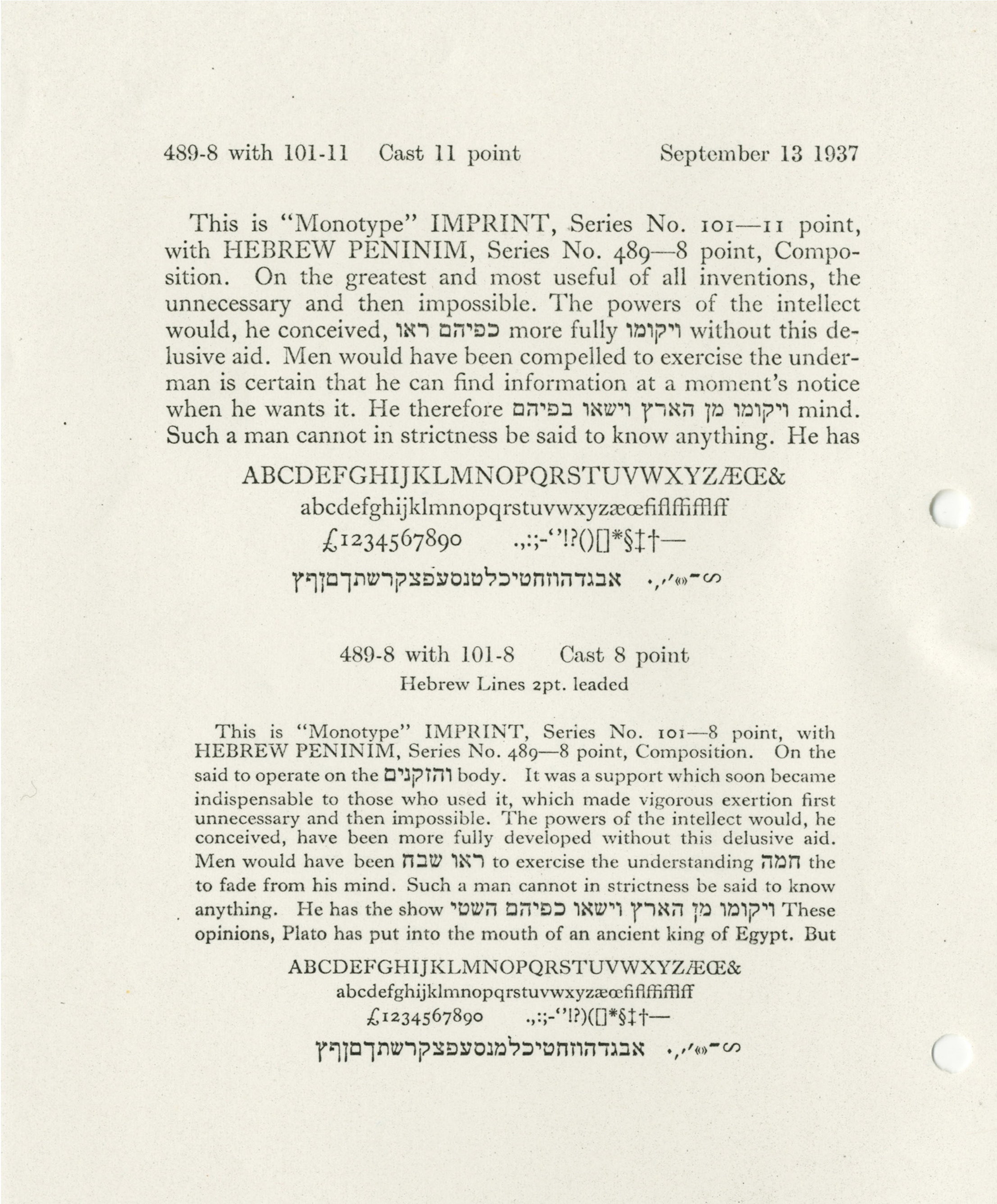
104 unkn, 'Series 220-36pt,' 30 May 1947, production folder p-220, MA

105 The Type & Rule caster was used in order to cast leaders, rule dashes and strip dashes in addition to casting separate letters to be used for corrections.

106 unkn, 'Series 220-36pt,' 26-28 August 1947, production folder P-220, MA

107 The super caster was used to casting type from 4.5pt up to 72pt. Also, it was used for casting ornaments, borders, leads and more. For further reading see 'Monotype machines' by the Monotype corporation limited, MA

108 The display type attachment was able to produce type up to 36pt, on the regular composition caster.
Poore to Paulson, 'Series 220-36pt,' 21 April 1949, correspondence folder 220
Unkn, Fellows and Weller, 3-6 May 1949, correspondence folder 220, MA



489-8 with 101-11   Cast 11 point   September 13 1937

This is "Monotype" IMPRINT, Series No. 101—11 point, with HEBREW PENINIM, Series No. 489—8 point, Composition. On the greatest and most useful of all inventions, the unnecessary and then impossible. The powers of the intellect would, he conceived, כפיהם ראו more fully ויקומו without this delusive aid. Men would have been compelled to exercise the underman is certain that he can find information at a moment's notice when he wants it. He therefore ויקומו מן הארץ וישאו בפיהם mind. Such a man cannot in strictness be said to know anything. He has

ABCDEFGHIJKLMNOPQRSTUVWXYZÆŒ&
abcdefghijklmnopqrstuvwxyzæœfiflffiffIff
£1234567890   .,:;-''!?()[]*§‡†—
אבגדהוזחטיכלטנסעפצקרשתךםןףץ   .,׳׳«»־ᔕ

489-8 with 101-8   Cast 8 point
Hebrew Lines 2pt. leaded

This is "Monotype" IMPRINT, Series No. 101—8 point, with HEBREW PENINIM, Series No. 489—8 point, Composition. On the said to operate on the והזקנים body. It was a support which soon became indispensable to those who used it, which made vigorous exertion first unnecessary and then impossible. The powers of the intellect would, he conceived, have been more fully developed without this delusive aid. Men would have been ראו שבח to exercise the understanding חמה the to fade from his mind. Such a man cannot in strictness be said to know anything. He has the show ויקומו מן הארץ וישאו כפיהם השטי These opinions, Plato has put into the mouth of an ancient king of Egypt. But

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abcdefghijklmnopqrstuvwxyzæœfiflffiffIff
£1234567890   .,:;-''!?)([]*§‡†—
אבגדהוזחטיכלמנסעפצקרשתךםןףץ   .,׳׳«»־ᔕ

Figure 4.6 Trail for font 489-8pt intended to be used with series 101 (Imprint) in either 8pt or 11pt.
(Hebrew correspondence folder, MA, Salfords)

would confine the casting to the Super Caster whereas Monotype's usual practice was to allow casting on the Composition Caster, the Display Type Machine and the Super Caster.[109]

Although series 220 did not include vowel marks and contained mainly letters, some enquires were made into receiving size 6pt pointed for purposes such as footnotes in Hebrew publications. The requests from Cambridge University Press[110] and the Government printer in Tel Aviv,[111] dating back to 1928[112] up until 1960 all received a negative reply; it was not possible for Monotype to completely point 220-6 for it was not designed with such contingency in view. The casting of 220-6 was explained to be '…uneconomic in both time and money for us to completely redraw'.[113] The solutions given to the customers were influenced by the limited market for Hebrew and they varied from asking for the specific letter and vowel combinations that will be needed for the text to suggesting to extend the pointed series 217 and add size 6pt. In 1960, the Israeli costumer D. Gokkes wrote that the latter solution would not be suitable to go along with 220 because series 217 is slightly smaller when set in the same point size.[114]

On March 1959 a new fount, 220-5pt was ordered and intended to work with 217-6.[115] Similarly to the enquiries about the 6 point size, a request was received from Württembergische Bibelanstalt, Germany in 1964 for few pointed characters. Monotype's reply was that it is possible to manufacture only the characters with the dots above or inside and not the vowel marks below the letters.[116] In matters of dot's positioning, a year later a specific request from the same client was received for placing the vowel dots exactly above the letters and not in their usual place – above and left. For irregular demand such as this and the lack of other customers using this fount, Monotype replied that a special price would be charged from the customer.[117]

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109 Works to Weller and Poore, 'Series 220-36pt,' 16 August - 11 September 1950, production folder p-220, MA

110 unkn to Schenck, 'Enquiry concerning pointed Hebrew,' 19 August 1955, correspondence folder 220, MA

111 Harris to Weller, 'Pointed Hebrew matrices,' 10 January 1985, correspondence folder 220, MA

112 27 February 1928, Production Logs 220

113 Harris to Weller, 'Pointed Hebrew Matrices,' 10 January 1958, correspondence folder 220, MA

114 Gokkes and Oppitz, 21-29 November 1960, Hebrew research folder, MA

115 Date of order 3 March 1959.
unkn, 'specification for new fount 220-5,' 16 March 1959, production folder p-220, MA

116 Thun to unkn, 'Hebrew series 220-5,' 10-21 December 1964, correspondence folder 220, MA

117 unkn, 'series 220-5pt,' 20 August 1965, production folder p-220, MA

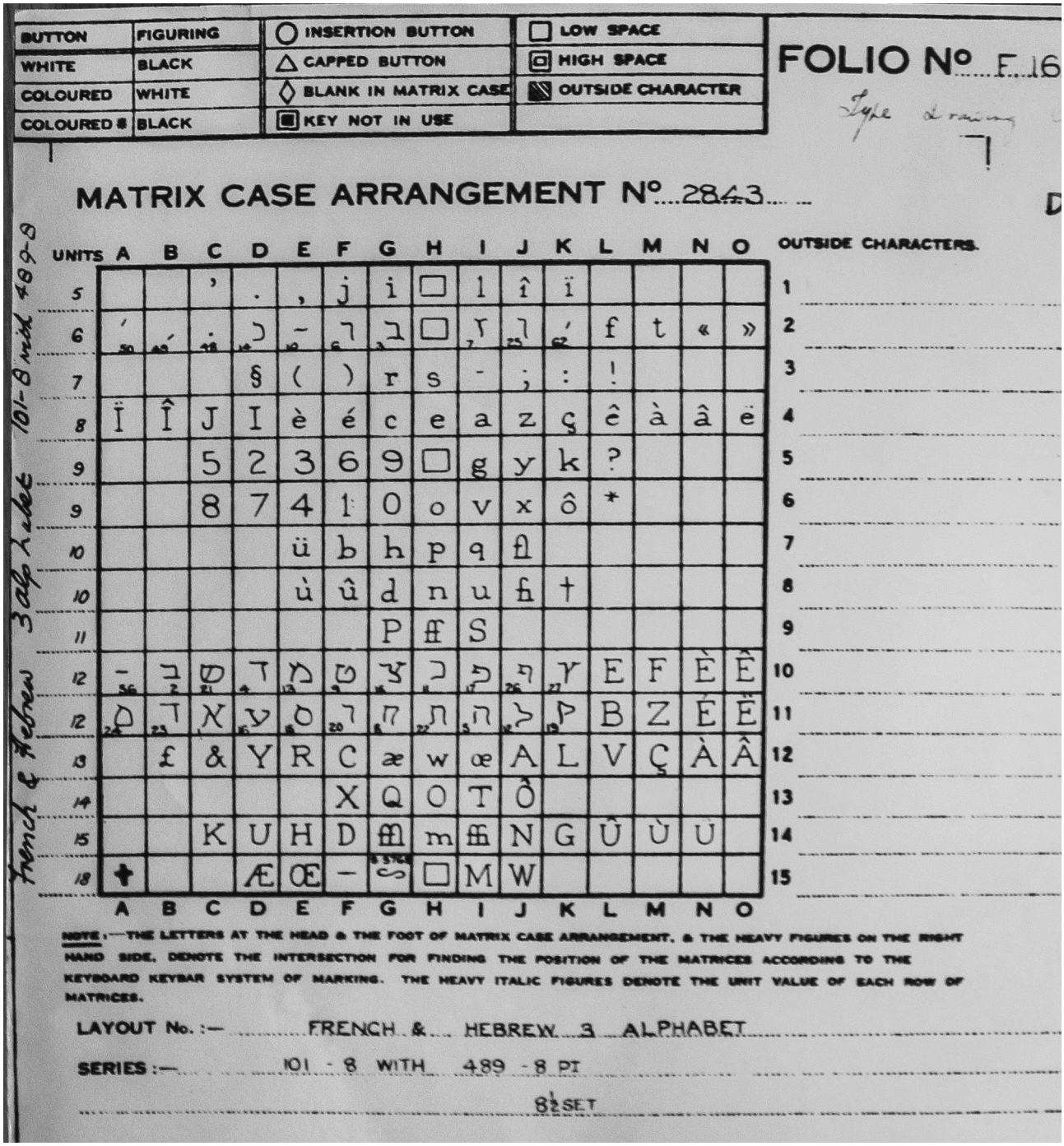

Figure 4.7 The figure presents the M.C.A for 489-8pt with 101-8pt. The Hebrew was usually placed in 180° because of the reverse delivery method, but in the case of casting with Latin it would be placed in the usual way but keyboarded backwards.
(Type archive, London)

4.4 Series 489- Hebrew with Latin

Hebrew composition normally required the use of the Reverse Delivery Attachment.[118] In November 1936, a request arrived from St. Catherine Bruges for the possibility to cast Hebrew automatically with the Latin typeface 'Imprint' series 101-11pt without having to turn the Hebrew letters. The typeface chosen for that purpose was Peninim 217 and it was produced as series 489.[119] After two sets of trails,[120] first with just three Hebrew characters (one ascender and one descender) and then with all, the manufacture of the series in 8pt was approved. Fount 489-8 was intended to be set with series 101 in both 8 and 11 points, with only some adjustments of the unit widths[121] (figure 4.6, p.44). The new series was essentially the same as series 217-7pt.[122] apart from being cut with letters in regular reading way up and designed on 5 and 10 units instead on 9 and 8 units.[123] It consisted of only basic alphabet letters, without the vowels and was used for the Hebrew odd word in Latin text and was to be set in reverse (see the combined M.C.A in figure 4.7), from left to right and always on a larger body because of the Latin point size.[124] If a large amount of Hebrew needed to be cast it was preferable to use series 217 and insert it later by hand to the separately cast Latin.[125]

In May 1963, a request arrived from Rheingold-Druckerei in Mainz for series 489 in 6pt. Due to overload of work Monotype could not accept the request that required 'a great deal of investigation, special drawing etc. However, in the case the client did not wish to compose the Hebrew with Latin, the Corporation suggested to use fount 217-6.[126] In 1965, the company decided to produce a partial fount of 11 characters for series 489 in size 7pt.[127] That size's design

118 which allowed the type to be assembled in the reverse order from Latin composition.

119 2 November 1936-1 September 1937, Index cards 489 and 'Manufacture of new faces', correspondence folder 489, MA

120 'Trail no.1,' 17 August 1937, correspondence folder 489, MA
'Trail no.2,' 7 September 1937, correspondence folder 489, MA

121 In 489 the alignment is 130. For 101-8 the alignment is slightly lower–128.5 and for 101-11 the alignment is slightly higher-132.5.

122 no record was found for the reason the point size changed from 7 to 8 point in series 489 even though it was an exact copy.

123 unkn, 'Marietti, Turin, Massini order 1695,' 28 May 1963, correspondence folder 489, MA

124 unkn, 'Brill, Leiden,' 2 December 1964, production folder p-489, MA

125 unkn, 'Brill, Leiden,' 2 December 1964, production folder p-489, MA

126 unkn to Lequint, 'Hebrew Peninim series 489-6,' 16-17 May 1963, correspondence folder 489, MA

127 unkn, 'Yiddish dictionary,' 14 September 1965, correspondence folder 489, MA

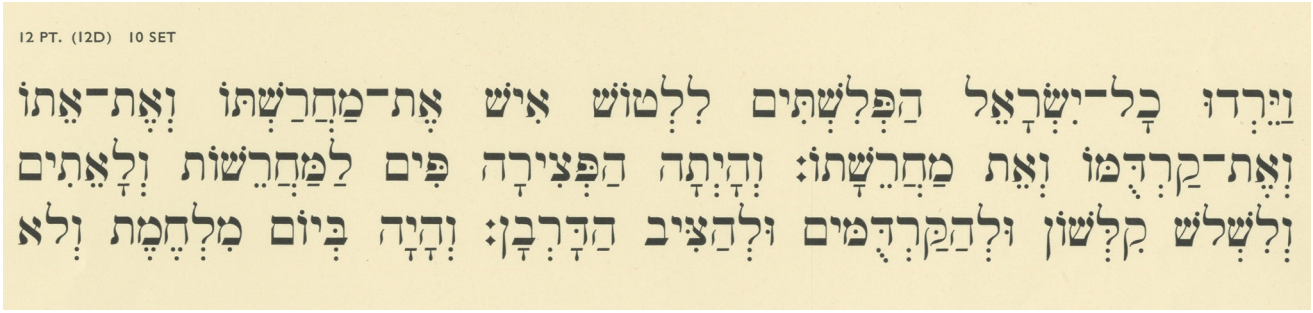

Figure 4.9 Sonzino typeface from Monotype's non-Latins catalogue. The *T'amim* are not shown, but a note at the bottom of the page indicates that 'special points are available for the 9pt.' The style of the typeface is rather old. (MA, Salfords)

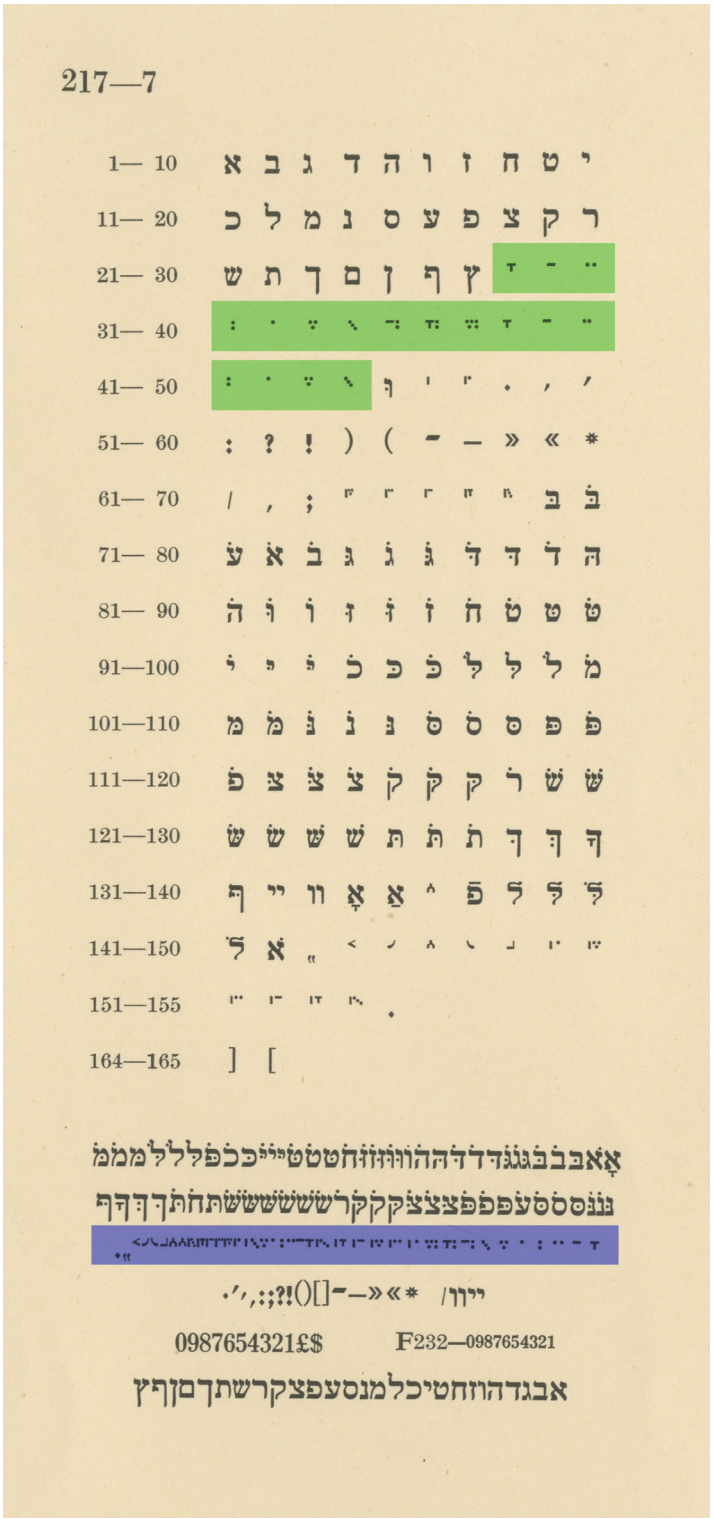

Figure 4.8 The figure shows the full character set of font 217-7. Green: the vowel marks, blue: both vowels and cantillation marks. As can be seen, the vowel marks located above of inside the letters are cast several times, each time with the point already as integral part of the character.
(Correspondence folder 217, MA, Salfords) [125%]

according to the 'specification for new fount' document, is based on series 217-6 inverted.[128] Interestingly, when in 1970 Pio X from Rome enquired about the option of series 217-6 to be set with Latin, Monotype did not want to mention the several characters already cut for 489-7 which would be suitable for the specific wish.[129] Instead, they informed the customer about the availability of the original size in series 489-8pt.

4.5 Casting accents

In working with Monotype machines for Hebrew, it was necessary to separately cast the vowel marks that appear below the characters (figure 4.8). The accents that are located inside or above the letters are already cast as part of the character. For this reason, one can see the same letter in the matrix case more then once: one time as the basic form, once with the *Dagesh* (the dot inside the character), with the *Holam* above the letter to its left, and with both the *Dagesh* and *Holam*. Another kind of accents in Hebrew – the *T'amim*,[130] are used for biblical texts and located both on top and below the characters. As series 220 was designed for letters in their basic form and series 217 was only capable of composing Hebrew with the vowel points under the line of text characters, there was no option to add directly *T'amim* to neither. Many enquiries[131] for these special accents were received between 1959-1965, and some suggested that they should be cast on a third separate line (in addition to the character line and the bottom vowels line). Monotype refused to the idea and claimed that it will not be typographically satisfactory to allow the accents to occupy the same body depth as the text and that the leading would become too large.[132] The only typeface available with *T'amim* was 'Sonzino' (series 218, seen in figure 4.9) in size 9pt with special accents L61 that were designed especially for the purpose of accents below and above the letters.[133]

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128 'specification of new fount', 13 October 1965, production folder p-489, MA

129 Works to Head office, 'Pio X Rome, series 217-6,' 12 May 1970, correspondence folder 217, MA

130 Hebrew name. Also called cantillation marks of Trope.

131 unkn to Harris, 'Raphael Haim Hacohen Ltd.,' 3 July-15 December 1959, correspondence folder 217, MA
unkn, 28 May 1962, Hebrew research folder, MA
unkn to Avery, 19-27 November 1963, production folder p-217, MA
unkn, 13 September 1965, production folder p-217, MA

132 unkn, 'Matrix enquiry series 217-8pt,' 27 November 1963, production folder p-217, MA

133 The special accents were designed to be used with 218 9 pt. 4.5 body height is

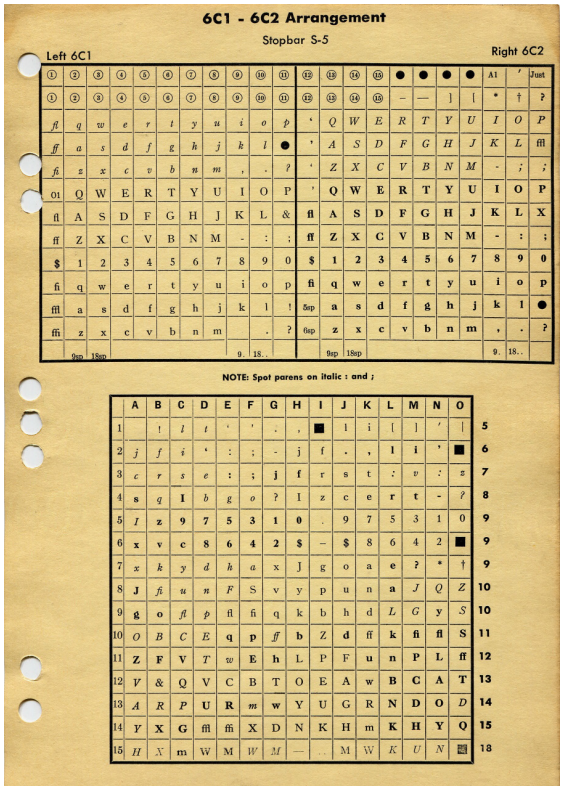
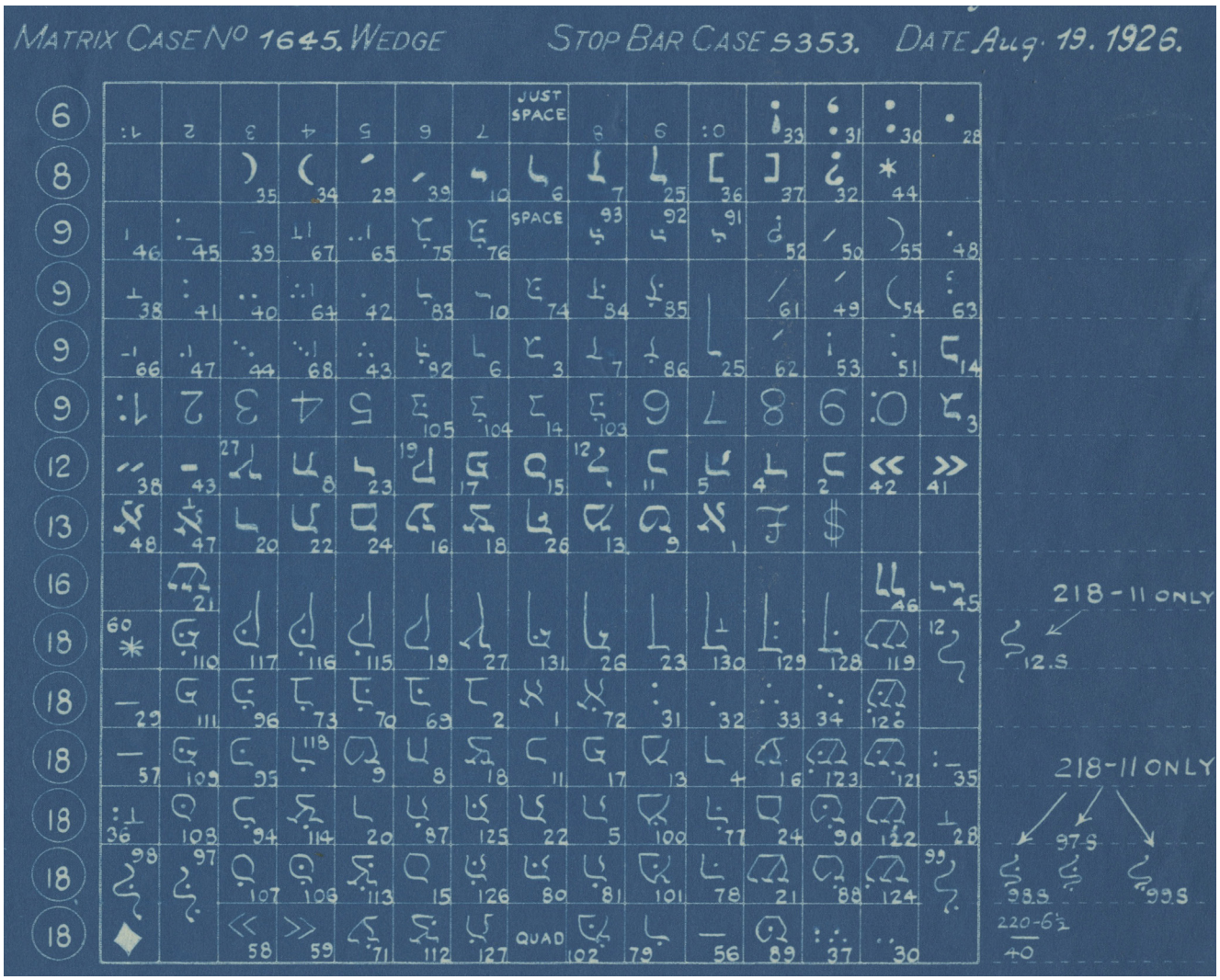


Figure 4.10 An example of a Latin M.C.A from a collection of Matrix Case Arrangements. Note that this case accommodates both upper & lower case and italics, which don't exist in Hebrew. (Digital archive, http://archive.org/details/LanstonMatrixCaseArrangements1) [size unkn]

Figure 4.11 The figure presents M.C.A 1645 which combines series 217, 220 and an option for 218. Combining series in one matrix case was common in Hebrew. The characters on the right side are characters outside the matrix case. The difference between the series is in the weight of the drawn characters; 220 is heavier than 217. The characters of 220 have 8, 12 and 13 units.
(Hebrew research folder, MA, Salfords)



In the pointed version of 'Peninim' – series 217– character unit values are only 9 and 18, so that in order to position the vowels correctly beneath the letters there was only a need for two sets of them– one for each width: for the narrow and for the wide characters. In contrast, series 220 had a range of character unit values: 7, 8, 9, 12, 13 and 16; therefore, in order to point a fount of series 220 it was necessary to design a whole set of vowels for each width. In such case of a wish to have series 220 pointed, the client was asked to specify which points are required under which of the various letters.[134]

At the end of 1955, a suggestion to change the vowel system for Hebrew arose from the Amsterdam manager. He proposed to cast the accents on the same line of the characters, similar to Burmese.[135] In that way, there was no need to cast two separate lines and placing the accents in their right place will not be an issue. Four days later, the reply was sent– the suggestion over simplified the keyboard problem and the regular accents methods will remain as is. Because almost every vowel mark in Hebrew can be placed under every letter, accepting this suggestion will increase the number of characters to about 1700 pairs[136] a large number that is problematic in Monotype machines.[137]

4.6 Combining Series

Latin typefaces, containing upper and lowercase characters along with figures and signs usually occupied a full matrix case. Therefore, it was not common to have a case containing more then one series and more then one point size (figure 4.10). The case of Hebrew– however – was different, and requests for combining multiple series and sizes could be approved. Already in 1926, Lerner & Teller enquired about accommodating series 219 (Ashurith), 220 (Peninim) and 221 (Levenim) in 9pt in one matrix case. The reply was positive, but two of the characters from 219-9 had to be omitted due to lack of space.[138]

Most matrix cases required by customers included the pointed

possible for each above and below the letters, so the leading would not be too large.

134 unkn to Schenck, 'Enquiry concerning pointed Hebrew,' 19 August 1955, correspondence folder 220, MA

135 For further reading on Burmese and Monotype see Ben Mitchell, 'Burmese printing types 1776–1976,' Unpublished MA dissertation. Reading, 2012, p.63-67

136 According to Drugulin type foundry in Leipzig. Letter: unknown, 1913

137 Unkn, 'Hebrew,' 9-13 December 1955, Hebrew research folder, MA

138 Unkn, 16 August 1926, Hebrew research folder, MA

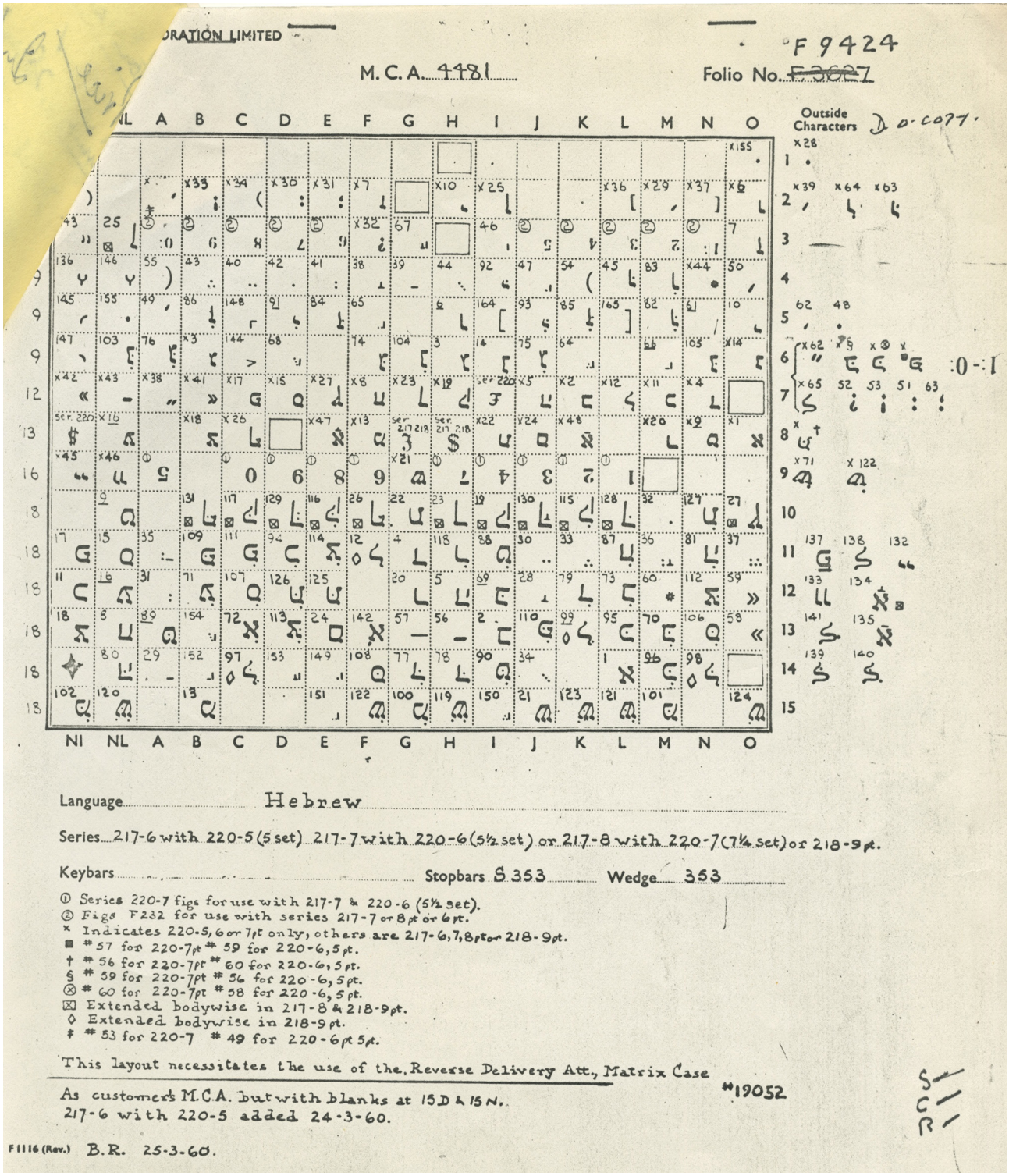


Figure 4.12 The figure shows the most popular Hebrew M.C.A 4481. The options for combinations were (1) 217-6 with 220-5, (2) 217-7 with 220-6, (3) 217-8 with 220-7 or 218-9. There are several characters outside the matrix case. The notes below serve as a legend of the different matrices and the series they belong to.
(Hebrew correspondence folder, MA, Salfords) [60%]

combined with the unpointed version of Peninim, series 217 and 220 in different sizes. Lerner & Teller wanted to have a combination which according to them is often needed in Hebrew – series 217-9 with 220-6.5. Within 6 weeks the M.C.A[139] was finalised, after receiving comments from the customers and rearranging the layout.[140] The figures and currency signs were to be cut in 217-9 (figure 4.11, 50). The need for 217-6 combined with 220-5 arrived at the end of 1958 from Monotype users in Israel, wishing to include the unpointed version in the 217-6 matrix case.[141] The arrangement of M.C.A 4481(figure 4.12, 4.13 p.54) was done by the customers and became very popular.[142] It was intended to be used for casting 217-6 with 220-5, 217-7 with 220-6 and 217-8 with 220-7 or 218-9. The M.C.A included punctuation and vowel marks, as well as some matrices that were outside the matrix case . For Ha'aretz Press, a similar M.C.A (5466) was prepared on the base of M.C.A 4481with their own modifications. The differences between the two M.C.A's are shown on figure 4.14 (p.55) and are mainly in the positions of the figures and punctuation.

The action of printing two sizes of Hebrew on one body, wrote John Goulding, head of the T.D.O in 1963, with hot-metal was simpler than film.

4.7 Combining Hebrew with Latin

In most cases of combining of Hebrew and Latin, a compromise had to be made. The less dominant script in the text would need to be cut in reverse. In the case of a dominating Hebrew there was little advice Monotype could offer[143] as they did not have or intended to cut any Latin typeface in reverse.[144] In a letter addressed to Firmage, the overseas manager it was clearly stated that 'we have no capacity at the present time to undertake such complicated investigation and manufacture. Our production schedule is fully booked for several years.'[145]

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139 Probably M.C.A no. 1645

140 Unkn, 17 August 1926, Hebrew research folder, MA
14 August-22 September 1926, Index cards 217, MA

141 Lewin to unkn, 23 December 1958, correspondence folder 217, MA

142 unkn, 'Merkaz Press Ltd., Israel,' 11 December 1962, correspondence folder 217, MA

143 Continental to works, 'Descleè de Brouwer, Belgium,' 25 September 1957, Hebrew research folder, MA
Unkn, 'Desclee, Bruges,' 17 February 1958, correspondence folder 489, MA

144 Unkn, 'D. Gokkes, Tel Aviv,' 19 May 1964, correspondence folder 217, MA

145 Unkn to Firmage, 'Bembo Italic for composition with Hebrew,' 6 April 1961, correspondence folder 217, MA

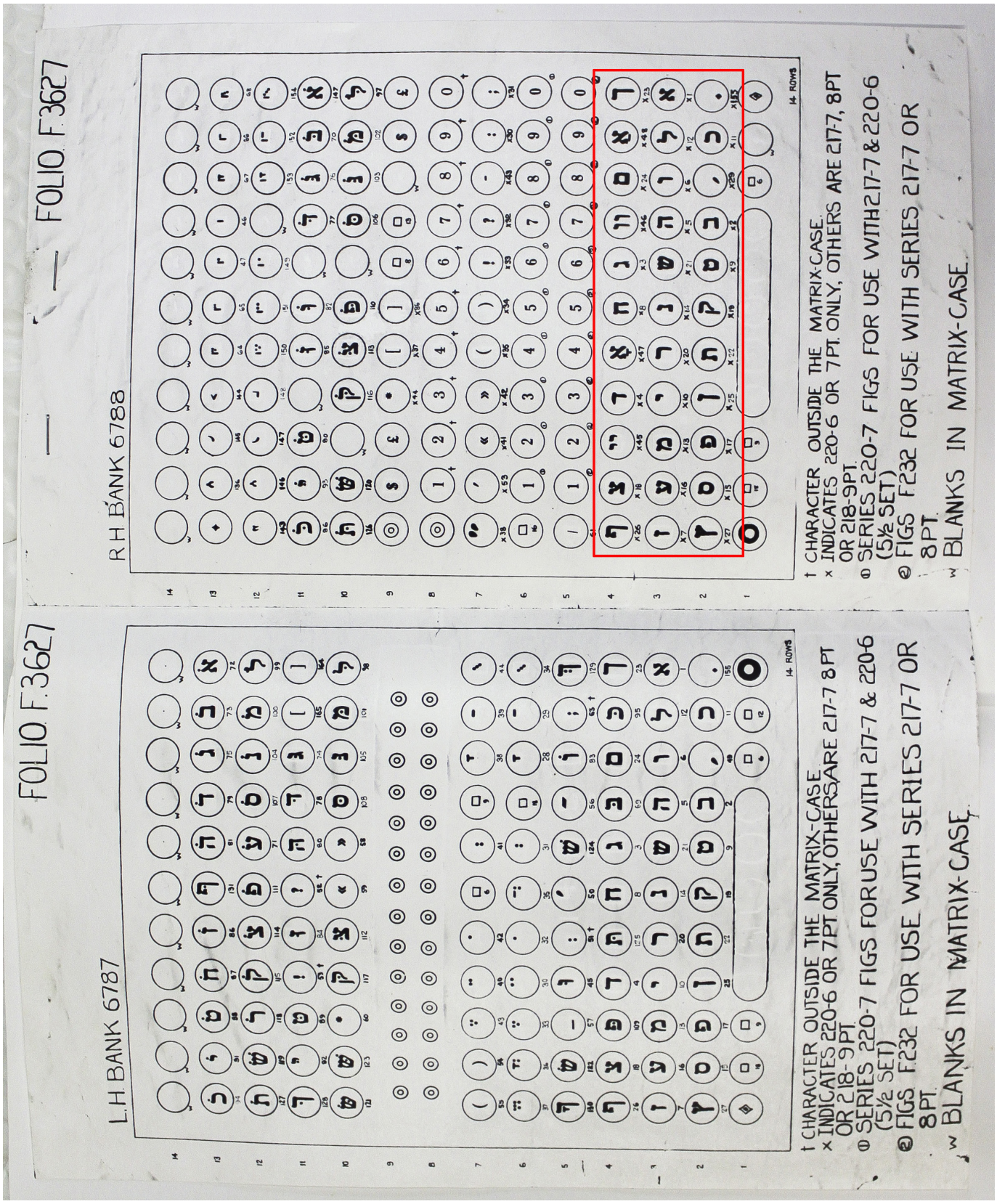
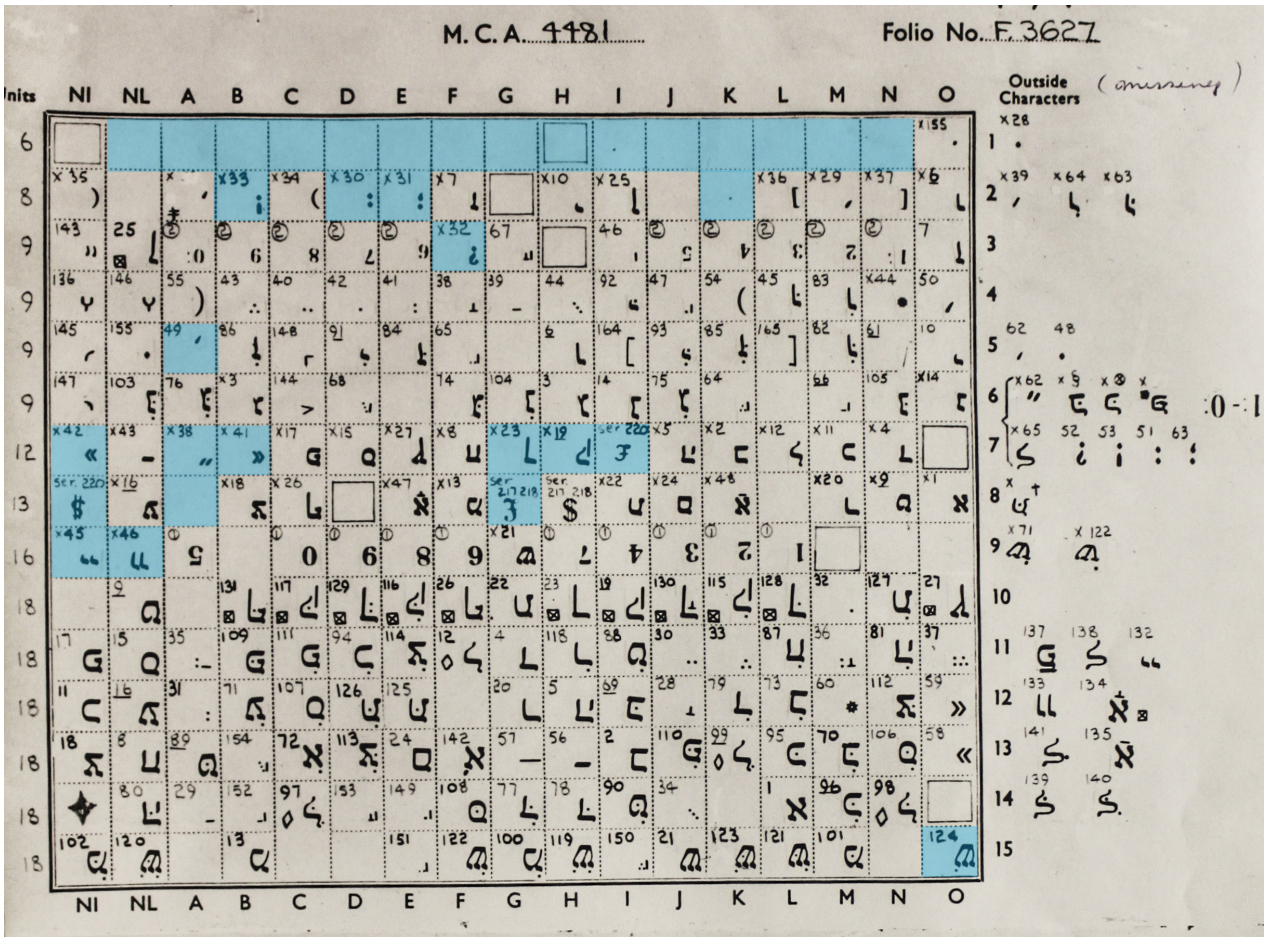


Figure 4.13 The keyboard used with M.C.A 4481. As can be seen, the order of the characters is more convenient for the ease of typing. Red: series 220 (Type archive, London) [90%]



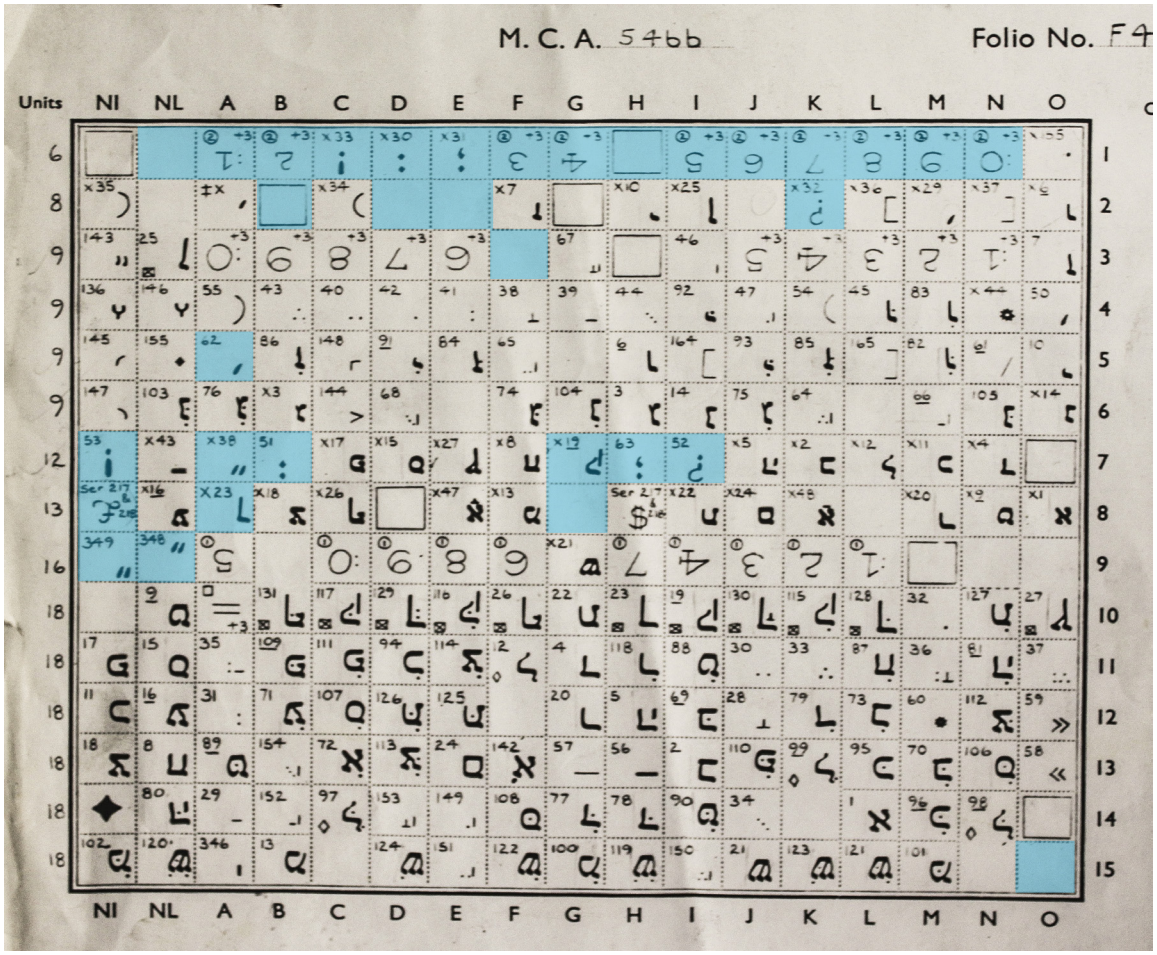
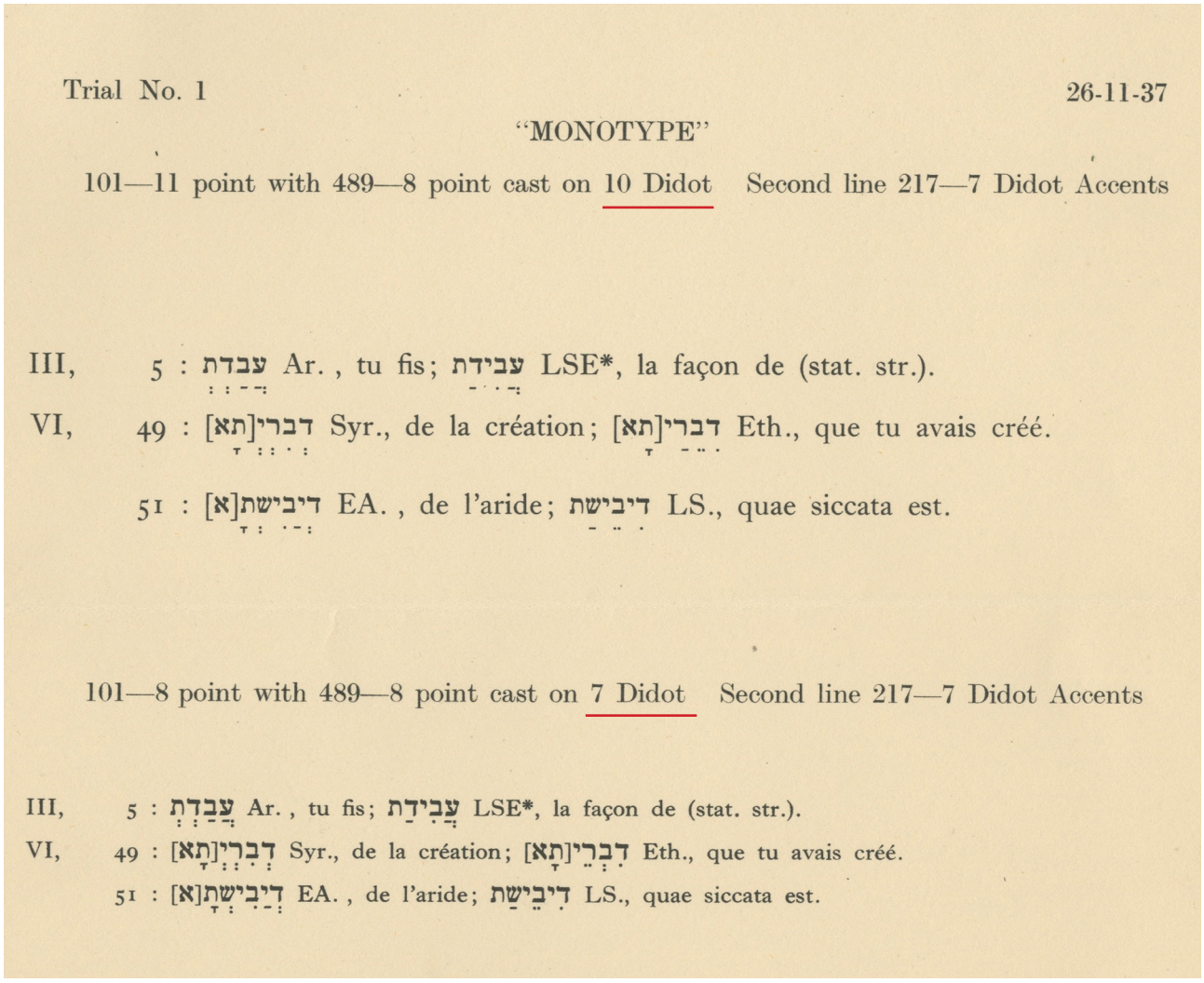


Figure 4.14 Differences in the location of characters between M.C.A 4481 and M.C.A 5466 are marked in blue. M.C.A 5466 was organised for Ha'aretz press.(Type archive, London) [80%]



Trial No. 1 26-11-37

"MONOTYPE"

101—11 point with 489—8 point cast on 10 Didot Second line 217—7 Didot Accents

III, 5 : עבדת Ar., tu fis; עבידת LSE*, la façon de (stat. str.).

VI, 49 : [תא]דברי Syr., de la création; [תא]דברי Eth., que tu avais créé.

51 : [א]דיבישת EA., de l'aride; דיבישת LS., quae siccata est.

101—8 point with 489—8 point cast on 7 Didot Second line 217—7 Didot Accents

III, 5 : עַבְדְתְ Ar., tu fis; עֲבִידַת LSE*, la façon de (stat. str.).

VI, 49 : [תָא]דְבְרֵי Syr., de la création; [תָא]דְבְרֵי Eth., que tu avais créé.

51 : [א]דְבִישְׁתָ EA., de l'aride; דְיבֵישַׁת LS., quae siccata est.

Figure 4.15 A trail from November 1937 to cast Latin font with 489-8 consisting vowel points from 217-7. The difference between the two attempts is the body size. It is evident that with 10 Didot the leading is too large. (Correspondence folder 217, MA, Salfords) [120%]

In March 1961, a request arrived from Peli P.E.C Printing Works Ltd. from Israel to have Bembo typeface (series 270) cut in reverse and raised interesting issues about combining Hebrew with Latin. The correspondence was mainly within Monotype, between the overseas and works departments. The customer wanted and insisted on using series 217-6 with Bembo, but Monotype refused for some reasons; the first is that only one set size can be used, and by altering the Latin to conform with the Hebrew, unit values go beyond the range that could be obtained from the keyboard. The second reason relates to the possibilities of accommodating the M.C.A and unit rows needed for each script; Hebrew characters would have to be removed from the case. To assist with solution Monotype suggested Peninim 489-8 used with Imprint 101-11 instead.[146] Another possibility was to compose the Latin and Hebrew separately, starting with the Latin in order to note the widths of the words. Afterwards, composing the Hebrew with the same spaces of the Latin words, casting them both and then inserting by hand the Latin words to the Hebrew text.[147] This latter suggestion was accepted by the client on May 1961.[148]

Other than Bembo, enquiries about different typefaces were recorded. In December 1959, D. Gokkes from Israel wanted to combine Peninim with Times New Roman for printing Arithmetic books. If the objective was obtaining mathematical signs, Monotype suggested that they could produce those special matrices, but as for Times New Roman the answer was negative.[149] In stylistic matters, the company believed that this typeface would have too little weight relative to the Hebrew but that would be their personal choice.[150] Few years later another request arrives, this time to set Peninim 217-7.5 with series 101 (Plantin). Once again, Marietti from Turin is urged to change the Latin typeface to series 101 while stating that because the demand for Hebrew designed in that manner is small, Monotype will not manufacture another version.[151]

When pointed Hebrew matrices are inserted into Latin text, the body size is doubled because of the vowel points line, and the leading becomes too large. Therefore, regarding a request from Denmark

146 Oppitz, works, Firmage 'Bembo Italic for composition with Hebrew,' 30 March-6 April 1961, correspondence folder 217, MA

147 For detailed descriptions of these issues see:
unkn, 'Bembo Italic, series 270-10pt for composition with Hebrew, series 217-6,' 25 April 1961, correspondence folder 217, MA

148 Oppitz to works, 26 June 1961, correspondence folder 217, MA

149 Harris and unkn, 31 December 1959, 11 March 1960, correspondence folder 217, MA

150 Unkn, 'Desclee, Bruges,' 17 February 1958, correspondence folder 489, MA

151 Faulkner and works, 'Massini order 1695,' 24-28 May 1963, correspondence folder 489, MA

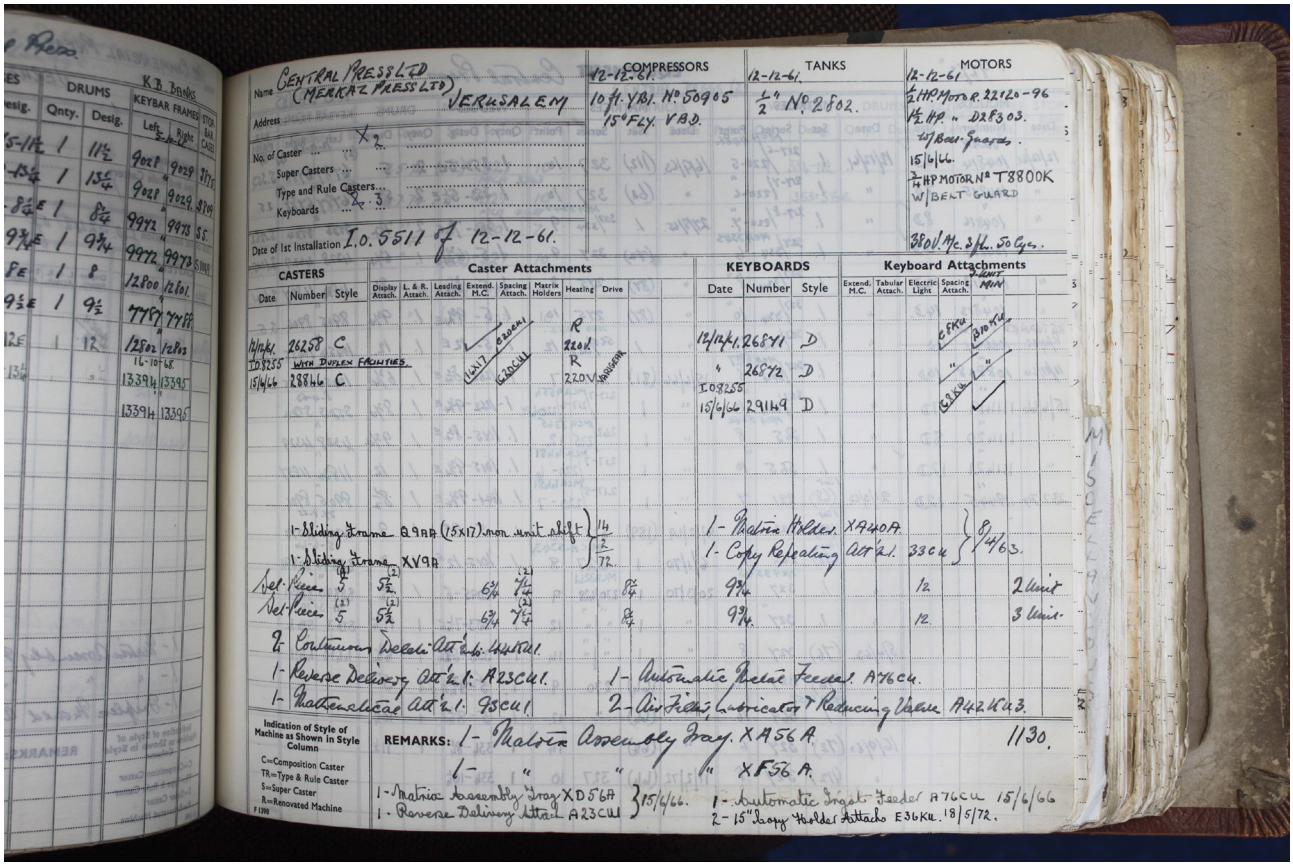


Figure 4.16 Israel sales records. The page shows purchases of equipment such as casters, keyboards and attachments per printing house. (Type archive, London)

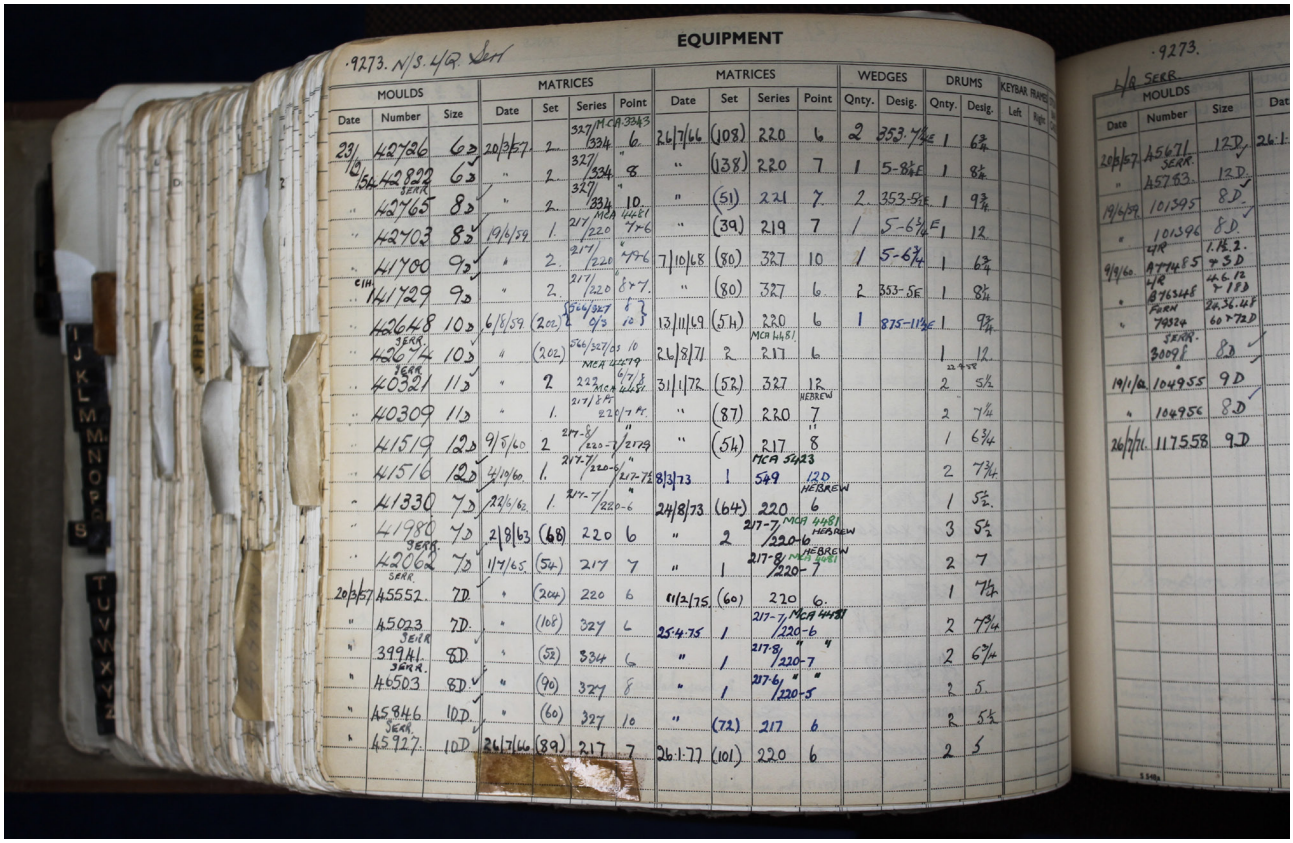


Figure 4.17 Records of sales in Israel. The page shows moulds and matrices purchased. (Type archive, London)

for series 489-8 pointed, it was assumed that the customer means the points above and inside the letters. Those could be supplied, but would need to be cast separately for inserting by hand. Because of the amount of matrices there was anyways no room in the M.C.A for them.[152] A trail of casting the letters with vowel points combined with Latin was found, and indeed can be seen as problematic (figure 4.15 p.56).

In the days of filmsetting, Goulding wrote that it is easier to compose Hebrew with Latin in phototypesetting, and therefore this method should be recommended for clients. The restrictions that arose from hot-metal partially vanished.[153]

4.8 Sales Records

It is known that Peninim was Monotype's best selling Hebrew typeface. Looking into the sales records can give an insight about the popularity of Peninim typeface within the range of typefaces purchased by costumers. The sales records in the Type Archive in London include acquiring of machines, attachments and matrix cases consisting typefaces, divided in separete books for London, the UK and the rest of the world.

The following data was collected from the sales records in Israel, were the largest number of Hebrew typefaces were purchased. The records contain purchases between 1946 and 1978, shown only in hot-metal (figures 4.16, 4.17).

The most popular purchase of Peninim as seen in figure 4.18 (p.60) is of combined series in one matrix case. After that was the pointed series 217 and last was series 220, despite its many sizes available.

In figure 4.19 (p.60), the number of Peninim purchased in each printing house is compared with the rest of the typefaces bought. Even though there is a large number of other typefaces including Hebrew, Arabic and Latin typefaces, Peninim certainly holds a large percent of the fonts with close to 50% in most places. Within the typefaces bought on the same date with the first Monotype equipment, the majority was Peninim, proving its necessity to Israeli printers (figure 4.20, p.60).

Figure 4.21 (p.62) presents the records for each size acquired in series 217. Despite the fact that sizes 5pt, 7.5pt and 9pt were cut later than the rest, the graph still shows a large difference which indicates

152 Uunkn, 'Peninim Hebrew series 217-7,' correspondence folder 217, MA
Unkn, 'Hebrew series 489-8, correspondence folder 489, MA

153 Goulding to secretary of Filmsetter technical committee, 'Hebrew on 'Monophoto," 13 September 1963, correspondence folder 217, MA

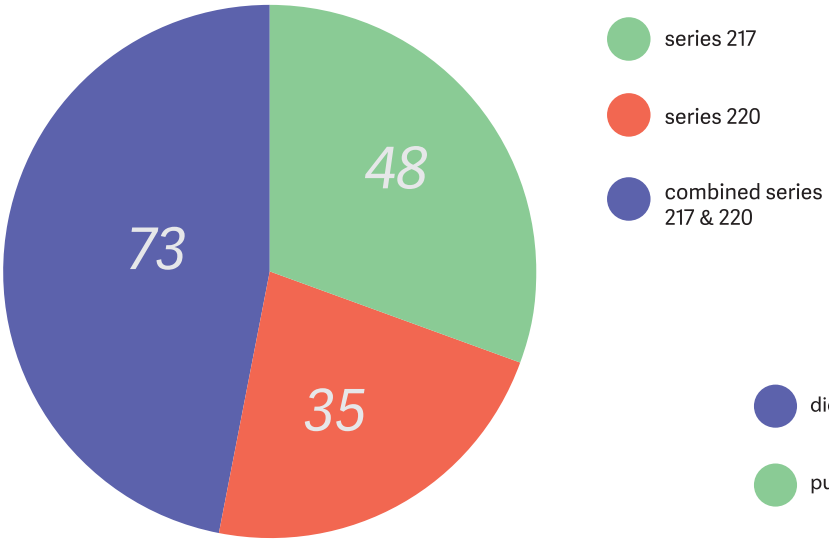


Figure 4.18 Purchase records of Peninim based on series.

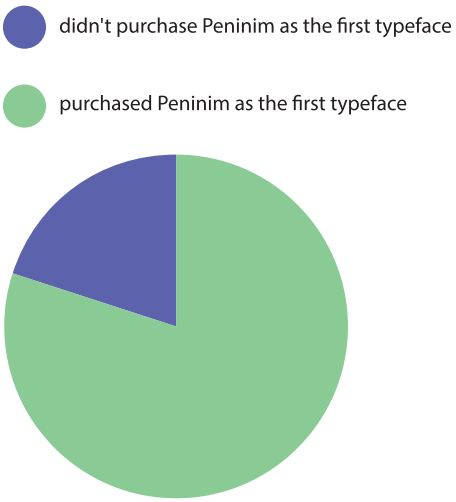


Figure 4.20 Purchase records of Peninim as the first typeface on the same date with the Monotype machine.

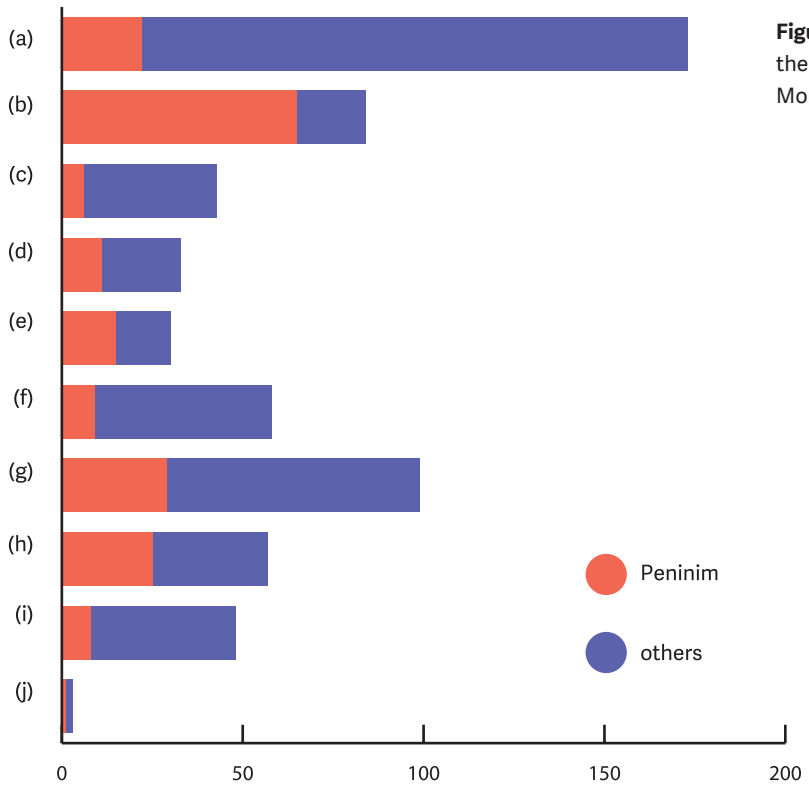


Figure 4.19 Purchase records of Peninim compared with other typefaces (Latins and non-Latins) The printing houses mentioned: (a) Ahva Co-operative press Ltd. Jerusalem; (b) Yout: Printer, Hakirya, Jerusalem, Israel; (c) Davar, Tel Aviv, Israel Labour Daily; (d) Dfous Raphael Chaim Hacohen, Jerusalem; (e) Gokkes Daniel (Monoline), Ramat Gan; (f) Jerusalem Academic Press; (g) Peli-P.E.C Printing Works Ltd; (h) Sivan Press Ltd.; (i) Central Press; (j) Histadrut Executive 'Amal' school

the popularity of sizes 6pt, 7pt and 8pt. 217-7pt, the first size produced, was by far the most popular size in all Peninim series with 59 sales. In contrast the 5pt had one single sale.

In the same way, figure 4.22 (p.62) sorts series 220 to sets purchased. As the records show, the display sizes were not commercially successful in contrast to the text sizes, having 1-3 sales each. The small text sizes, though, were bought much more, with 6pt leading the chart with 43 purchases. 220-6pt, similarly to 217-7pt was the first size of the series to be produced and this is the probable reason for the high popularity.

The sales in London and in the UK were much less in quantity and consisted mainly of sizes 7pt and 8pt for series 217, and 6pt and 7pt of series 220.

In addition to the records found in the Type Archive, another sales book was located in Salfords. Even though the sales stated in this book are mostly between the years 1966-1977 and it is uncertain to which method the records apply and the geographic location, it is still valuable data in order to get an idea of the popular sizes purchased. The records show that the sales up to 1965 were as following:

Series 217: 6 sets of 6pt, 61 sets of 7pt and 52 sets of 8pt. The sales for 7.5pt and 9pt were not recorded.

Series 220: 3 sets of 5pt, 31 sets of 6pt, 29 sets of 7pt, 11 sets of 14pt, 12 sets of 18pt, 11 sets of 24pt and 8 sets of 36pt.

Based on those numbers, it is evident that the display sizes were bought many more times than the records in the previous book, creating a possibility that the records shows either the entire sales all around the world or outside Israel. Although series 217 was offered in less sizes, it was still more popular than 220. In the 60's and 70's records, shown in figure 4.23 (p.63) a peak in the purchases can be seen in 1975 but the sales throughout the decade before were rather consistent. Those records of series 217 were triple than series 220, which lacked purchases of display sizes apart from one set of 24pt bought in 1976. Figure 4.24 (p.63) shows that the sales of 7pt were popular while the 5pt was ordered sporadically.

Sales of series 489 were rarely mentioned in the records, and only two purchases of 489-8pt are marked in the Salfords book.

4.9 The alternatives to Peninim

In 1963 Monotype wanted to find an alternative to Peninim typeface and asked Lewin, their agent in Israel to search for a modern typeface that would be desirable by local customers and not only

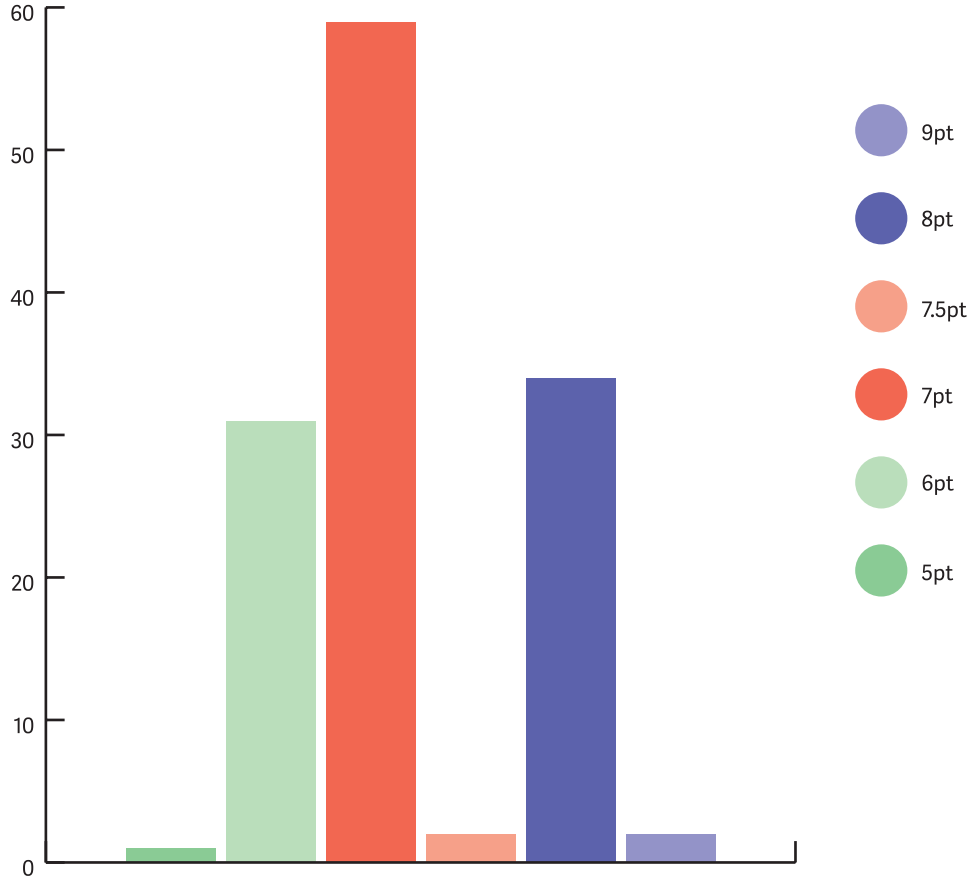


Figure 4.21 Records of sizes purchased in series 217.

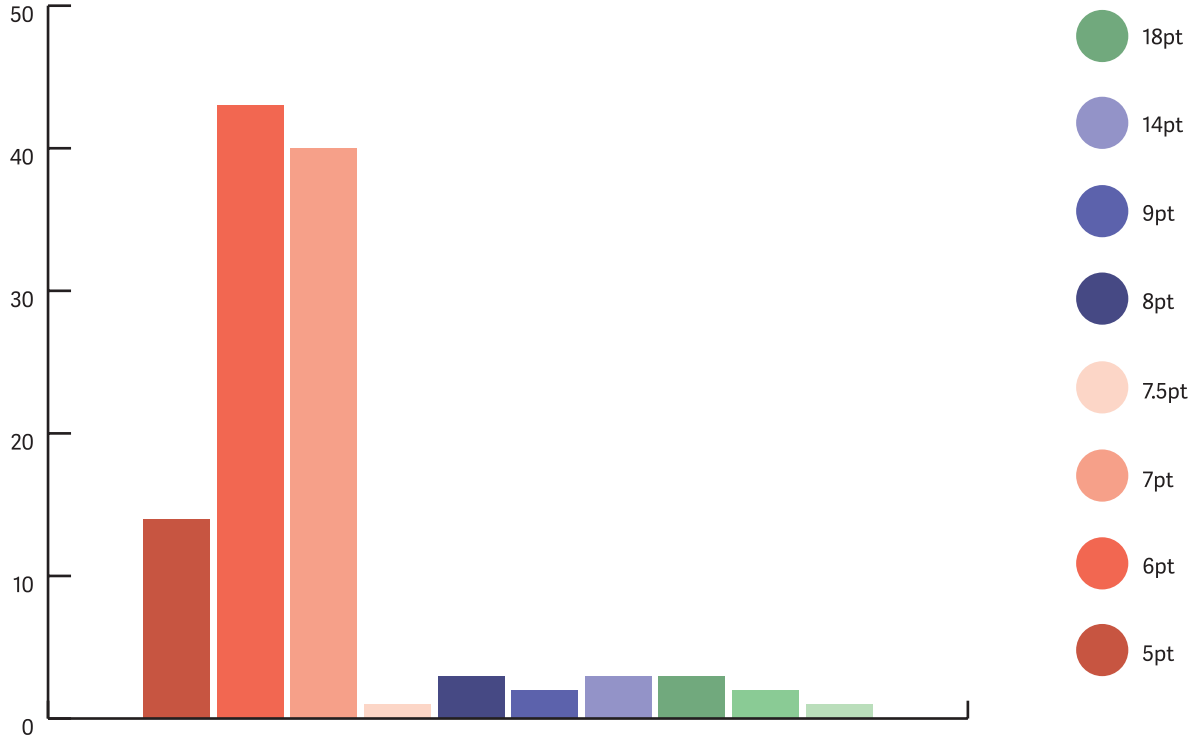


Figure 4.22 Records of sizes purchased in series 220.

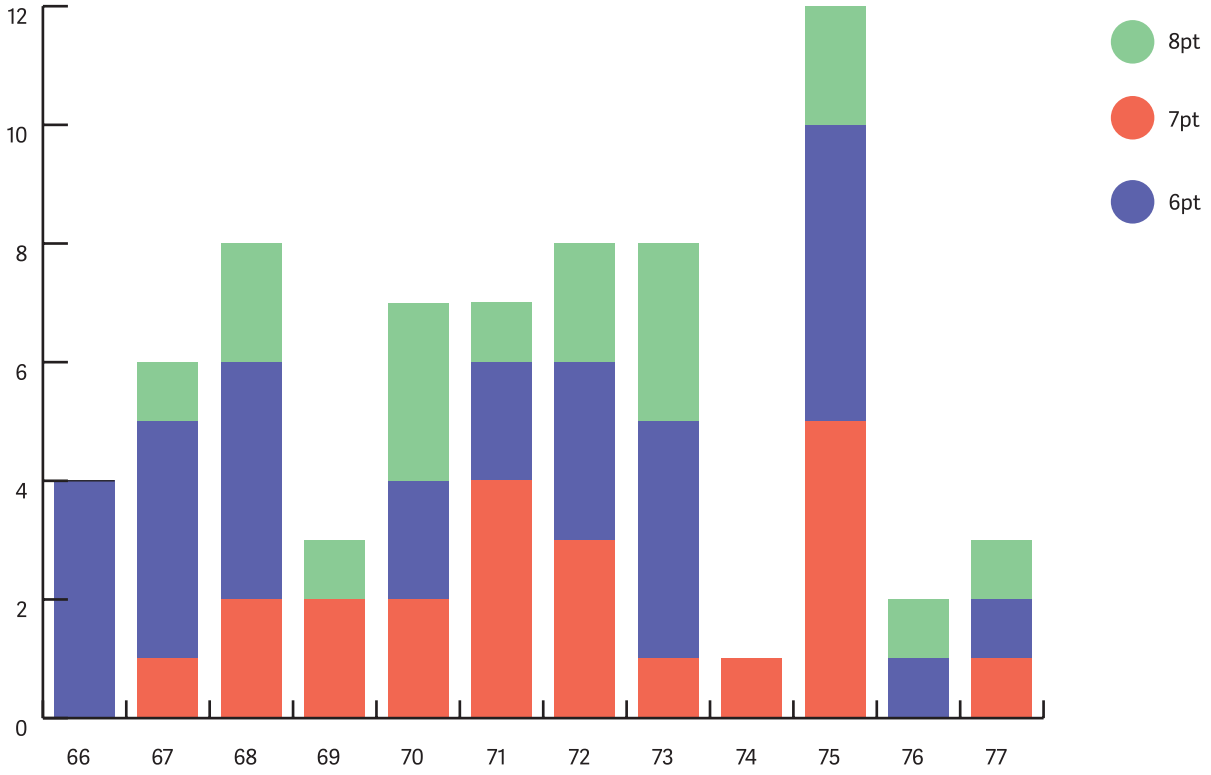


Figure 4.23 Sets sold of series 217 between 1966-1977.

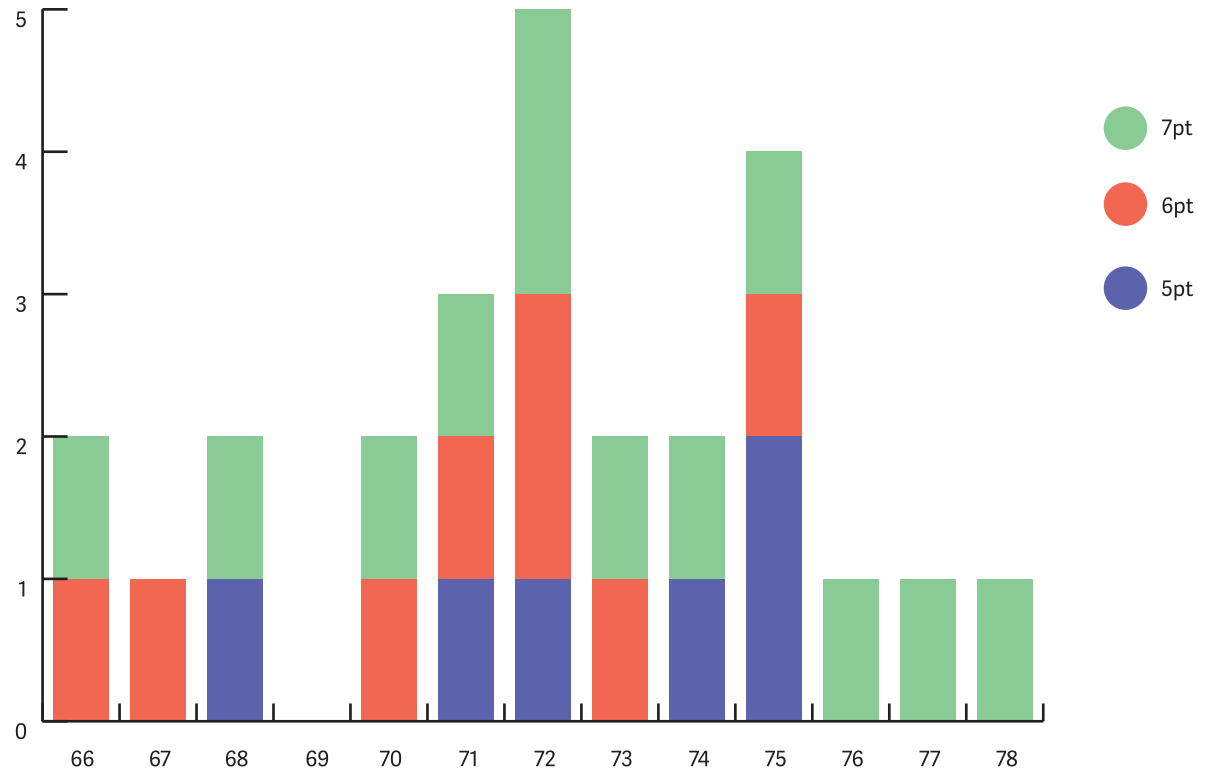
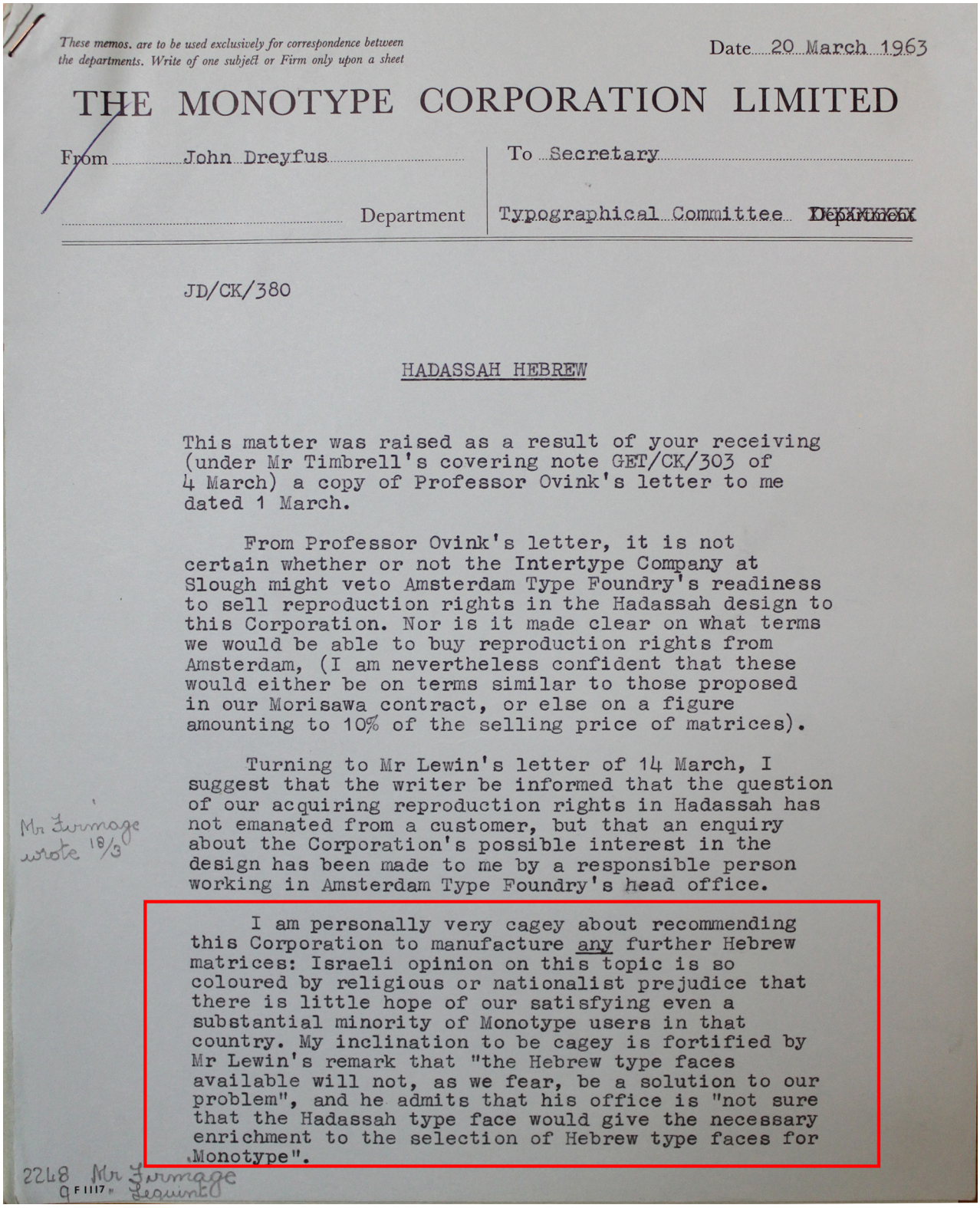


Figure 4.24 Sets sold of series 217 between 1966-1978.



These memos. are to be used exclusively for correspondence between the departments. Write of one subject or Firm only upon a sheet

Date 20 March 1963

THE MONOTYPE CORPORATION LIMITED

From John Dreyfus Department

To Secretary Typographical Committee ~~Department~~

JD/CK/380

HADASSAH HEBREW

This matter was raised as a result of your receiving (under Mr Timbrell's covering note GET/CK/303 of 4 March) a copy of Professor Ovink's letter to me dated 1 March.

From Professor Ovink's letter, it is not certain whether or not the Intertype Company at Slough might veto Amsterdam Type Foundry's readiness to sell reproduction rights in the Hadassah design to this Corporation. Nor is it made clear on what terms we would be able to buy reproduction rights from Amsterdam, (I am nevertheless confident that these would either be on terms similar to those proposed in our Morisawa contract, or else on a figure amounting to 10% of the selling price of matrices).

Turning to Mr Lewin's letter of 14 March, I suggest that the writer be informed that the question of our acquiring reproduction rights in Hadassah has not emanated from a customer, but that an enquiry about the Corporation's possible interest in the design has been made to me by a responsible person working in Amsterdam Type Foundry's head office.

Mr Jurmage wrote 18/3

I am personally very cagey about recommending this Corporation to manufacture any further Hebrew matrices: Israeli opinion on this topic is so coloured by religious or nationalist prejudice that there is little hope of our satisfying even a substantial minority of Monotype users in that country. My inclination to be cagey is fortified by Mr Lewin's remark that "the Hebrew type faces available will not, as we fear, be a solution to our problem", and he admits that his office is "not sure that the Hadassah type face would give the necessary enrichment to the selection of Hebrew type faces for Monotype".

2268 Mr Jurmage 9 F 1117 Lequint

Figure 4.25 A letter from 20 March 1963 stating the problems in finding an alternative to Frank Rühl in relation to Israel, according to John Dreyfus.
(Hebrew correspondence folder, MA, Salfords) [80%]

outside Israel.[154] It is not clear when the request was made, but by March that year Lewin did not make much headway on the issue because according to him the typefaces available were not solving the problem (which is not mentioned) and not because there is a wide selection to choose from.[155] Monotype also wanted to know from the continental manager Lequint if he hears of any requests for a Hebrew typeface because they would like to 'get the whole picture'.[156]

The search continued and in April, Lewin sends Weller through Lesley Oppitz from the overseas department at Salfords, a print of a Hebrew typeface which was not generally known in Israel but to his opinion could be applied on Monotype equipment. He believed the typeface belongs to Lanston Industries from the United States. The response to that letter is somewhat disappointed; Monotype expected to receive designs for 'a completely new, modern face' and the prints sent to them were very similar to Peninim series 217, which made them wonder what would be the advantage to the new typeface suggested.[157] Mr. Lewin replied and explained that Frank Rühl, which Peninim is based on is the only Hebrew typeface usable for texts. It is not clear why he made this statement but it is still perceived so currently in Israel. He adds: 'All the other typefaces designed so far in Hebrew are, of course, more modern, but not suitable for text work. This includes the 'Hazwi' and the 'Hadassah' group and their variations.' He concludes by repeating that there is no alternative to Frank Rühl.[158] In a letter from Dreyfus to the Typographical committee is written: 'I am personally very cagey about recommending this Corporation to manufacture **any** further Hebrew matrices: Israeli opinion on this topic is so coloured by religious or nationalist prejudice that there is a little hope of our satisfying even a substantial minority of Monotype users in that country…' Dreyfus also claims that without first-hand knowledge he cannot have an opinion about a Hebrew typeface. It is not clear from the letter why he writes about prejudice, he does not give a detailed explanation or examples[159] (figure 4.25).

Schocken typeface (figure 4.26 p.66) was designed by Francesca Baruch and was produced in Monotype as two series; Series 547 for composition in 6,7 and 9pt and series 550 for display in 14 and 18pt. Schocken typeface was copyright for some years but then it

154 Ibid.

155 Firmage and Lewin, 14-31 March 1963, Hebrew correspondence folder, MA

156 Unkn to Lequint, 21 March 1963, Hebrew correspondence folder, MA

157 Oppitz, Weller and Firmage, 'Hebrew,' 17-18 April 1963, Hebrew correspondence folder, MA

158 Oppitz to Weller, 'New Hebrew type face,' 3 May 1963, Hebrew correspondence folder, MA

159 Dreyfus to Weller, 20 March 1963, Hebrew correspondence folder, MA

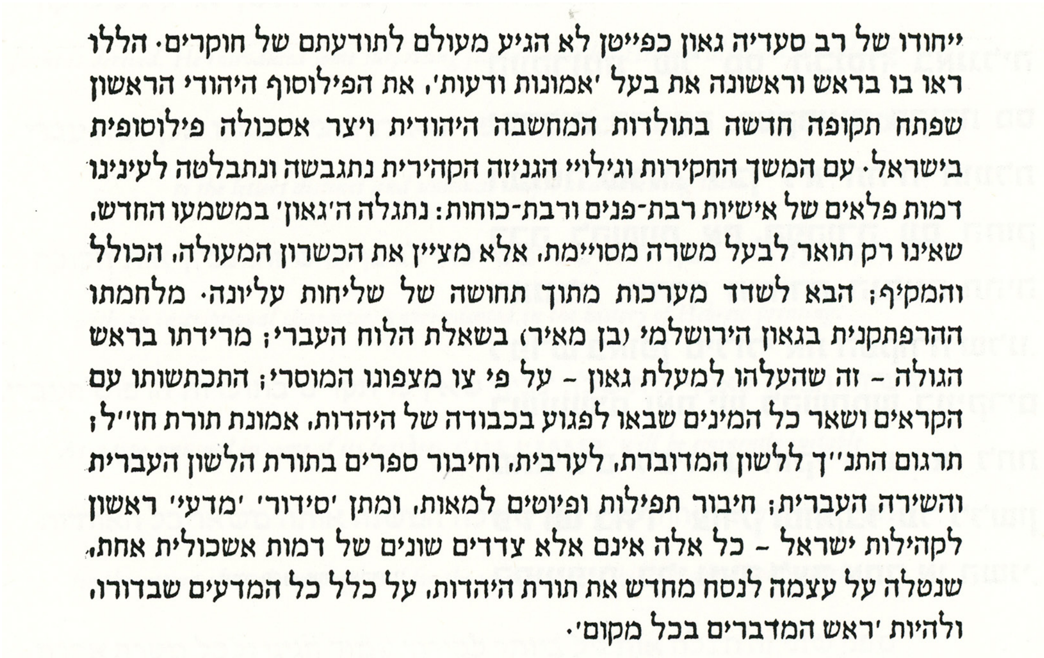
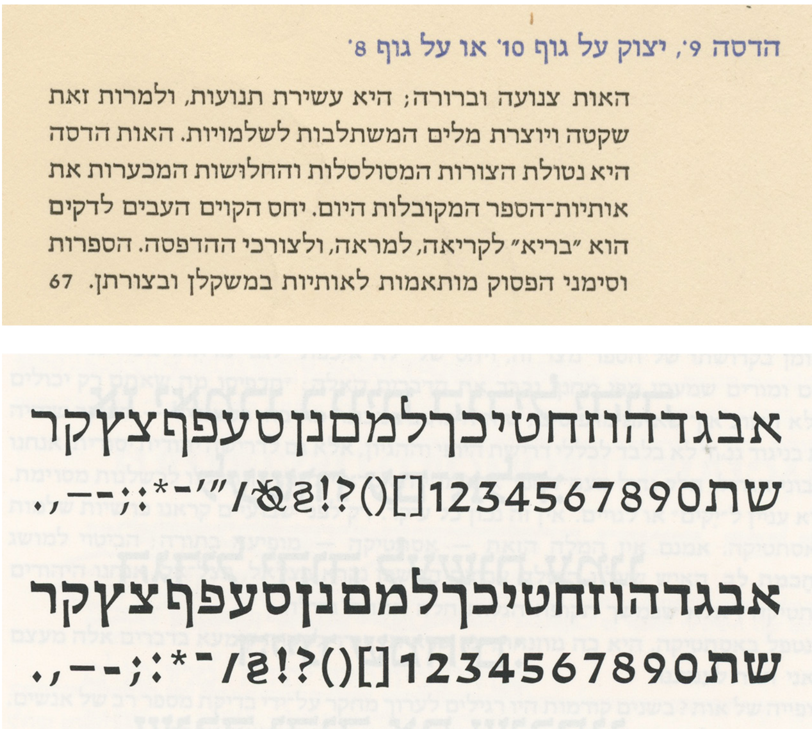

ייחודו של רב סעדיה גאון כפייטן לא הגיע מעולם לתודעתם של חוקרים. הללו
ראו בו בראש וראשונה את בעל 'אמונות ודעות', את הפילוסוף היהודי הראשון
שפתח תקופה חדשה בתולדות המחשבה היהודית ויצר אסכולה פילוסופית
בישראל. עם המשך החקירות וגילויי הגניזה הקהירית נתגבשה ונתבלטה לעינינו
דמות פלאים של אישיות רבת-פנים ורבת-כוחות: נתגלה ה'גאון' במשמעו החדש,
שאינו רק תואר לבעל משרה מסויימת, אלא מציין את הכשרון המעולה, הכולל
והמקיף; הבא לשדד מערכות מתוך תחושה של שליחות עליונה. מלחמתו
ההרפתקנית בגאון הירושלמי (בן מאיר) בשאלת הלוח העברי; מרידתו בראש
הגולה - זה שהעלהו למעלת גאון - על פי צו מצפונו המוסרי; התכתשותו עם
הקראים ושאר כל המינים שבאו לפגוע בכבודה של היהדות, אמונת תורת חז"ל;
תרגום התנ"ך ללשון המדוברת, לערבית, וחיבור ספרים בתורת הלשון העברית
והשירה העברית; חיבור תפילות ופיוטים למאות, ומתן 'סידור' 'מדעי' ראשון
לקהילות ישראל - כל אלה אינם אלא צדדים שונים של דמות אשכולית אחת,
שנטלה על עצמה לנסח מחדש את תורת היהדות, על כלל כל המדעים שבדורו,
ולהיות 'ראש המדברים בכל מקום'.

Figure 4.26 Schocken typeface designed by Francesca Baruch. (Yardeni, 1997)


הדסה 9', יצוק על גוף 10' או על גוף 8'

האות צנועה וברורה; היא עשירת תנועות, ולמרות זאת
שקטה ויוצרת מלים המשתלבות לשלמויות. האות הדסה
היא נטולת הצורות המסולסלות וההחלושות המכערות את
אותיות־הספר המקובלות היום. יחס הקוים העבים לדקים
הוא "בריא" לקריאה, למראה, ולצורכי ההדפסה. הספרות
וסימני הפסוק מותאמות לאותיות במשקלן ובצורתן. 67

אבגדהוזחטיכךלמםנןסעפףצץקר
שת1234567890[]()?!&/"'-*:;--,.
אבגדהוזחטיכךלמםנןסעפףצץקר
שת1234567890[]()?!&/-*:;--,.

Figure 4.27 Haddasah typeface in 9pt (from specimen) and in two weights in 16pt from *'The making of hadassah Hebrew'* (Friedlaender, 1990)

became available for trade.[160] For the course of three years, Gershom Schocken repeatedly asked Monotype to provide the matrices for the sizes other than 7pt urgently. He believed that Schocken typeface would become one of the most popular Hebrew typefaces, if only all the sizes were produced.[161] In the process of adaptation to Monotype machine, Schocken commented that some of the letters are too thick and unbalanced.[162] Moshe Spitzer heavily criticised Monotype's version, stating that the characters are too condensed in effort to fit the pointing and unit values and consequently the strokes are too heavy, the counters too small and the in and out strokes are too sharp.[163]

In June 1961, a letter was sent from Firamge to the Typographical committee following a meeting he had with Lewin and Golan, printer to the Government Printing Press in Israel. In that meeting, the state of Monotype's Hebrew typefaces concerning the Israeli users came up; Firmage wrote: 'It was pointed out to me that 'Monotype' is fast becoming more important to Israeli printers, our sales in that country are certainly increasing, but due to the fact our faces are out of date there is a reluctance on the part of many who are interested in our system to place orders for machines'. Therefore, they have asked Monotype to produce the popular typeface 'Hazwi', a request Firmage supported and suggested to put in the manufacturing schedule as soon as possible.[164] The T.D.O wrote that the request to accommodate two pointed (voweled) sizes in one M.C.A is impracticable and so is arranging several unpointed sizes on the same set-size.[165] Monotype's condition to producing the typeface at standard price was that there were no restrictions on it, so it could be sold to anyone in the world who would be interested in Hebrew. The clients agreed to that and Monotype asked to receive a minimum number of orders prior to the production process, which would not end before 1965.[166] Nevertheless, as Dreyfus wrote in 1963, the progress of Hazwi

160 Unkn to Fellows, 11 December 1964, Hebrew correspondence folder, MA

161 Schocken to Quixley, 8 April 1946, Hebrew correspondence folder, MA
Schocken to Goodall, 13 July 1949 Hebrew correspondence folder, MA

162 Schocken to unkn, 11 August 1947, Schocken correspondence folder, MA

163 Moshe Spitzer, 'On our letters,' in Hed Hadfus [Heb.], The national union of print workers periodical, 10, September 1955, p.9–24

164 Firmage to Weller, 'New Hebrew face-Hazwi,' 16 June 1961, Hebrew correspondence folder, MA

165 T.D.O to Weller, 'Hebrew,' 21 July 1961, Hebrew correspondence folder, MA

166 Unkn to Firmage, 'Display matrices, Hazwi type in 16,24, 36D,' 7 March 1960, Hebrew correspondence folder, MA
Firmage to Weller, 'New Hebrew face – Hazwi,' 17 July 1961, Hebrew correspondence folder, MA
Unkn to Firmage, 'New Hebrew face – Hazwi,' 24 July 1961, Hebrew correspondence folder, MA

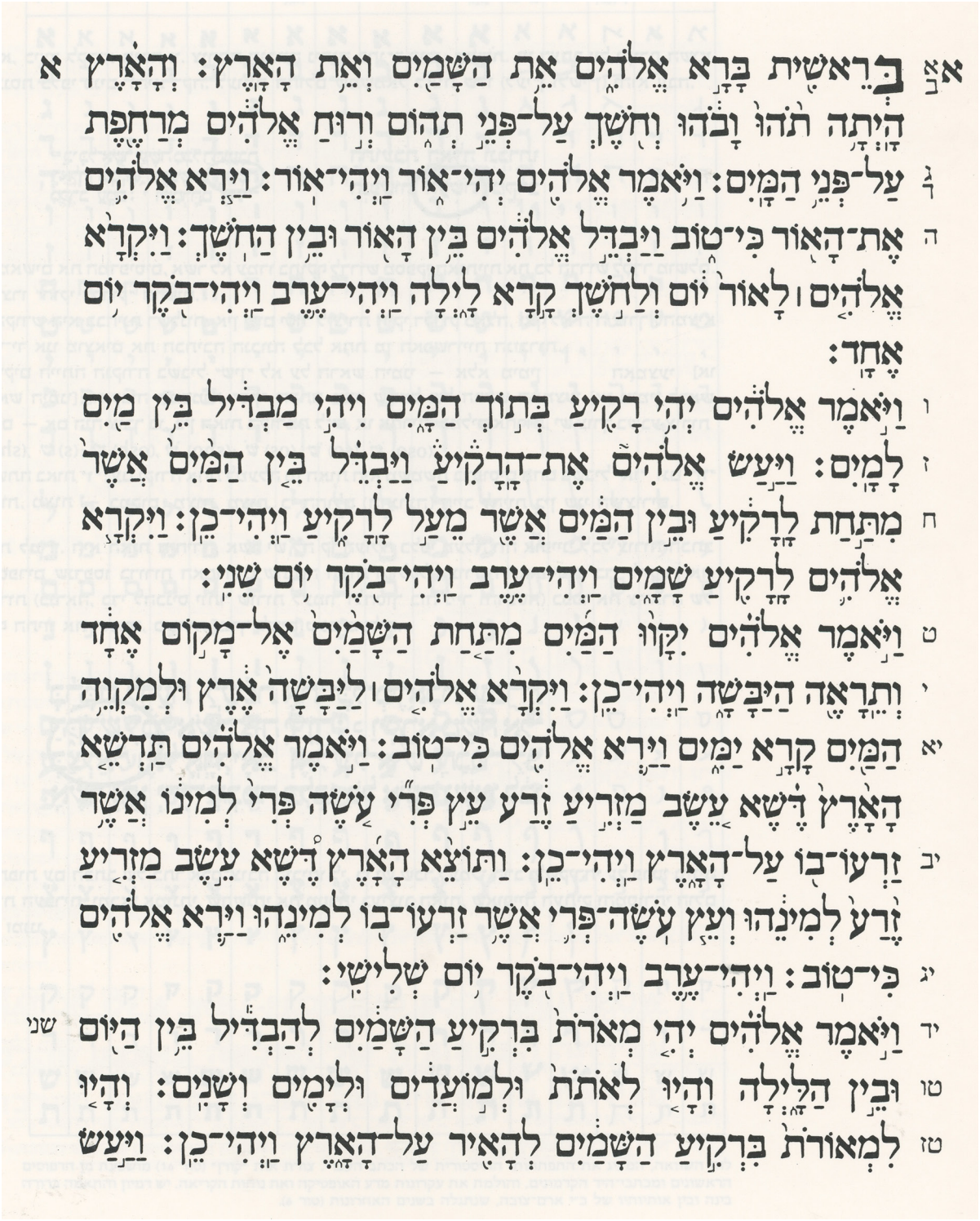


Figure 4.28 Koren typeface, designed by Eliyahu Koren and produced by Monotype.
From '*The Letter as a basic element in the design of sacred books*' (Koren, 1990)

typeface in Monotype has 'faded from the scene'.[167]

In that same letter, Dreyfus wrote that Hadassah typeface (figure 4.27, p.66), designed by Henri Friedlaender and belonged to the Amsterdam type foundry, is more favourable than Hazwi.[168] In Hadassah's public announcement, Friedlaender probably referred to Frank Rühl typeface when writing that 'Hadassah lacks the curly and weak shapes that make the book-letters used these days ugly'. He also writes that Hadassah is modest and clear, the contrast between thick and thins is 'healthy' for reading and that emphasis was made in distinguishing the letters from one another.[169] Gerrit Willem Ovink from the Netherlands claimed that 'Hadassah is establishing itself as the most influential new Hebrew, the true successor to Frank Rühl'[170] However, Lewin from Palewco in Israel was not quite sure that it would 'give the necessary enrichment to the selection of Hebrew typefaces for Monotype' and that Hadassah is not suitable for text work.[171] To that, Firmage responded that it is entirely up to Monotype to make the decision.[172]

In March 1963, Ovink informed Dreyfus that there are several requests from outside Israel for putting Hadassah Hebrew on Monotype. Although it was cut before on Intertype, he wrote that they might not veto Amsterdam foundry from granting the reproduction rights to Monotype, in case the latter is interested. Intertype didn't object Monotype cutting Hadassah for hot-metal, but did not agree about filmsetting. However, Monotype was not interested under that term.[173]

Although the phototypesetting method is beyond the scope of this essay, the search for an alternative to Frank Rühl did not stop when hot-metal typesetting days were over. Koren typeface (figure 4.28), designed by Eliyahu Koren (Korngold) was in the process of production for Monotype. In 1966, Lewin wrote to E.A Vesey, the overseas manager that Monophoto users in Israel are 'starved' for another face besides Peninim that was produced a year before. At that point – he added – they will 'take anything we can give them', and will gladly purchase Koren typeface if it would be available.[174] Following the same topic, few months after, Lewin wrote: 'The

167 Dreyfus to unkn, 8 May 1963, Hebrew correspondence folder, MA

168 Ibid.

169 A public annoncement for the publication of two types of the Hadassah letter, Jerusalem 1958.

170 Ovink to Dreyfus, 1 March 1963, Hebrew correspondence folder, MA

171 Lewin to Firmage, 14 March 1963, Hebrew correspondence folder, MA
Oppitz to Weller, 3 May 1963, Hebrew correspondence folder, MA

172 Firmage to Lewin, 18 March 1963, Hebrew correspondence folder, MA

173 Ovink and Dreyfus, 1 March-29 June 1963, Hebrew correspondence folder, MA

174 Lewin to Vesey, 16 March 1966, Koren research folder, MA

Figure 4.29 Oron typeface, designed by Asher Oron. From *'Designing a New Hebrew Typeface'* (Oron, 1990)

Monophoto users in Israel are again giving me a bad time here in connection with the variety of type faces at their disposal. All three of them claim, again and again, that they are not in a position to make money from the equipment purchased through us and you, due to the lack of variety in Hebrew typefaces… please consider my today's request as urgent, for I fear that any further business with Monophoto machines in Israel will depend on our ability to supply more typefaces in Hebrew'.[175] The Rights of Koren were licensed from Deberny & Peignot foundry and two weights were produced for filmsetting in 1970.

In June 1967 Horace Hart from Lanston Monotype Company in New York sent John Dreyfus a letter in which he described a meeting he had with Ismar David and the latter's opinion that there is a need for a modern Hebrew face with points. Lanston did not take his offer for 'David' typeface designed by him, but suggested that Monotype Corporation might be interested. No reply to this letter was found, but David typeface was not produced for Monotype.[176]

In October 1967 the Israeli designer Asher Oron wrote a letter to Monotype, suggesting his typeface 'Oron' which was designed as an Hebrew equivalent for 'Univers' (figure 4.29). Oron listed the benefits of this new typeface as a modern versatile family, along with comments regarding the existing Hebrew typefaces. He was deeply unsatisfied with the typefaces available to the Hebrew printer; according to him there is no font that is available in more than one weight for both text and display sizes.

He related to Frank Rühl as 'a very old typeface' and mentioned that it's the only typeface that is available in both machine and hand composition, and even it has only one weight (at the time). He was also unsatisfied with 'David' and 'Narkiss' typefaces and dismissed them as being variations of the old style Hebrew and more calligraphic than modern. He also stated that the different weights in David cannot be used together because the heavy weights seem smaller.

On behalf of the Israeli designers and printers he details two needs; the first is the demand for modern letterforms following trends from Europe and the United States. The second is the growth of bilingual printing matters, which combine Hebrew and another writing system.[177]

After receiving this letter, Monotype turned to Lewin and asked him to find information about Asher Oron.[178] Lewin writes back and adds that this new typeface was not seen yet by Monotype users in

175 Lewin to Vesey, 15 June 1966, Koren research folder, MA

176 Hart to Dreyfus, 21 June 1961, Hebrew research folder, MA

177 Oron to unkn, 17 October 1967, Hebrew correspondence folder, MA

178 Unkn to Lewin, 24 October 1967, Koren research folder, MA

Israel, but 'they would probably insist on the immediate production of these matrices on film or on metal'.[179] Despite this positive comment, on November A.C. Marshall from the overseas department wrote to Oron that even though the extension of Univers typeface is a matter that interests them – 'Unfortunately the market for new Hebrew types is of necessity rather restricted. Fine Hebrew types have been made in the past by this Corporation, but none have lived up to the anticipation of their designers'. Moreover, he mentioned that soon Koren typeface will be made available and it would be unwise to manufacture another Hebrew face.[180] Oron typeface was therefore rejected.

The search for an alternative typeface to Frank Rühl still continues and will probably still continue in the future. In Spitzer's article 'The Development of Hebrew Lettering' from 1974 he wrote: '…without belittling the advance represented by the new Frank Rühl letters, our own daily experience both as printers and readers has, nevertheless, taught us that they cannot comply with the demands of our developing taste and conceptions in respect of the Hebrew letter, in view of the new tasks emerging to confront the Hebrew printer in our own times'.[181]

179 Lewin to Vesey, 15 December 1967, Koren research folder, MA

180 Marshall to Oron, 're: Proposed new Hebrew designs,' 13 November 1967, Koren research folder, MA

181 Moshe Spitzer, 'The Development of the Square Letter,' In A Letter is forever, Moshe Spitzer, editor. Jerusalem: Israel Ministry of Education and Culture, 1990, 2nd edition, p.42

Figure 5.2 The characters shown are taken from the text shown on Berthold catalogue, mostly in display sizes. Not all letters in all sizes appear as the value of this image is by comparing features in chosen characters rather then presenting them all. The letters were matched in height despite their different sizes for a better letterform comparison. (Berthold, 1924)

5. Comparing Frank Rühl and Peninim

Much of the T.D.O's work involved adaptations of existing designs to fit the Monotype machines. The work was rather technical and less creative than designing a typeface. The 'Drawing Clerks' were interpreting the original designs, sketching freehand with an imperfect enlarged model of the original design. Much of the work consisted modifying the design to fit the unit apportionment.[182]

The '10 inch' type drawings were the masters which the copper patterns – followed by the punches and the matrices – were produced from. Their sizes were larger but more accurate than drawings in different companies.[183] The drawings were made with french curves and straight edges, with the purpose of maintaining consistency of stroke weights and curve configuration among all characters of the typeface.[184] The criticism to the translations was that they over-simplified and over-regularised the designs.[185] Updike and others said that the modifying is eliminating 'the slight irregularities which the human eye and hand always leave in manual work'.[186]

5.1 Frank Rühl compared to itself

In order to compare the original Frank Rühl typeface with Monotype's Peninim, it is useful to first compare Frank Rühl with itself in different sizes. The typeface as appeared in Berthold's Hebrew catalogue, consisted of a wide range of sizes from 6 point to 16 cicero[187], most of them cut in metal and the large sizes in wood. Figure 5.1 (p.76) presents the available sizes as shown in C.F. Rühl and Berthold's specimen.

In Berthold's original version the differences can be spotted best in the large sizes, mainly because the ink spread does not significantly influence the letterforms as in the small text sizes.

The overall shapes of the display sizes, seen in figure 5.2, are naturally more ornamented with more pronounced features than

182 David Saunders, 'Two decades of change: 1965 – 1986,' in The Monotype Recorder, One hundred years of type making, 1897–1997. New series no. 10, 1997, p.30

183 Ibid., 32

184 Southall, 'Printer's type in the twentieth century,' 28

185 Idib., 32

186 Tracy, 'Letters of credit,' 38

187 About 192pt. One Cicero unit is 12 points Didot.

Size	Berthold unpointed	Berthold pointed	C.F. Rühl	C.F. Rühl pointed
6pt	✳	✳	✳	✳
7pt	✳	✳		
8pt	✳	✳	✳	✳
10pt	✳	✳	✳	✳
12pt	✳	✳	✳	✳
14pt	✳		✳	✳
16pt	✳		✳	✳
20pt	✳			
24pt	✳		✳	
28pt	✳		✳	
36pt	✳			
48pt	✳			
72pt	✳			
8cicero	✳			
12cicero	✳			
16cicero	✳			

Figure 5.1 The figure presents available sizes for Frank Rühl typeface in C.F. Rühl and Berthold type foundries. (C.F. Rühl 1910, Berthold 1924)

Figure 5.3 Comparison of Frank Rühl (right) and Peninim (left) in text. Both taken from 14pt, while the top pair is in 100% size, in the bottom example Frank Rühl was matched in height to Peninim. Contrast and spacing are different. (Frank Rühl – Berthold, 1924. Peninim – Non-Latins catalogue)

the smaller sizes.[188] Higher contrast, sharp joints and stroke endings are distinguishing characteristics of the large sizes, especially in the wood type. Note the *Alef*, and its contrast differences mostly between the 10pt and 72pt, the right arm linking to the main diagonal stroke each time in a slight different way. The middle stroke of the *Peh* demonstrates the ornamented art nouveau style very well and all display sizes show to some extant a more detailed and curved-out shape than in the text sizes. The 'hook' shape in the *Yod* also differs from size to size, thinning up and becoming more rounded as the size grows, in addition to the character being widened. Also in the larger sizes, particularly in the wood type, the concave shape in the top part of the *Mem* becomes deeper and the letter itself is sharper.

The so-called 'Serifs' referring to the instrokes are chunkier and more rounded in the smaller sizes, but in contrast the gentle curves in the right stroke of the *Shin* are more pronounced in them. Compared with the large sizes, the left leg of the *He* has more emphasised in and out stokes in the 10pt and 14pt, which is opposite from the usual case of exaggerated features in the display sizes. The upper-right corners which are normally identical in one letter are different[189] in this original version, becoming sharper as the size grows; notice the *Peh* for instance.

The *Bet* can be used as a good example where minor changes between the small and large size create an overall different appearance. Usually, the bottom stroke is either aligned to the top stroke or extends to the left beyond it, as seen in the small sizes. However, in the 72pt and 8cicero, the top bar is the one expanding, creating a change in balance. Other altering features in the *Bet* are the right side tail's changing length, the straight instead of diagonal calligraphic end of the bottom stroke and the triangular or round bottom joint of the vertical stroke with the horizontal bar.

The differences between the text and display sizes are easily noticed, and it is interesting to check how they were translated to the Peninim typeface.

5.2 Peninim with Frank Rühl

In comparing the original version of Frank Rühl and Peninim the general letterforms remained similar, and it can be noticed that the T.D.O was making an effort in trying to minimise the modifications in

188 It is intentionally not written 'text sizes' as the differences can be seen also in the smaller display sizes.

189 Two kinds of those corners can be seen in especially in Hebrew 'Serif' typefaces: one more rounded than the other. However, this part relates to the changing corners within one letter in different sizes.

Figure 5.4 Comparison of Frank Rühl in 8pt and series 217-7pt. Pink presents differences in the letters whereas blue shows differences in vowel point.
(Frank Rühl- Berthold, 1924. Peninim – Non-Latins catalogue) [400%]

most letters. Tamari states that Monotype's version has unambiguous improvements in the typeface such as consistency in stroke thickness and refined stroke endings[190]. However, many specific differences should be mentioned. To begin with, when comparing blocks of text as shown in figure 5.3 (p.76), it is noticeable that Peninim is spaced more generously than Frank Rühl, the colour is a bit lighter and the letters maintain more uniform shapes. In addition, the contrast in Peninim becomes lower than in the original, as can be seen especially in the *Yod* and *Vav*.

Each point size was drawn from scratch, always being based on an existing size either from the same series or from Frank Rühl. In this section, the original typeface shown in Berthold's catalogue was compared separately with the two basic series of Peninim. Frank Rühl (pointed) in 8pt size was viewed with 217-7pt, chosen due to being the first Peninim size produced and the one which the other sizes were drawn from.[191]

While looking at figure 5.4 comparing Frank Rühl 8pt with 217-7pt, width variations in Peninim can be noticed due to the limitation of only two unit widths of characters in series 217; letters like *Shin* and *Nun* were narrowed whereas the *Dalet*, *Lamed* and *Kaf* were widened. The *Ayin* and *Zade* were widened as well and therefore their diagonal arm became more moderate. It is unclear exactly how the Frank Rühl characters looked because of inkspread, but it appears as attempts were made in Peninim to prevent black spots in printing, and consequently the weight in the joints was reduced as well as changing the bottom-right corner's shape.

The corner shapes are becoming rounder and smoother in Peninim *(Peh)*. The ascender in the *Lamed* was shortened, the tails of the *Bet* and *final Mem* (top left) became more defined and angled. As mentioned, it is likely that the lack of the original punches prevented understanding of the original forms, but it does appear unusual that the left end stroke of the *Tav* is rather straight as opposed to the other end strokes (e.g., *Kaf*, *Peh*). The *Samech*, which its round shape is an identifying character of Frank Rühl, becomes even rounder in Peninim.

In hand setting type, positioning the vowel points[192] was more challenging than Monotype's ready made system based on unit widths. Hence, in Frank Rühl cases of wrong positioning can be seen in the *Qof* for intstance, when the Patach is not beneath the letter

190 Tamari, 'Hebräische Schriftgestaltung in Deutschland,' 493

191 According to the production folder Frank Rühl in 9pt was used as a base for 217-7 but only 8pt or 10pt appear in the specimens. Therefore the 8pt was taken for this comparison as the closest in height to 217-7.

192 Whenever possible, letters with similar vowels were chosen for the comparison in order to spot the differences in both typefaces.

Figure 5.5 The image shows problems of vowel point locations in Frank Rühl 8pt. (Berthold, 1924) [400%]

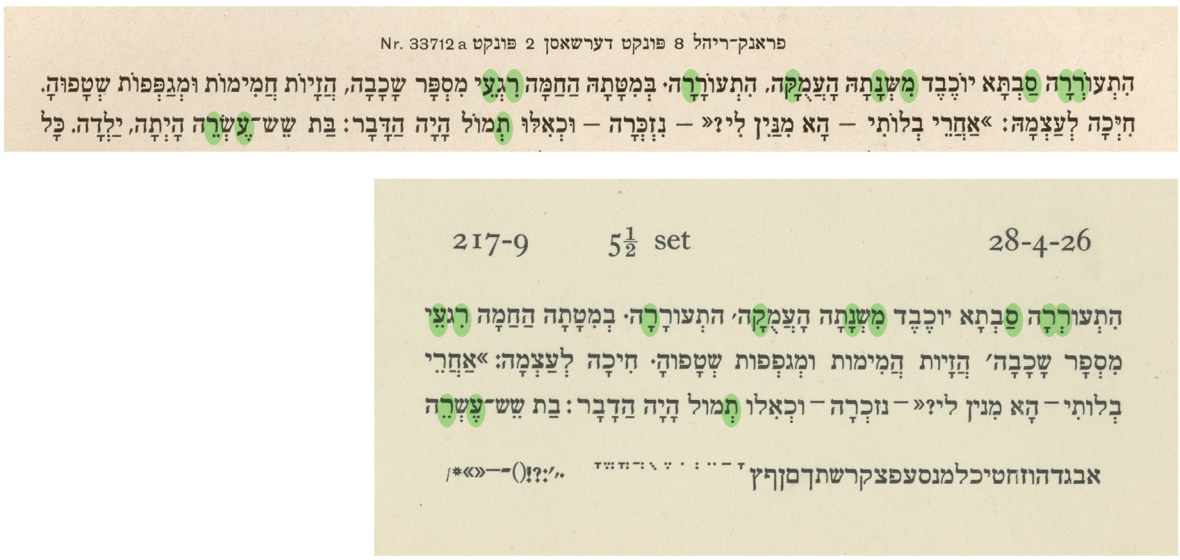


Figure 5.6 The same text was found in both Berthold and Monotype's specimens. Frank Rühl at 9pt and Peninim 217-9pt present the differences in positioning of points in the two typefaces.
(Frank Rühl – Berthold, 1924. Peninim – Non-Latins catalogue)

but too far to the right. Compared to Peninim, The Patach in Frank Rühl was shorter. Similar cases appear in the *Ayin's* version with the descending leg which will be discussed later, and might be the reason for the alternative form. In Frank Rühl's *Vav*, the Holam should be located above the *Vav*, as was corrected in Peninim. More examples of pointed words in both typefaces can be seen in figures 5.5 and 5.6. Without describing in great detail, the vowel point system in Monotype was not perfect as well, and vowels were not always balanced with the letter.[193]

In order to compare series 220 with Frank Rühl, as seen in figure 5.7 (p.82), it was decided to use size 8pt of Frank Rühl (unpointed) with 220-7pt of Peninim, both similar in height even though the 7pt was not the first size produced in series 220. This allows observing one modification step further from the original.[194]

Unlike the adaptation for series 217, the widths of 220 stayed rather similar. The tail of the *Bet* is shorter in 220, and same applies to the *Yod's* hook which is even a bit too short. The outstroke of the *Qof* is a slightly different in Peninim, allowing more space between the two strokes. More pronounced curves are present in the *Gimmel* and *Tet* of series 220. The *Lamed* has a slight different flag and is rounder and softer than the original version. Furthermore, during the transformation, the *Tav* and *Shin* lost some of their sharp details. The same modifications as in 217 were applied in the *Zade* and *Ayin*, with the latter having a completely different bottom stroke and arm.

In the display sizes presented in figure 5.8 (p.82), less has changed, probably due to the better prints of large sizes, allowing to draw letters more accurately and because less thought was put in fitting the design for reading in small sizes. The sizes used were both 24pt.[195] The *Lamed's* ascender is shorter and curvier in Peninim and the *Yod's* hook is heavier. The *Vav* and the *Resh* gained a slight arch in Peninim and in the *Tav's* left leg a different curve is introduced.

In the original version of Frank Rühl both in C.F. Rühl and Berthold specimens, two versions of the letter *Ayin* appear; one with a flat base and one with a descending leg. In pointed texts, the *Ayin* with the flat base was preferred, so it wouldn't collide with the vowel points and cause leading problems. In the unpointed typeface no rule is apparent, and the *Ayin* could have either a descending leg or a flat base, many times with both versions in the same paragraph (figures 5.9-5.11, p.83).

193 For further reading about positioning of vowel points see Koren, 'The Letter as a basic element in the design of sacred books' 85–90

194 220-7pt was designed from 220-6, which was designed from Frank Rühl in 6pt.

195 Those were the choices according to similar letter height. However, in the production folder it was stated that the design of 220-18 was made proportionally from Frank Rühl 24pt.

Figure 5.7 Comparison of Frank Rühl in 8pt and series 220-7pt.
The markings present the differences in the letters.
(Frank Rühl – Berthold, 1924. Peninim – Non-Latins catalogue) [400%]

Figure 5.8 The image shows comparison between Frank Rühl and series 220,
both in 24pt. The differences are fewer that in text sizes.
(Frank Rühl – Berthold, 1924. Peninim – Non-Latins catalogue) [200%]

Figure 5.9 Different forms of *Ayin*, matched in height for a better letterform comparison. Right: Frank Rühl 14pt [300%], left: Peninim 220 in 14pt [250%], 7pt [550%]

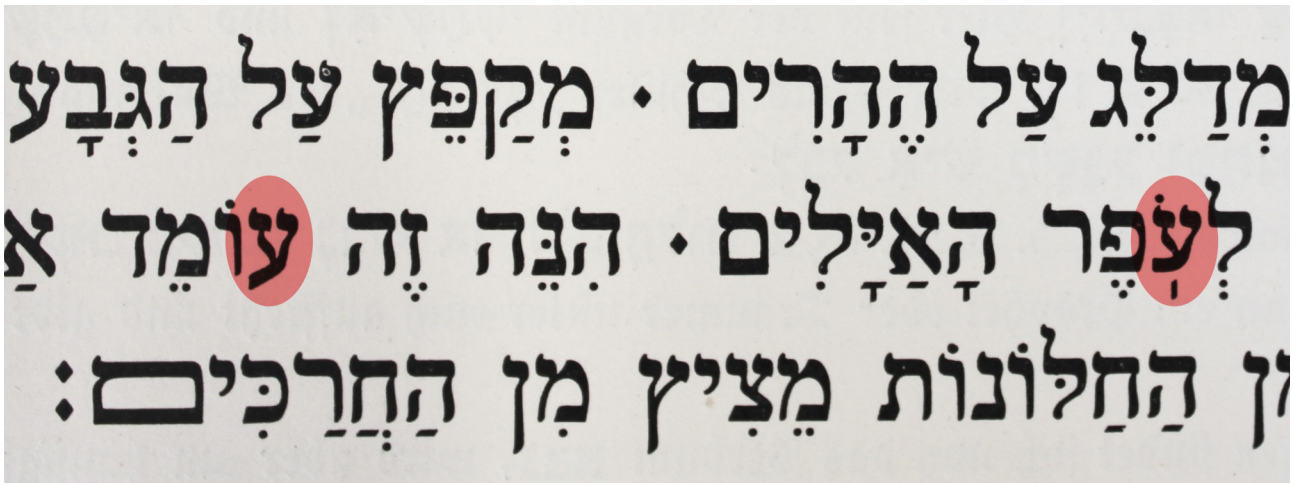


Figure 5.10 Two forms of *Ayin* appear in the same paragraph in Frank Rühl specimen in 14pt. (C.F. Rühl, 1910) [200%]

Figure 11 Two forms of Frank Rühl *Ayin* appear the ornamented design examples shown in Berthold's Hebrew catalogue. (Berthold, 1924)

Figure 5.12 Punches of 217-7 present the two forms of *Ayin* cut. Each punch's surface is 5mm. (Type Archive, London)

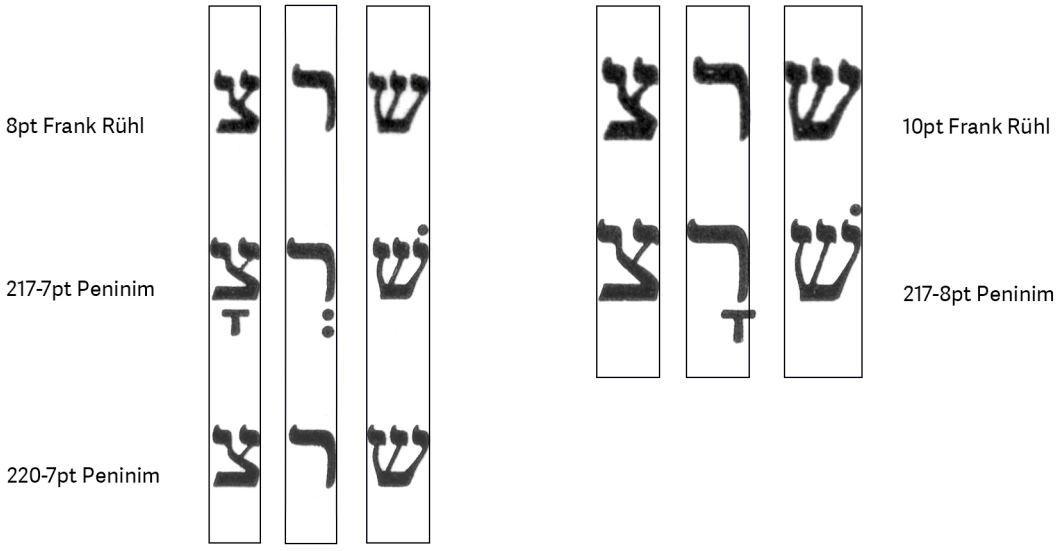


Figure 5.14 The figure shows comparison of three character widths: *Resh*, *Shin* and *Zade* in series 217, series 220 and Frank Rühl in text sizes (8pt, 7pt, 10pt) (Frank Rühl – Berthold, 1924. Peninim – Non-Latins catalogue) [400%]

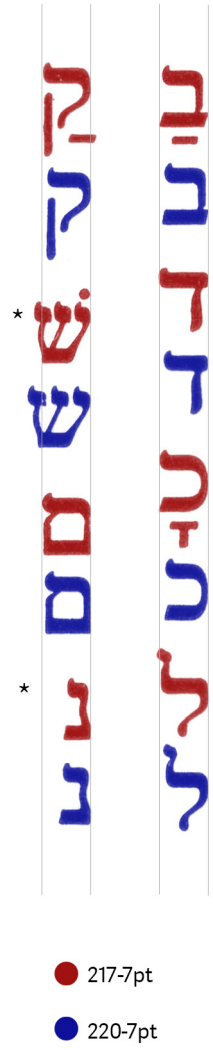


Figure 5.15 The figure presents comparison of character widths in series 217 and 220 in 7pt. The marked letters are narrower in series 217 whereas the rest are either equal of wider than 220. (Peninim – Non-Latins catalogue) [400%]

In both the pointed and unpointed series of Monotype's Peninim, even though punches were made for both kinds of *Ayin* (figure 5.12) only the flat based appears in the specimens and M.C.As and the descending *Ayin* is not regarded as an alternate like the folded *Lamed* which will be discussed later in the essay. Perhaps it was requested specifically by costumers, but it seems like it was more convenient for Monotype to cast the flat based *Ayin* for technical reasons.

5.3 Peninim with itself

While looking at the '10-inch' type drawings[196] of the letter *Peh* in the text sizes of series 217 (figure 5.13, p. 86) it is noticeable that the larger the size – the narrower the letter becomes. The limitation of fitting all the characters to either 9 or 18 units defined some changes in letter proportion, and the fact only two widths were possible resulted in those being at times forced, as in the case of the too-narrow *Shin* or the widened *Resh* and *Zade* (figure 5.14). Further character width comparison of series 217 and 220 can be seen in figure 5.15.

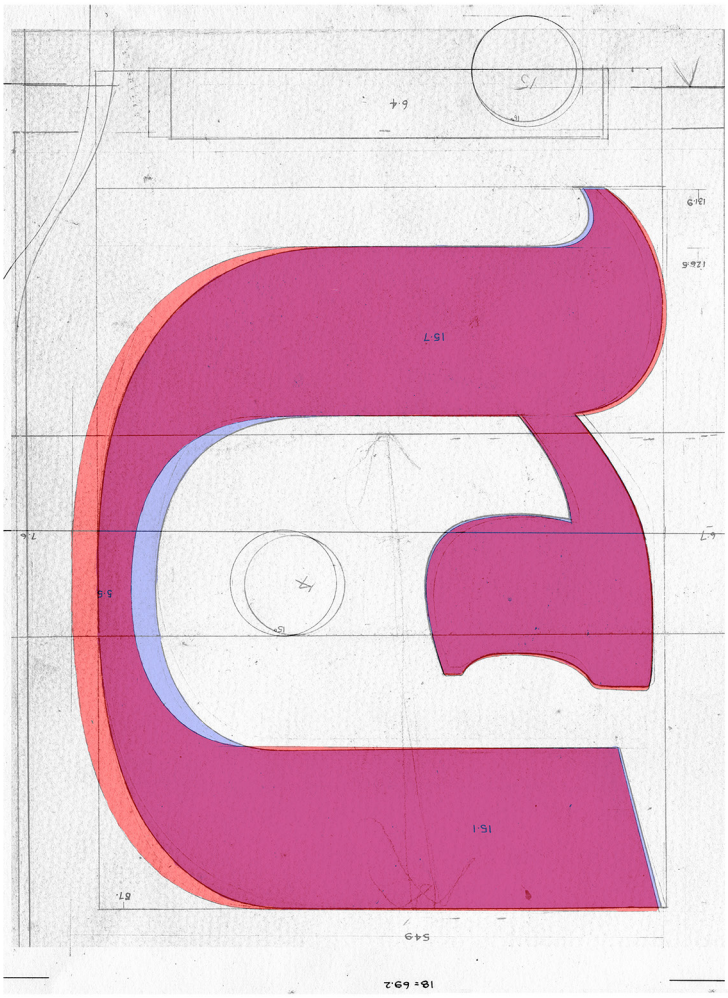
The overall appearance of 217-8pt is much lighter than the 7pt, which was made earlier (figure 5.16, p.87). Coakley states that 'certain quirks in the design become more noticeable' in the *Ayin* and *Nun*.[197]

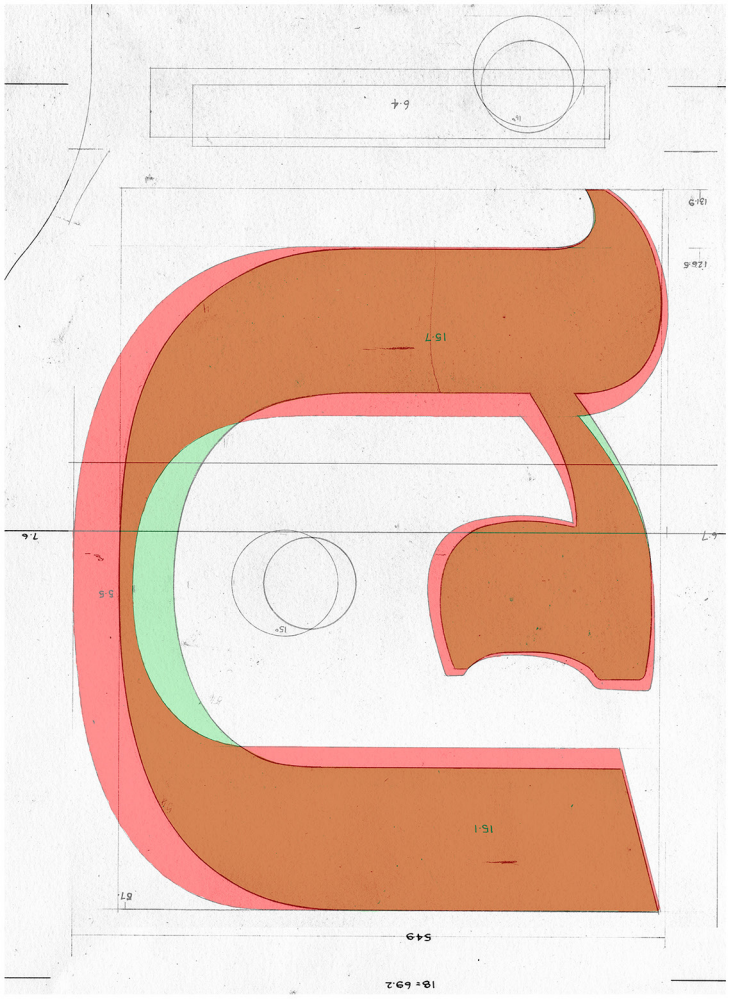
Because the vowel points in series 217 had to be positioned well under the letters, each mark was drawn and produced in both 9 and 18 units (figure 5.17, p.88). Finding the differences between the two widths is possible by looking at a Hebrew font scheme (figure 5.18, p.88). In a printed specimen it is somewhat difficult to distinguish between the two vowel units because only the naturally wide marks appear different, but the two versions of the *Zeire* in figure 5.19 (p.88) can be used as an example.

In the case of series 220, display sizes were also offered. Having display and text sizes created a larger, more varied series than in series 217 which includes only text sizes. As can be seen figure 5.20 (p.90), the major differences within the letter *Lamed* occur in text sizes and less changes exist in the display sizes. In the drawings, two forms of the *Lamed* were cut, which were both available for costumers. The initial form between the two is with the ascender pointing straight up, although being shorter then the original Frank

196 The 10-inch drawings show a clear idea of the design without the inkspread which thickens the strokes and can be rather blurry at times, and therefore preferred for comparing when possible.

197 J.F Coakley, 'The Hebrew types of the Jericho Press: a specimen with notes.' Ely: Jericho Press, 2010, p.7

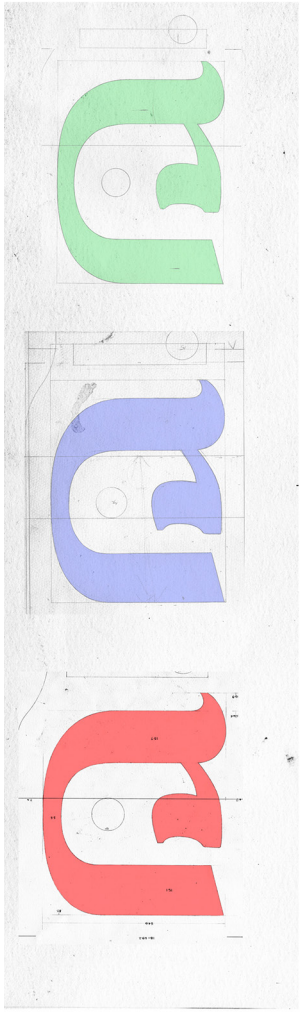




217-11tpt

217-9pt

217-6pt



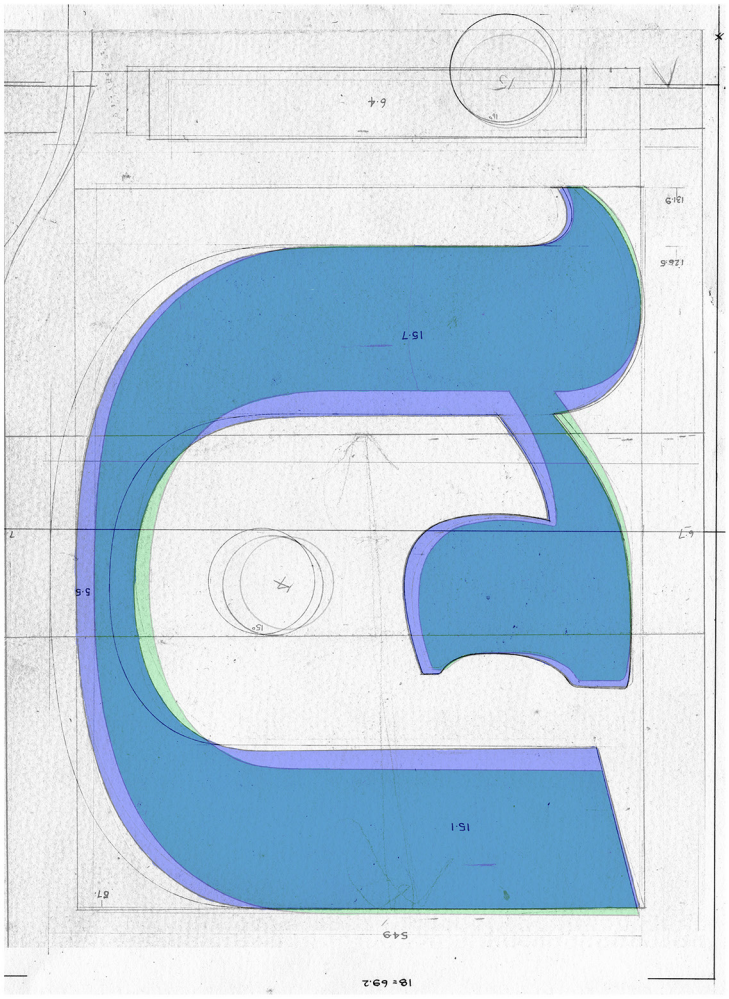


Figure 5.13 Differences in three 10-inch drawings of the letter *Peh* from series 217 in 6pt, 9pt and 11pt, scaled to the same size. (MA, Salfords) [50%]

Figure 5.16 Full size comparison between series 217 and 220. 220-7pt is [500%] and the rest matched in height for a better letterform evaluation. (MA, Salfords)

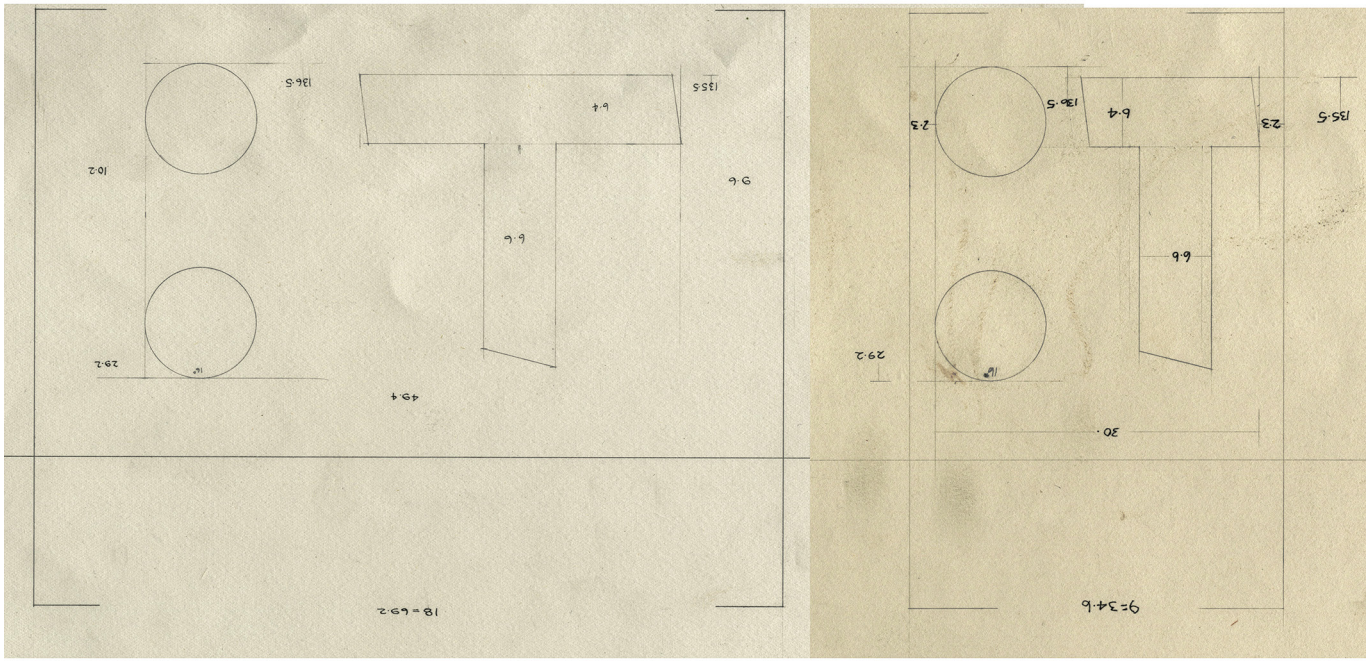


Figure 5.17 The vowel mark Hataf Kamaz of 217-6pt is shown in 9 and 18 unit widths. (MA, Salfords) [50%]

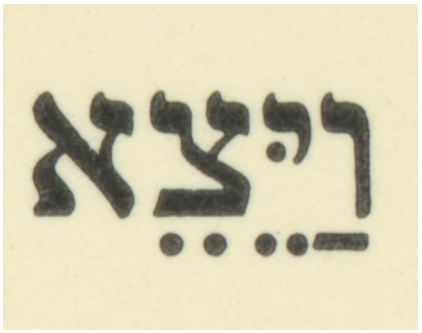


Figure 5.19 One word with two widths of *Zeire* vowel mark from 217-7pt. (Peninim – Non-Latins catalogue) [800%]

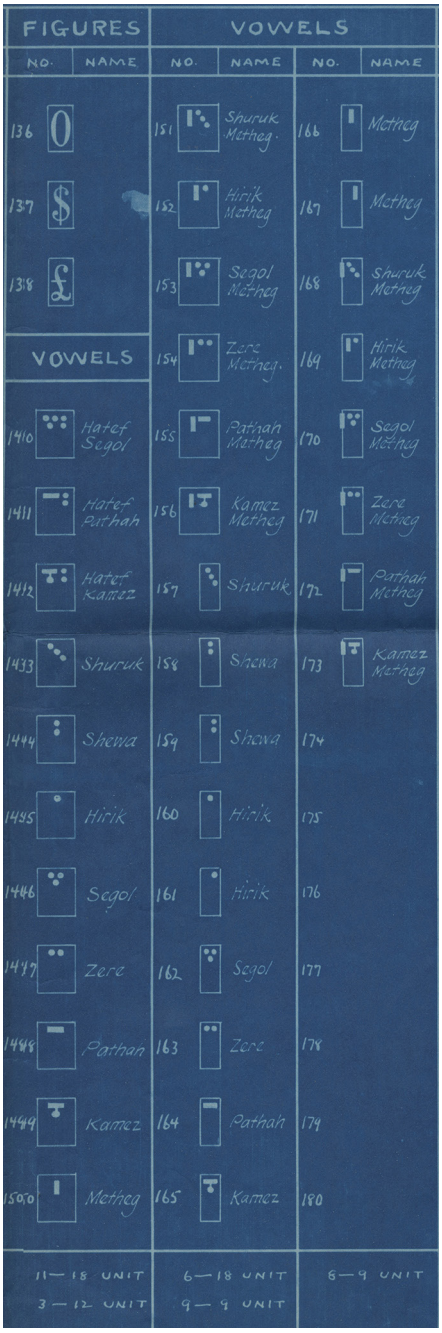


Figure 5.18 Part of the Hebrew font scheme showing the vowel marks in two widths. The complete font scheme can be seen in Appendix F. (MA, Salfords) [50%]

Rühl. The other version of the same part 'folded' to the back was a kernless alternative offered to costumers, its shape was borrowed from Linotype and old fashioned typefaces.[198] The shape which is rather odd and not fitting the rest of the design[199] was not preferred among clients and was not even shown in specimens.[200] However, the two forms can be found in the punch boxes of series 220 and 217 (figure 5.21, p.91) and as alternates outside matrix cases such as the popular M.C.A 4481 (figure 4.12, p.52)

The *Yod* is the smallest character in the Hebrew alphabet, it is hung from the Mem-height[201] in a hook shape and is not touching the baseline. In designing it, one must be aware that it is not too long – as it might be confused with *Vav*, or too short because it will disappear in small sizes. The T.D.O was making different choices for series 220 in 6pt and 7pt (figure 5.16, p.87). 220-7pt was based on the design of the previously drawn 6pt, with the shortening of the *Yod's* hook. Apparently the alteration did not prove successful because in the other sizes followed, the *Yod* is rather similar to the first produced 6pt. However, there is a modification in the display sizes: the *Yod* is less rounded, the hook curls less into the centre and the strokes become heavier, especially the thin part which is chunkier (figure 5.22, p.92).

In trying to find the regularity of character width, four sizes of the letter *Ayin* were matched in height and placed together. Apart from the evident fact that the smallest size characters – the 5pt are the widest and the display size characters – the 18pt are the narrowest, no order can be noted (figure 5.23, p.93). Perhaps, the exact width of the character wasn't very important during the drawing process and the clerks could freely draw optically similar shapes, and it was the overall texture and proportions that mattered the most. Usually, the proportions were slightly modified from size to size, as can be seen clearly in the widening of the smallest point sizes of Peninim typeface: 220-5 and 217-6. In contrast, the display sizes were often narrower. Other characters in all sizes of Peninim can be seen in figure 5.16.

The *Shin* is an interesting letter to note, as it is the widest character in the Hebrew alphabet and therefore was one of the most modified letters. In comparing series 217 and 220 both in 9pt, it is evident that the *Shin* in 217 is narrower (figure 5.24, p.94). Another example can

198 Idib.

199 According to Koren, the Lemed was 'folded' in order to decrease the leading and consequently save paper.
Koren, 'The Letter as a basic element in the design of sacred books,' 89

200 Monotype's specimens showing Hebrew were only found as part of the non-Latins catalogue.

201 The Hebrew equivalent to x-height.

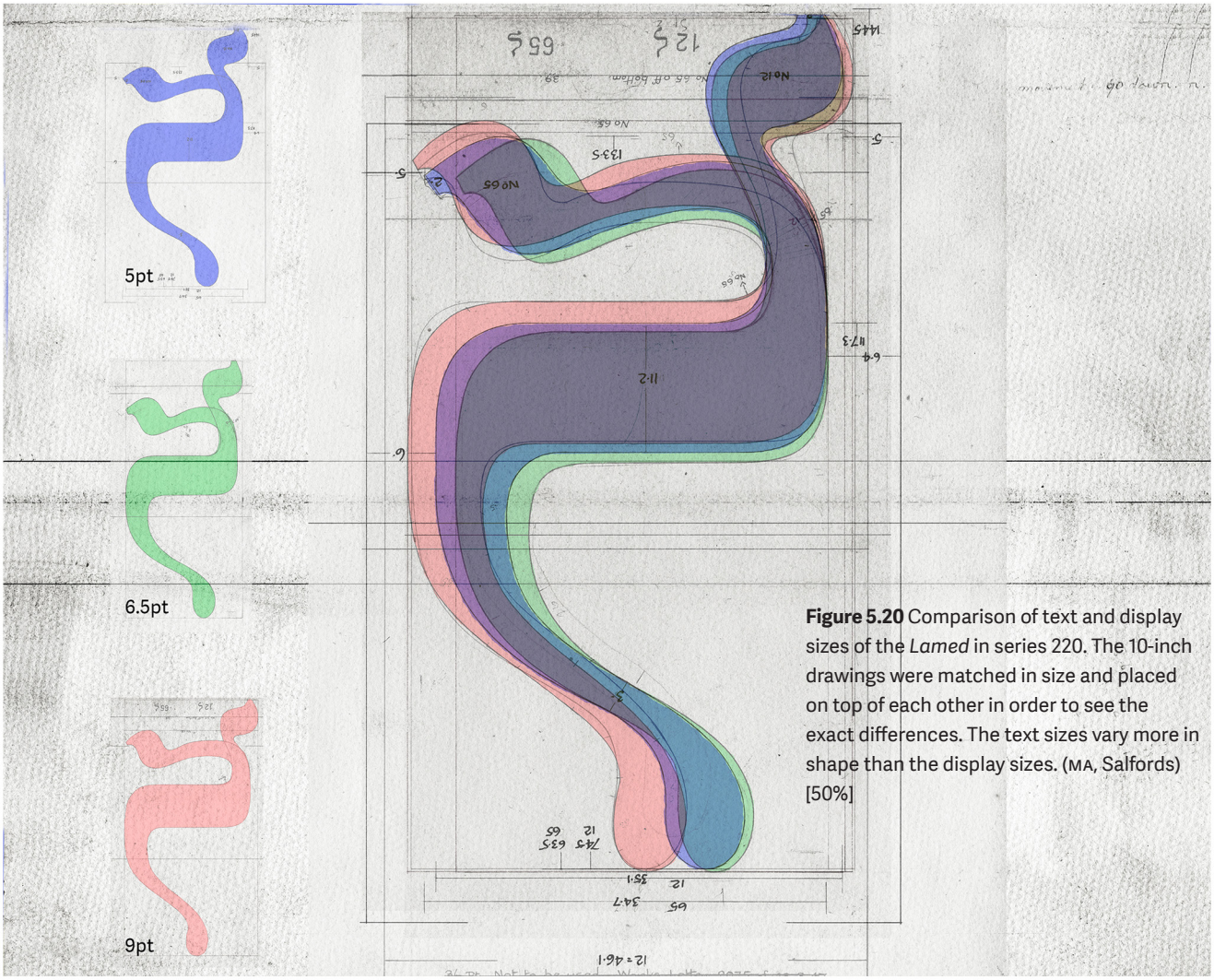
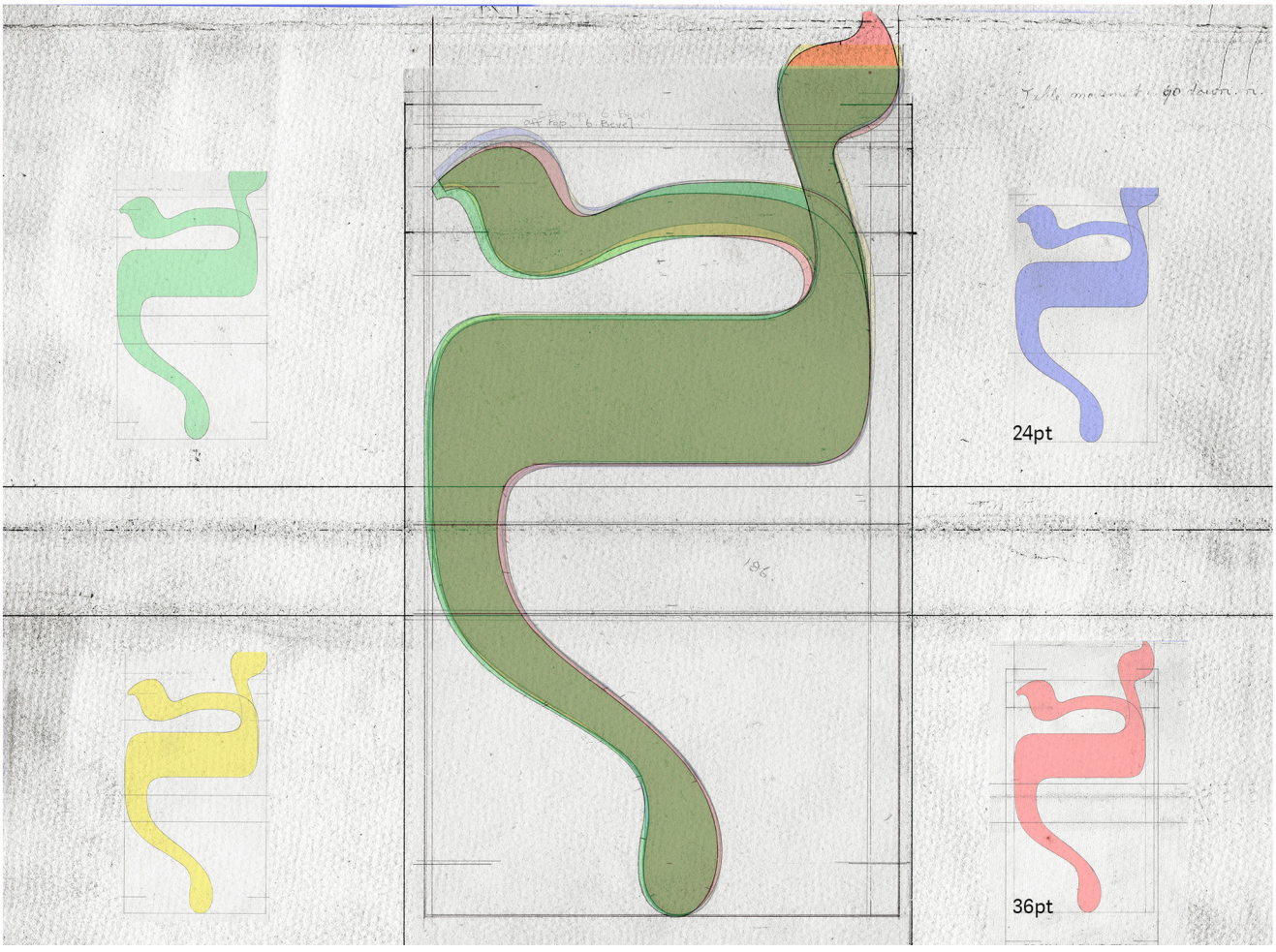


Figure 5.20 Comparison of text and display sizes of the *Lamed* in series 220. The 10-inch drawings were matched in size and placed on top of each other in order to see the exact differences. The text sizes vary more in shape than the display sizes. (MA, Salfords) [50%]



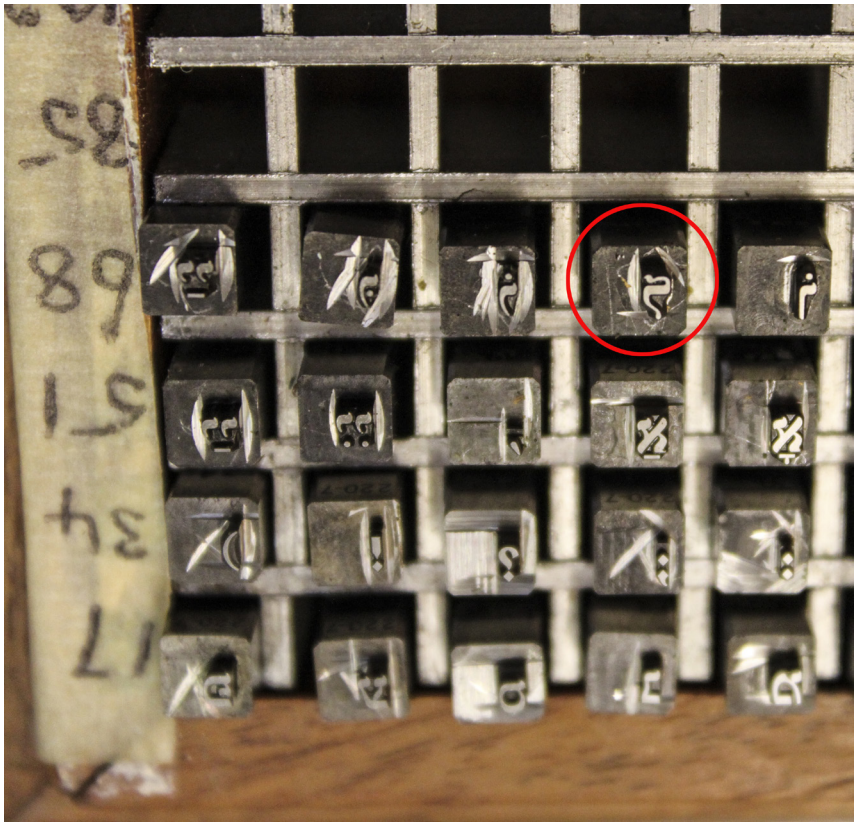
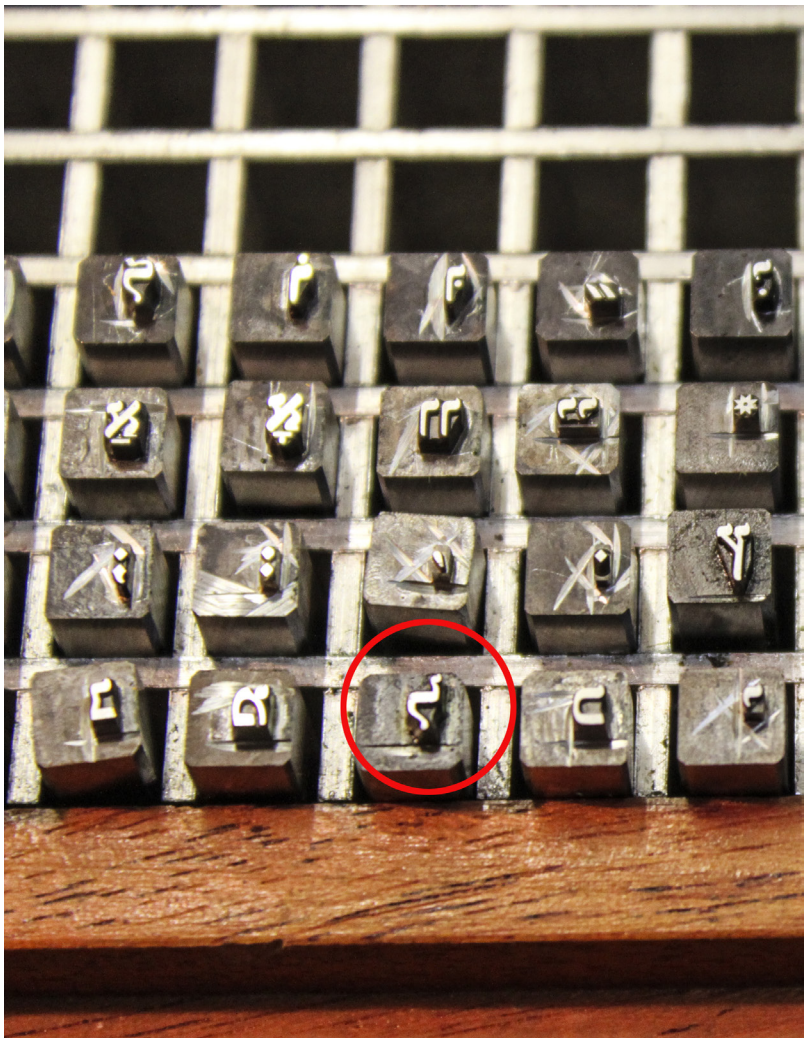


Figure 5.21 Punches of 220-7pt & 8pt present the two forms of *Lamed* available for costumers. (a) regular form, (b) 'folded' form. Each punch's surface is 5mm.
(Type Archive, London)



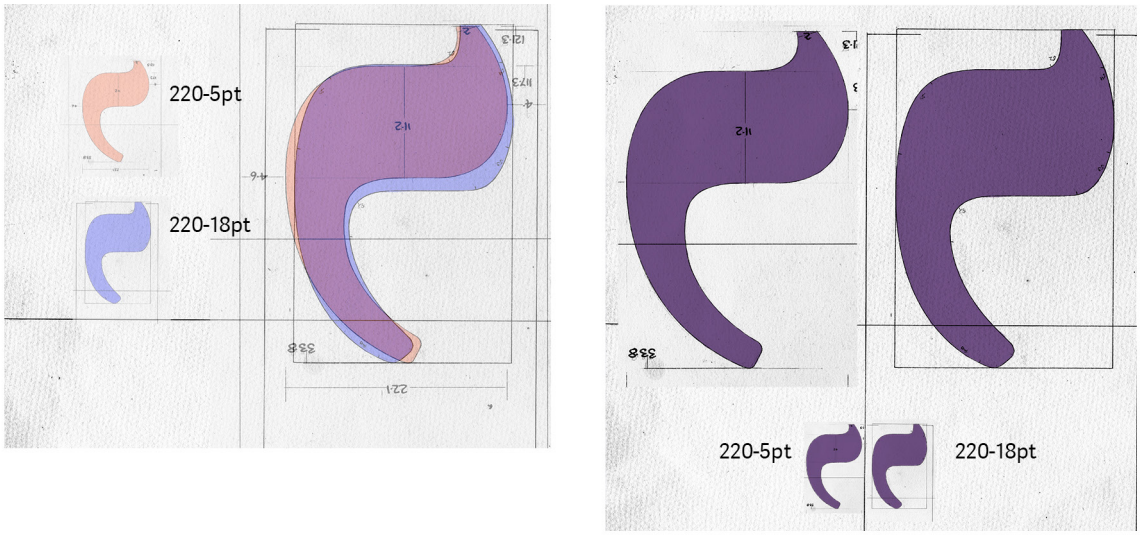


Figure 5.22 Comparison between *Yod* in text (5pt) and display sizes (18pt) in the 10-inch drawings of series 220. Both matched in height for a better letterform comparison.(MA, Salfords) [30%]

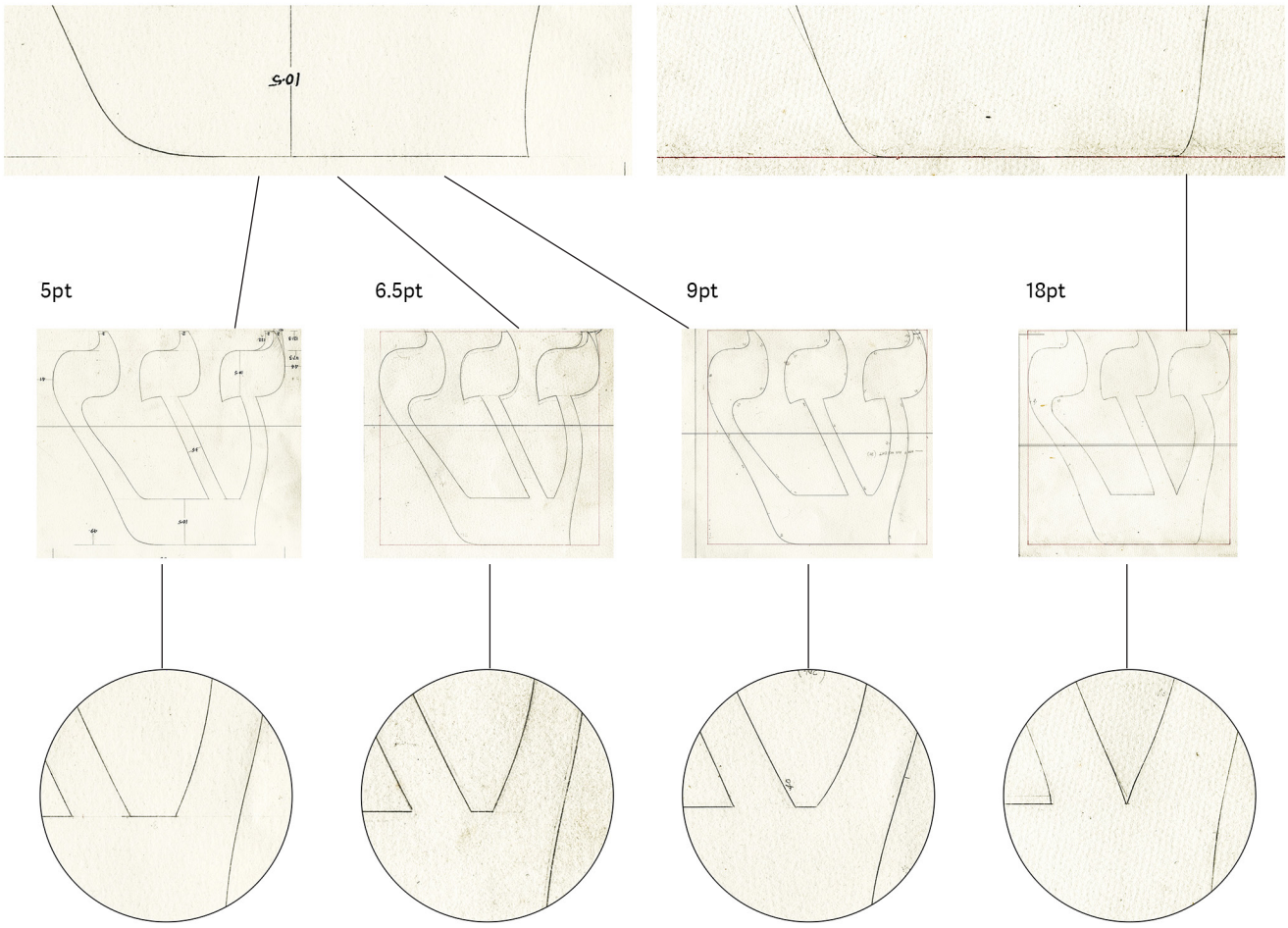


Figure 5.27 The figure shows the differences in the joints of the *Shin* within different sizes of series 220. The characters were matched in height for a better detail comparison. (MA, Salfords)

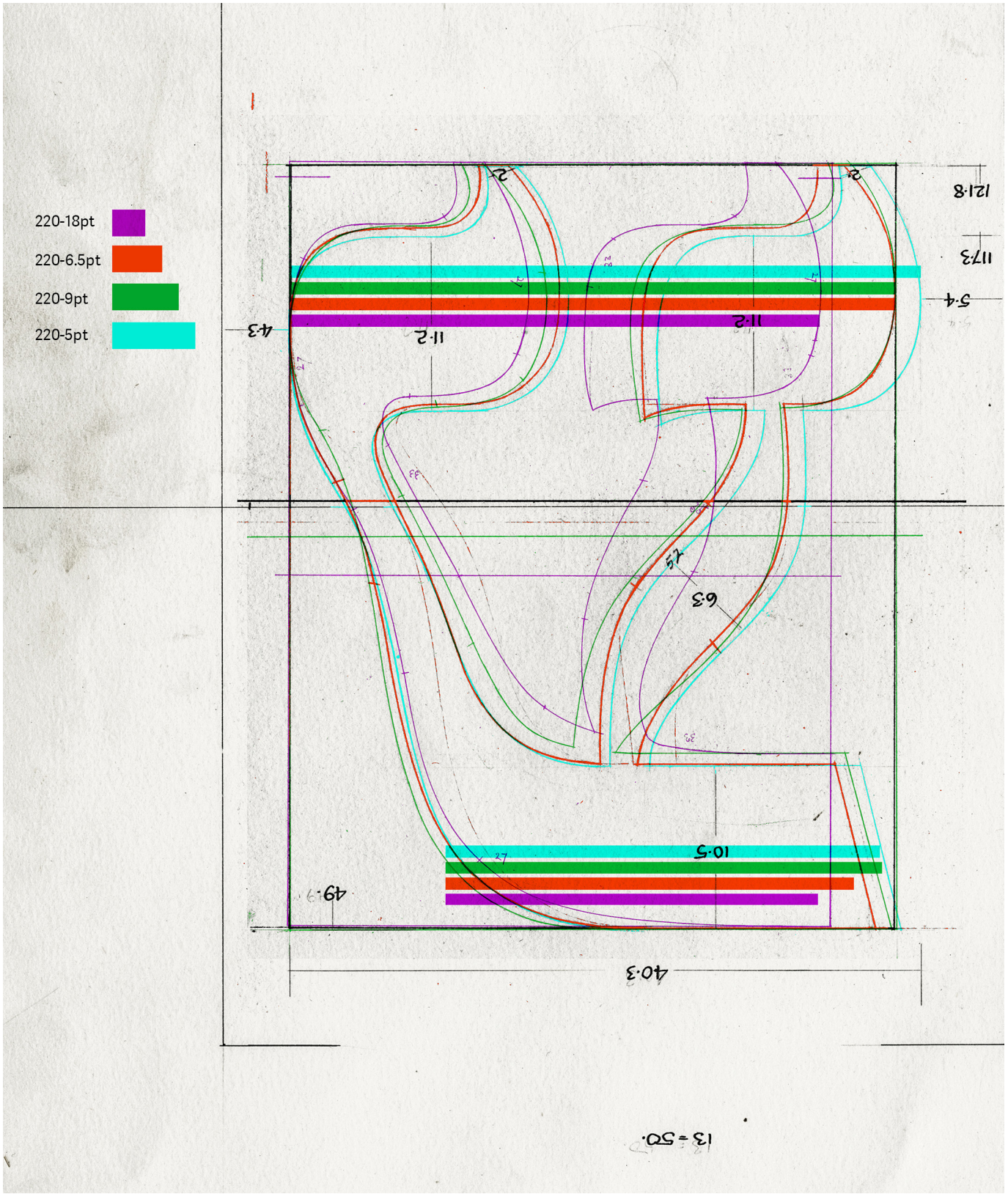


Figure 5.23 Comparison of *Ayin* widths of series 220 in 18pt, 9pt, 6.5pt and 5pt. From the figure it appears that the display size is the narrowest and the smallest size is the widest. The other sizes are not drawn based on any rule, but in between the extreme widths. The characters were matched in height for a better letterform comparison. (MA, Salfords)

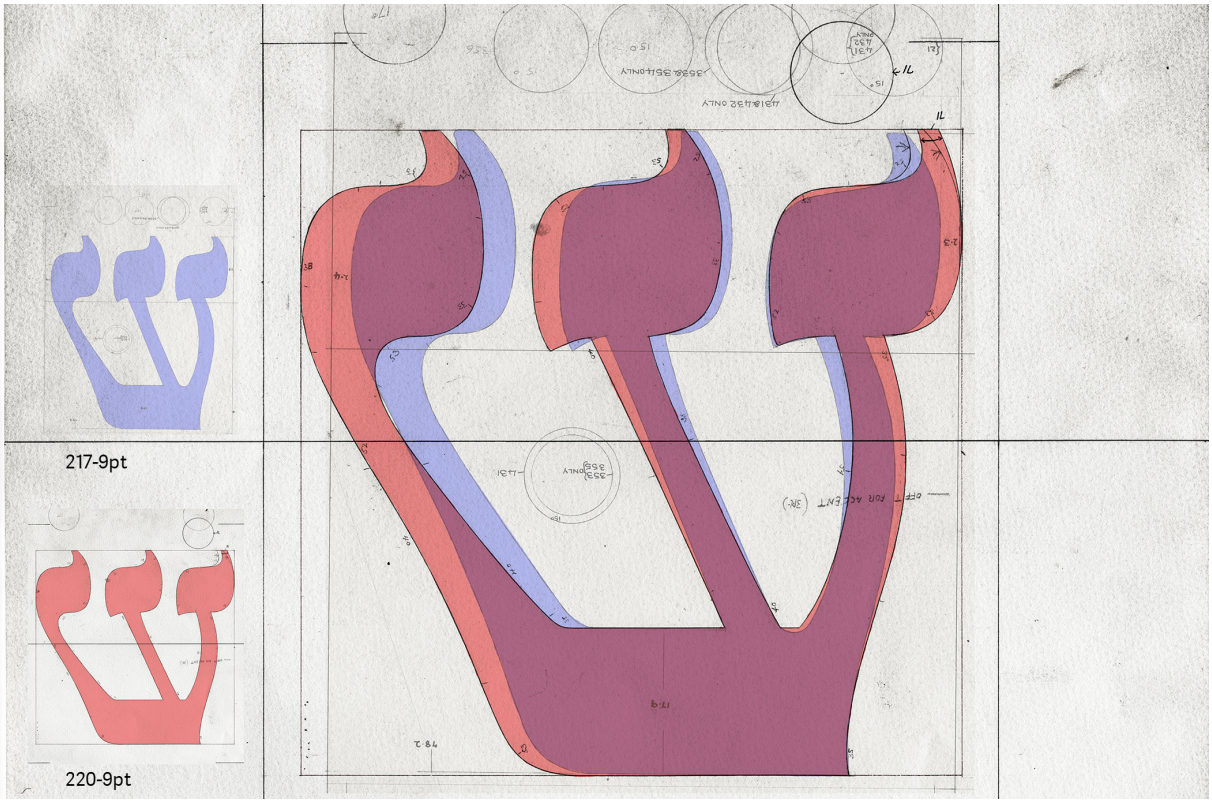


Figure 5.24 Comparison of *Shin* in 9pt in series 217 and 220. (MA, Salfords) [40%]

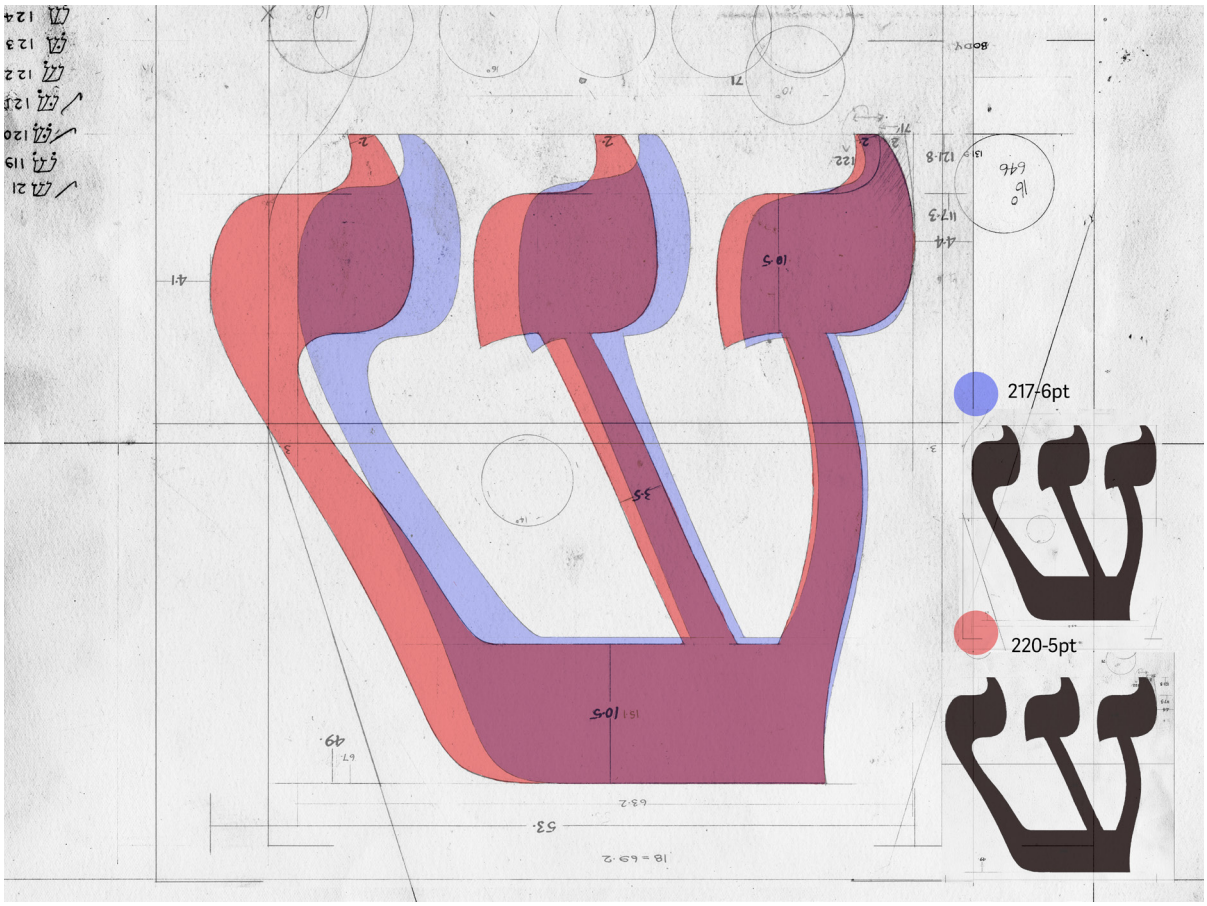
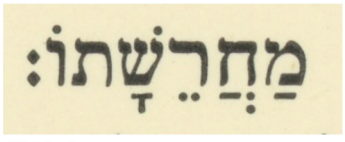


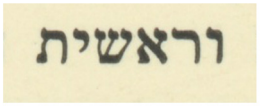
Figure 5.25 10-inch drawings of *Shin* placed together in 220-5pt and 217-6pt. The two fonts were used often together in the same matrix case. (MA, Salfords) [40%]

be seen in comparing the *Shin* in 217-6pt with 220-5pt which were accommodated together in the popular M.C.A 4481(figure 5.25, p.94). The two sizes were many times printed together on the same page (e.g., text and footnotes), although width difference is clear and can be seen in figure 5.26. The shape of the middle 'arm' inside the *Shin* is controlling the darkness of the counters. In series 220, the shape of the joint between the arm and the horizontal bottom bar and was altered according to the width of the character drawn (figure 5.27 p.92). The left arm differs in the text and display sizes, being thicker in the large sizes (figure 5.16, p.87).

In order to see the extremes of transformation between Frank Rühl and Peninim, please see figure 5.28. To conclude, it appears that some of the changes in features and proportion were done for technical constraints, some were done because it was more convenient and some in attempt to improve the original version.



217-6pt



220-5pt

Figure 5.26 Notice the *Shin* in words printed in 220-5pt and 217-6. The two fonts were often used together in the same matrix case, but width variations are clearly visibly. (MA, Salfords) [350%]

Frank Rühl 12cicero

220-5pt

Frank Rühl 8cicero

217-8pt

Figure 5.28 Frank Rühl and Peninim are displayed together, showing extreme differences. (MA, Salfords) [Peninim is 800% of original. Frank Rühl 12cicero is 10% and 8cicero is 32% compared to them]

6. Conclusion

The purpose of this study was to provide a detailed description of the transformation of a typeface from metal type for hand composition to Monotype's hot-metal typesetting. Hebrew typefaces were the particular interest, with Frank Rühl and Monotype's version – 'Peninim' as a case study.

Frank Rühl was a typeface designed in Germany by Rafael Frank in the beginning of the 20th century and became widely popular for setting Hebrew. It was one of the first Hebrew typefaces produced in Monotype, and the most successful one both in Israel and abroad. The adaptation of Frank Rühl started in 1926, taken from the Hebrew catalogue of Berthold type foundry in Berlin, consisting both metal and wood examples of pointed and unpointed characters.

Monotype came up with a revolutionary new system for casting Hebrew vowel points with the letters, and contributed to the growth of quality printed Hebrew material. Although the machines were first received In Israel with great concern, the sales began to grow quickly and Peninim typeface was becoming popular.

The communication between costumers and Monotype was done through a local agent, who reported to the overseas department. The information was then forwarded to the right department, including the Typographical Committee. Requests from clients arrived frequently, regarding the production of new sizes and pointed versions. Some were approved and some not, influenced by the understanding of the limited market and necessity.

Peninim typeface consisted mainly of three separate series: 220 for unpointed characters, 217 for pointed Hebrew and 489 for casting Hebrew with Latin. An option of arranging a matrix case with more then one Peninim series was widely accepted, as well as M.C.As combining Latin and Hebrew. Each character for every size was redrawn, using either another size of Peninin or the original Frank Rühl as reference. Even though the drawings were done by hand, straight edges and french curves were used, resulting in either criticism about the mechanism within the typeface or approval of the standardisation.

Some characters were not modified in the best possible way, but the conditions and quality of the originals that were used by the T.D.O must be taken into account. In addition, it should be acknowledged that technical limitations determined some of the letter's proportions. In comparing Peninim type face to Frank Rühl some differences can be seen, width modification above all. In addition, some characters were altered and offered in two forms for several reasons.

In the 1960's Monotype was in search of an alternative typeface to Peninim and many were reviewed without much success. It was obvious that another typeface on top of Frank Rühl should be found, but it seemed that the Israeli parties involved were either confident about the quality of it and the absence of a proper alternative or they didn't think they can change the situation that felt so rooted in Hebrew printing culture. To this day, Frank Rühl (and its versions) is the most dominant typeface in Israel, used in most publications. Other versions of it, including some contemporary digital examples can be seen in Appendix G.

Unlike today, when any designer (and non-designer) could design a typeface on his own initiative without being commissioned to do so, in Monotype every typeface that was cut was usually specifically commissioned in a certain size. Because of the small market for Hebrew, there was no reason to produce another similar typeface and any decision of cutting new punches was carefully calculated.

Secondary styles in Peninim included only a bold version named series 1189, produced in 1983. Italic style was never designed, not even in the original Frank Rühl. The fact that the typeface is so widely used might serve as the reason why italic styles are rarely used in Israel.

Further research can deal with the adaptation of Peninim typeface for phototypesetting and the transition to digital era, both in Monotype and Linotype. In addition, other Hebrew typefaces which present different process and communication with customers could be investigated.[202]

Hopefully the method of working with correspondence presented in this dissertation (Appendix A) and its content would be useful for future research.

202 Such as Koren and Schoken typefaces which present interesting correspondence and process.

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Acknowledgements

For their invaluable assistance, kindness and generosity:

James Mosley, Gerry Leonidas, Fiona Ross, Mary Dyson.

Dan Rhatigan, Robin Nicholas, Ian Bezer, Julian Moncada, Alice Savoie.

Susan Shaw, Duncan Avery, Sallie Morris.

Oded Ezer, Igal Zorea, Shmuel Sela, Ittai Joseph Tamari, Yaronimus, Michal Fonea Alexandron, Noa Aharon, Amit Tavor.

For German translations: Philipp Messner, Lisa Timpe, Sebastian Losch, William Montrose, Jonas Niedermann, Florian Runge, Louisa Fröhlich, Igor Labudovic.

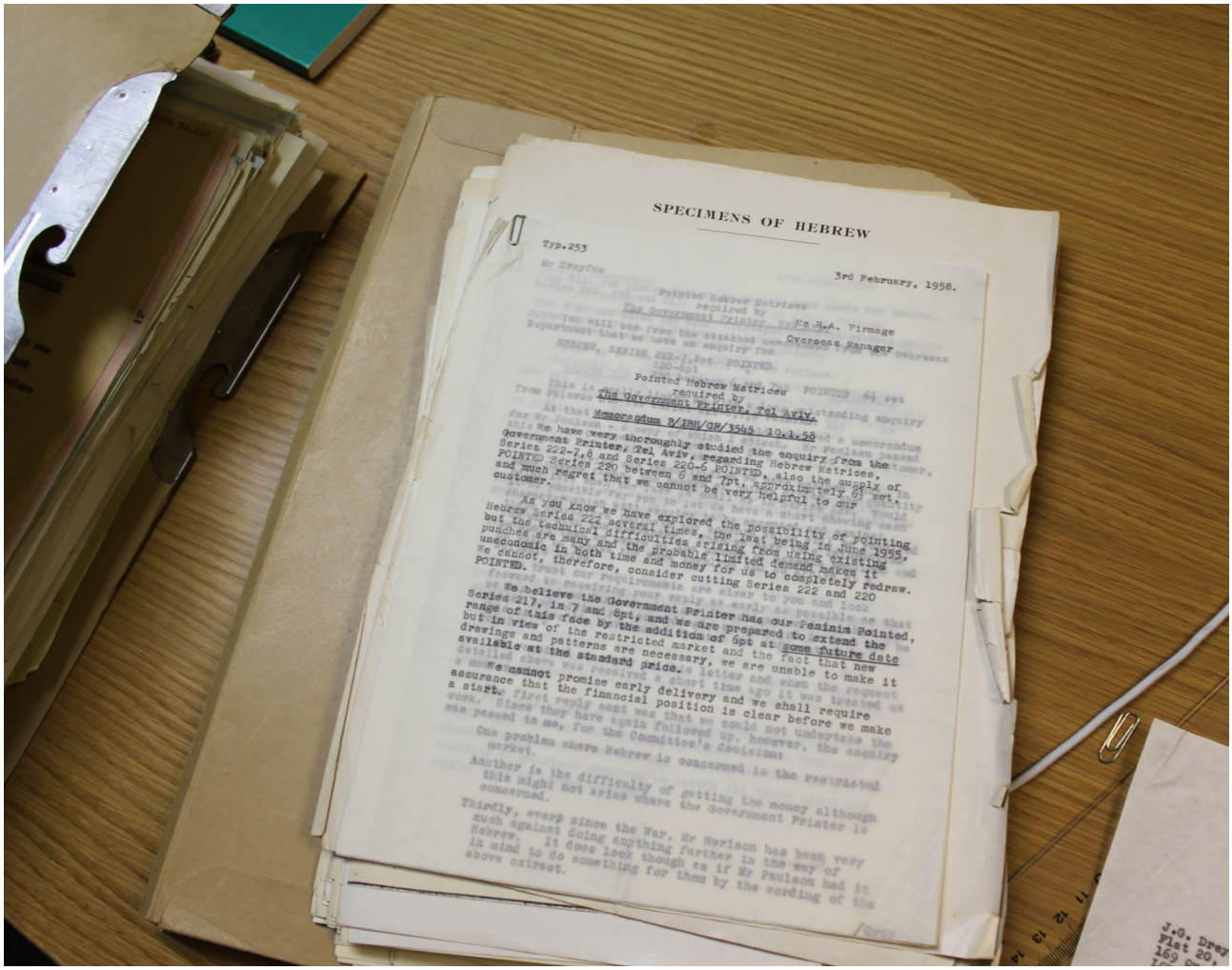


Figure 1.3 Correspondence folders in Monotype archives in Salfords.

Appendix A

Research through Correspondence in the Monotype archive

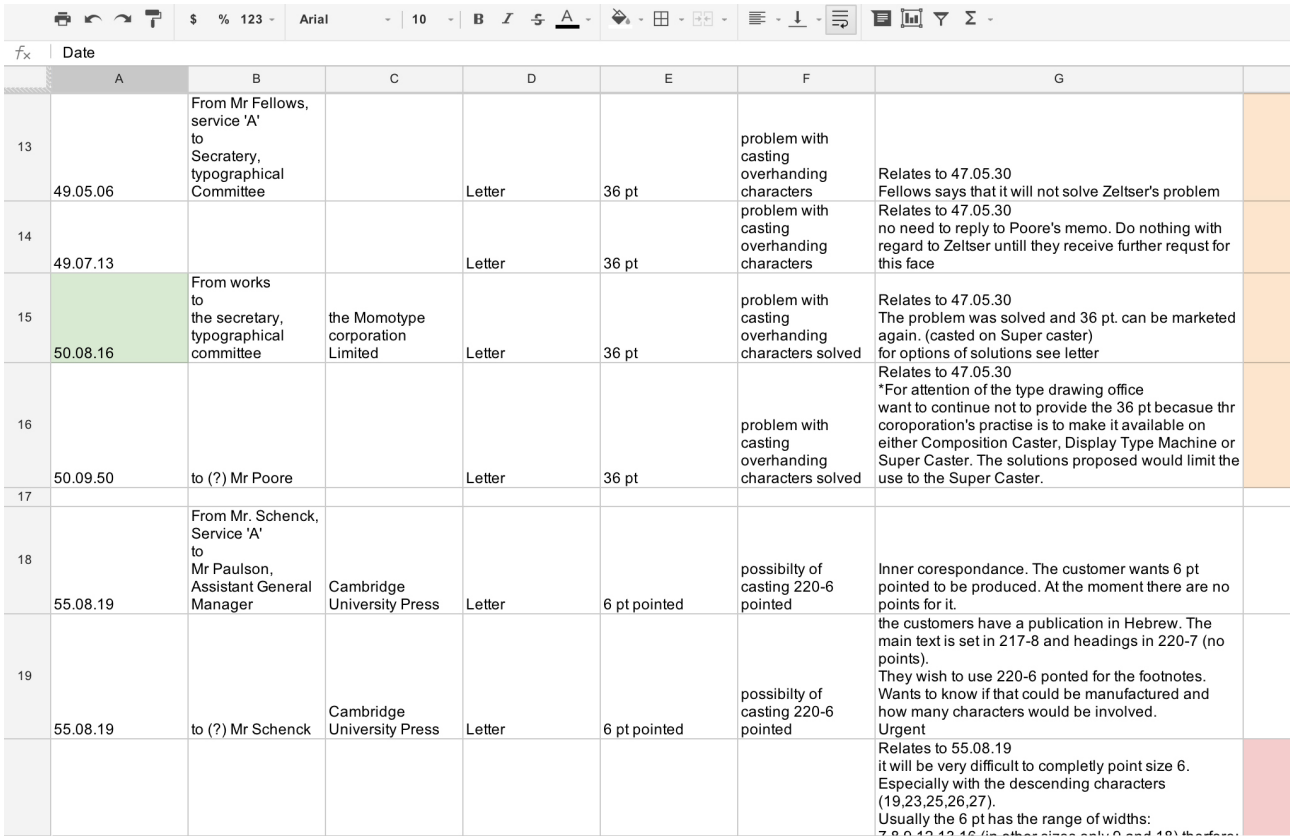
During the hot-metal era, Monotype has produced several Hebrew typefaces, and was in contact with designers and companies regarding making them available on their machines. Communication with costumers was significant due to the fact that much of the expanding of a typeface was a direct request from them; many sizes were cut and new matrix case arrangements were made possible. On the contrary, some were not approved due to the cost in relation to the small market or technical restraints.

Only some Modern Hebrew sources are published, but even in them the relation between mechanical typesetting and the typefaces is rarely mentioned. The Monotype archives in Salfords, were proved as a comprehensive source for information, as past production logs are detailed and correspondence is still kept in most cases. Therefore, it was possible to trace the stories behind Peninim typeface, the people involved and the communication relations between Monotype and Hebrew speaking areas, mostly Israel (Figure 1.3).

In order to get a broad picture from more then one angle, several kinds of folders in the archives were reviewed:

* RESEARCH FOLDERS – containing general information about Hebrew, special casting of vowel points, new possibilities of Hebrew typesetting in Monotype, typeface specimens or pamphlets in Hebrew as well as correspondence regarding copyrights and other matters.

* CORRESPONDENCE WITH COSTUMERS FOLDERS – including enquiries and issues between clients and Monotype departments through Monotype's agents in Israel and the Overseas department. Usually, the local agent reported to the overseas department or manager and they contacted the relevant department. Most correspondences were written within the corporation and the customer's name is written in the subject line, but the names of the sender and the recipient are not often mentioned. Although some correspondence was sent directly from customers or agents, most were not kept in the Salford Archives. For convenience reasons, in the dissertation I would mostly refer to the customers rather then the departments passing the information.



Date

	A	B	C	D	E	F	G
13	49.05.06	From Mr Fellows, service 'A' to Secratery, typographical Committee		Letter	36 pt	problem with casting overhanding characters	Relates to 47.05.30 Fellows says that it will not solve Zeltser's problem
14	49.07.13			Letter	36 pt	problem with casting overhanding characters	Relates to 47.05.30 no need to reply to Poore's memo. Do nothing with regard to Zeltser untill they receive further requst for this face
15	50.08.16	From works to the secretary, typographical committee	the Momotype corporation Limited	Letter	36 pt	problem with casting overhanding characters solved	Relates to 47.05.30 The problem was solved and 36 pt. can be marketed again. (casted on Super caster) for options of solutions see letter
16	50.09.50	to (?) Mr Poore		Letter	36 pt	problem with casting overhanding characters solved	Relates to 47.05.30 *For attention of the type drawing office want to continue not to provide the 36 pt becasue thr coroporation's practise is to make it available on either Composition Caster, Display Type Machine or Super Caster. The solutions proposed would limit the use to the Super Caster.
17							
18	55.08.19	From Mr. Schenck, Service 'A' to Mr Paulson, Assistant General Manager	Cambridge University Press	Letter	6 pt pointed	possibilty of casting 220-6 pointed	Inner corespondance. The customer wants 6 pt pointed to be produced. At the moment there are no points for it.
19	55.08.19	to (?) Mr Schenck	Cambridge University Press	Letter	6 pt pointed	possibilty of casting 220-6 pointed	the customers have a publication in Hebrew. The main text is set in 217-8 and headings in 220-7 (no points). They wish to use 220-6 ponted for the footnotes. Wants to know if that could be manufactured and how many characters would be involved. Urgent
							Relates to 55.08.19 it will be very difficult to completly point size 6. Especially with the descending characters (19,23,25,26,27). Usually the 6 pt has the range of widths:

Figure 1.4 Organising the relevant correspondence chronologically, by series numbers and topics and summarising them was the method of research for this dissertation.

*TYPE DRAWING OFFICE PRODUCTION FOLDERS – consisting work trails and proofs for each font and correspondence between department for each series.

* PRODUCTION LOGS – describe every action or request regarding each series

* 10 INCH DRAWINGS – were done by the Type Drawing Office, used in order to make copper patters and consequently type. In them, major and subtle differences can be seen between characters, sizes and series.

* DESIGNERS CONTRACTS – containing contracts with designers and type foundries regarding copyrights and agreements for producing type and selling matrices.

There are several ways in which the correspondence could been read and worked with; chronologically, by themes, by design decisions of every series or across all series, by following correspondence of a specific request from a customer and the replies and so on. The following chosen method has proved successful, although sub-sorting was done in addition.

At first, all the Hebrew correspondence was reviewed. The letters, notes and proofs regarding Peninim series were kept aside to be used as the primary source of the research. Other correspondence regarding other Hebrew typefaces that could provide additional information about methods of working with costumers, searching for new typefaces and describing the relation between Israel and Monotype was read thoroughly and summarised. In addition, any information mentioned in the Hebrew folders regarding production of Hebrew (e.g., casting, typing) and dealing with the vowel points was extracted, for understanding the system and to be used as a background.

The Peninim material was then sorted in chronological order, according to series numbers. Only then the letters were read one by one, while summarising each one and arranging them in clusters according to topics (figure 1.4). Those were either specific issues regarding the evolving of the series or more general issues such as combing with Latin, vowel marks etc. later, the Production Logs were read, and assisted in filling gaps of needed information or dates. The images found in the folders consisting of Matrix case and keyboard arrangements, font schemes and text proofs were collected and matched to the letters and notes, in order to serve as visual references.

In addition to the correspondence, selected letters and sizes of the 10-inch drawings which show best a variety of characteristics were scanned. Those were used along with the trail proofs for comparing series with each other and with the original Frank Rühl. Articles and

essays were used to receive another point of view or opinion about Monotype.

Monotype's original punches and several M.C.A and keyboard layout were looked at in the Type Archive in London. Those showed respectively the scope of characters cut is each series and the ones actually used by costumers. Conversations were also a great assistance in completing missing information and learning about Monotype in general and how it worked in particular. Booklets published by Monotype about the technical opportunities were also found in Salfords and in addition to the information, presented the spirit of the time.

Basing a research on correspondence requires the writer to be very organised and thorough. Every letter or image could assist in trying to receive a complete picture and sometimes it is not the primary issue which is relevant and interesting. Concurrently, it should be understood that not all letters can be found, and gaps would need to be filled through other sources.

Appendix B

List of Hebrew letters and vowel marks

א – Alef

ב – Bet

ג – Gimmel

ד – Dalet

ה – He

ו – Vav

ז – Zayin

ח – Het

ט – Tet

י – Yod

כ – Kaf

ל – Lamed

מ – Mem

ם – Final Mem

נ – Nun

ן – Final Nun

ס – Samech

ע – Ayin

פ – Peh

ף – Final Peh

צ – Zade

ץ – Final Zade

ק – Qof

ר – Resh

ש – Shin

ת – Tav

אּ – Shuruk

אְ – Shewa

אִ – Hirik

אֶ – Segol

אֵ – Zeire

אַ – Pathah

אָ – Kamaz

אֹ – Holam

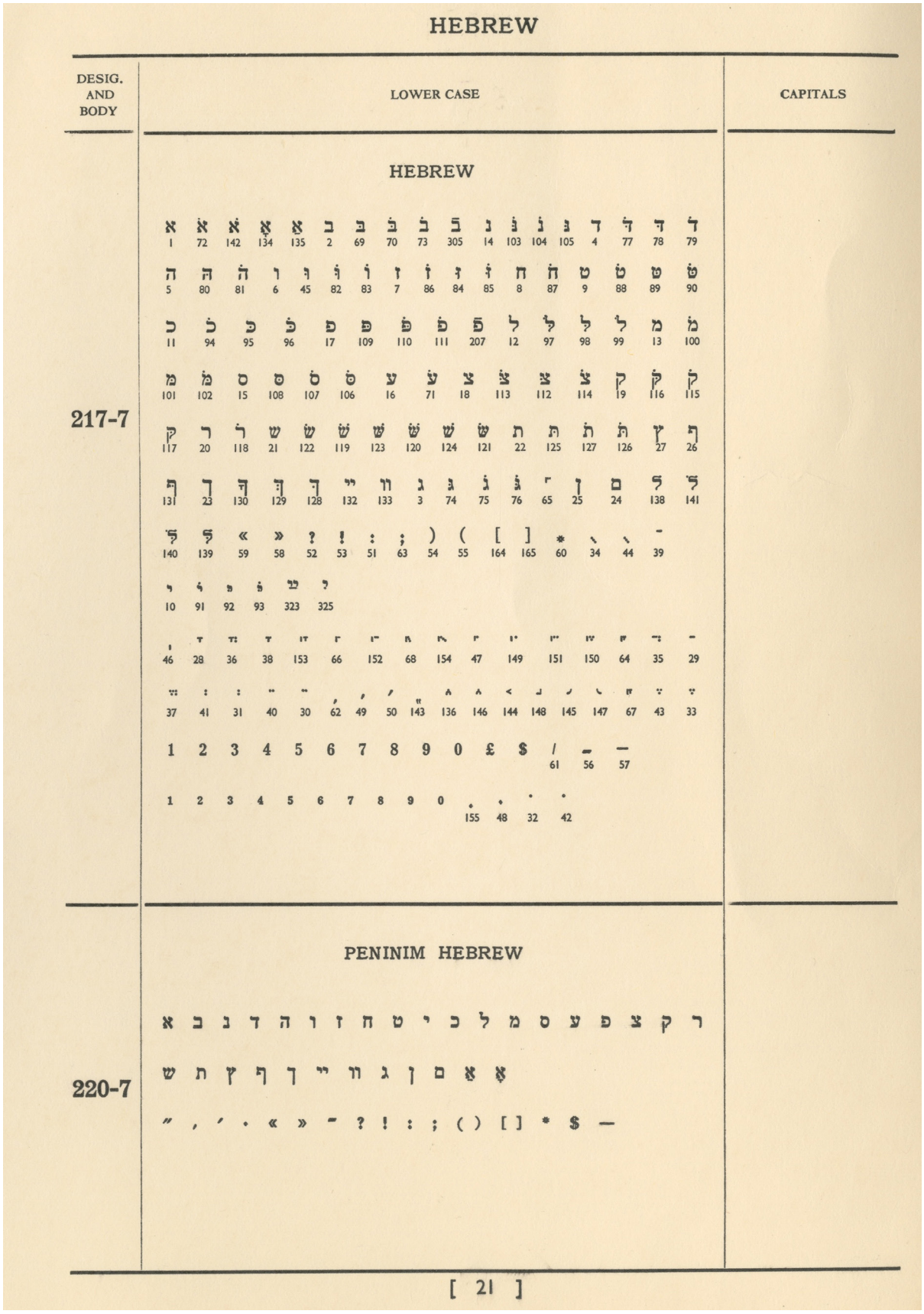
אֱ – Hataf Segol

אֲ – Hataf Pathah

אֳ – Hataf Kamaz

Appendix C

Full character set of series 217, 220



HEBREW

DESIG. AND BODY	LOWER CASE	CAPITALS
217-7	HEBREW	
220-7	PENINIM HEBREW	

[21]

Appendix D

List of names and jobs in Monotype

Arthur Firmage – Overseas Manager

Cecil N. Fellows – Service 'A' Manager, Chief Service Manager, Controller of Typographical Development (1962)

C.G. Turner – Assistant Overseas Maneger

Charles A. Poore – Works Manager, T.D.O

D. Weller – Secretary to the Typographical Committee

Frank Hinman Pierpont – Director of the type drawing office, Works Manager

Fritz Max Steltzer – Head of type drawing office

Geoffrey Paulson – Assistant General Manager (1955), Sales Director (1956)

George Westover – Consulting Engineer

Hans W. Thun – Assistant Continental Manager (1964)

Harrold M. Duncan – Managing Director

I.B Harris – Overseas department

John Dreyfus – Typographical Cdvisor

John Goulding – Typographycal Manager, Head of Drawing Office (1965)

Joseph Faulkner –Continental department.

Lesley G. Oppitz – Overseas Department

Stanley Morison – Typographical Adviser

William I. Burch – Managing Director, Director & Secretary

Appendix E

Hebrew typefaces produced by Monotype

HEBREW FACES AVAILABLE

Hot-metal

Peninim Pointed	Series	217
Sonzino		218
Ashurith		219
Peninim		220
Levenim		221
Hebrew		222
Rabbinic		228
Mayer Pointed		488
Peninim		489
Mayer		492

'Monophoto' Filmsetter

Peninim	220
Peninim Pointed	217
Koren Hebrew Book Face	715
Koren Hebrew Bold	716

Photolettering

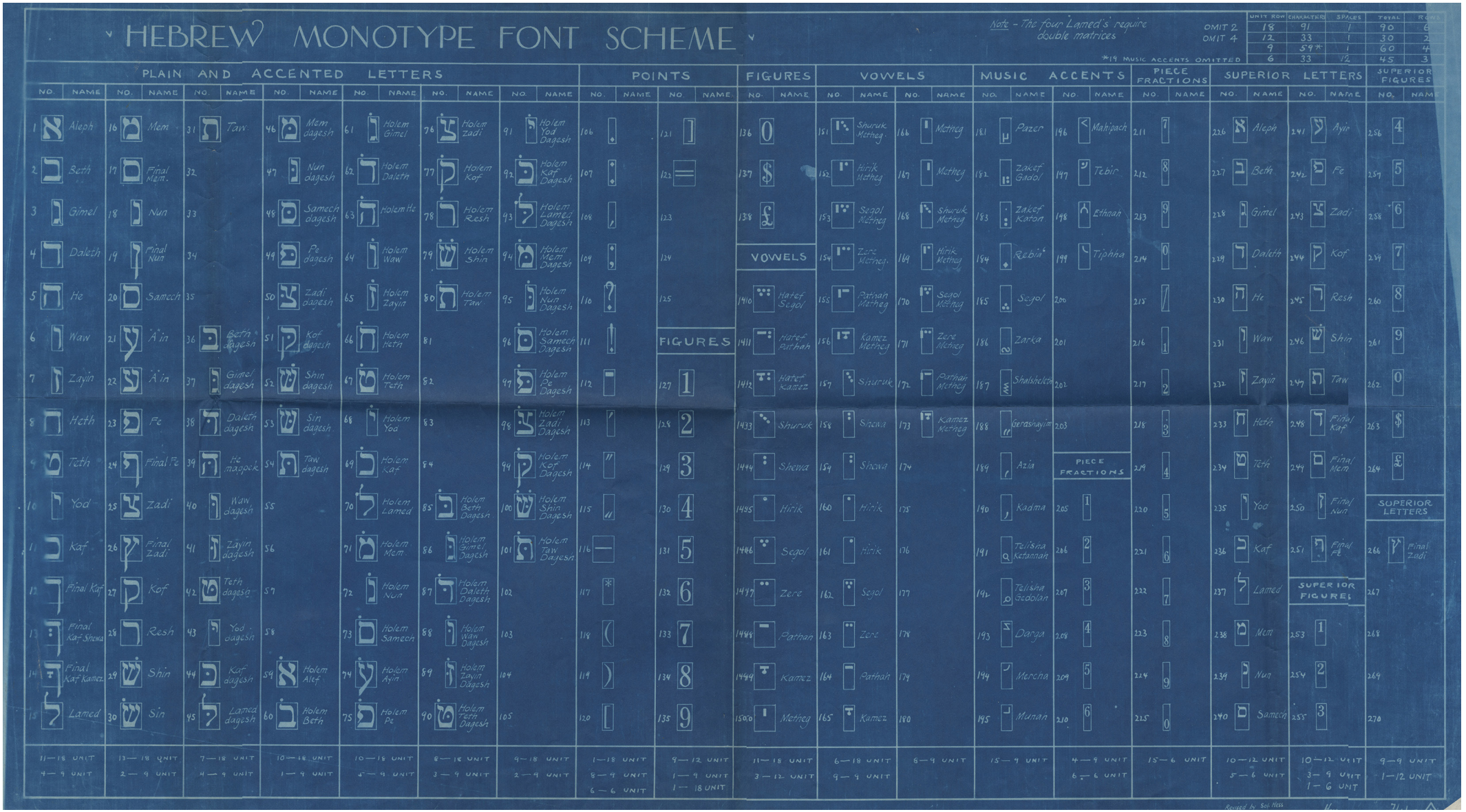
Peninim	217
Alachsoni	733
Dak Jerushalmi	734
Ave Jerushalmi	735
Dak	736
Ave	737

HEBREW typefaces (cont)

[illegible]	Designation No.	Available in	First Produced	Any known Details
Mayer	492	Hot-metal	1938	Designed by Professor Mayer for exclusive use of University of Jerusalem. Generally available from 1965. Made for types to be hand inserted in Latin face, Baskerville
Koren Hebrew Book Face	715	Filmsetter	1970	Made under licence issued by Deberny Peignot, Paris
Koren Hebrew Bold	716	Filmsetter	1970	
Peninim Pointed	217	Filmsetter	1965	Copy of hot-metal Series 217-7pt
Peninim Pointed	217	Filmsetter	1965	Copy of hot-metal Series 217-8pt
Peninim	220	Filmsetter	1965	Copy of hot-metal Series 220-6pt
				All work together
Peninim Pointed	217	Film-Photolettering	1968	----------
Alachsoni	733	Film-Photolettering	1969	Designs Supplied by The Ministry of Labour, Survey Dept., Tel Aviv
Dak Jerushalmi	734		1969	
Ave Jerushalmi	735		1969	
Dak	736		1969	
Ave	737		1969	

HEBREW typefaces available from
The Monotype Corporation Ltd., Salfords, Redhill RH1 5JP, England

Title	Designation No.	Available in	First produced	Any known Details
Ashurith	219	Hot-metal	1927	Copy of Klotzkin face from printed books
Hebrew	222	Hot-metal	1913	----------
Levenim	221	Hot-metal	1922	----------
Penimim	220	Hot-metal	1927	----------
Peninim Pointed	217	Hot-metal	1927	----------
Peninim	489	Hot-metal	1937	Copy of our Series 217-7pt but made to cast automatically with Latin face, Imprint, Series 101-8 or 101-11pt
Rabbinic	228	Hot-metal	1927	----------
Sonzino	218	Hot-metal	1927	----------
Sonzino-special points	L61	Hot-metal	1941	Made to work with Series 218-9pt. Points cast on 4½ point body and go over and under line of text characters.
Mayer Pointed	488	Hot-metal	1938	Designed by Professor Mayer for exclusive use of University of Jerusalem. Generally available from 1965. Made for types to be hand inserted in Latin face, Baskerville.

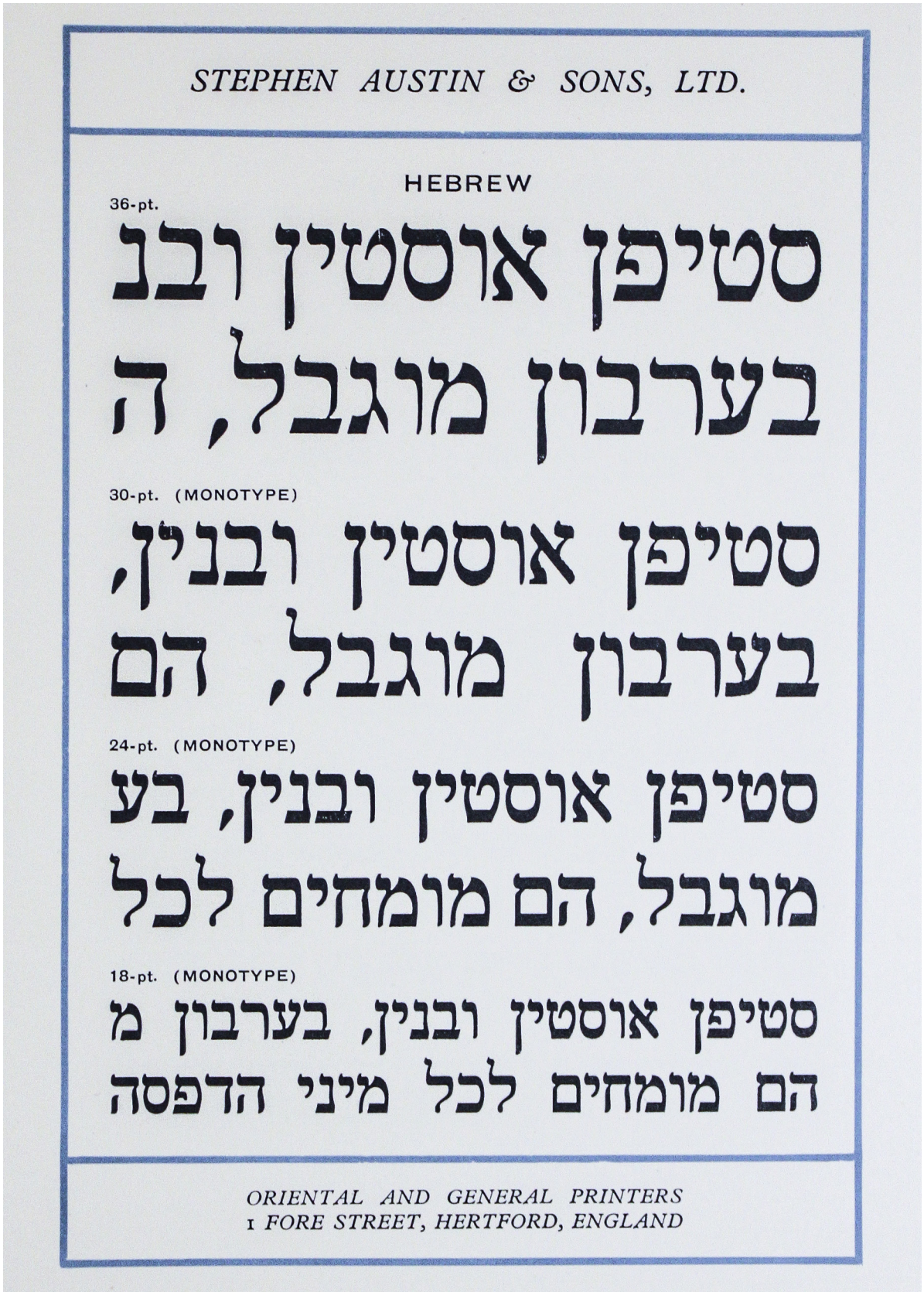


Appendix F

Hebrew Font scheme [40%]

Appendix G

Other versions of Frank Rühl



Stephen Austin & Sons Frank Rühl

6

אבגדהוזחטיכלמנסעפצקרשת דמוף 0987654321 .,־:;?!()[]"„»«'*—§

בתחילה ניתנה תורה לישראל בכתב עברי ולשון הקודש. חזרה וניתנה להם בימי עזרא בכתב אשורית ולשון ארמי. ביררו להם לישראל כתב אשורית ולשון הקודש והניחו להדיוטות כתב עברית ולשון ארמי (סנהדרין כ״א ב).

7/8

אבגדהוזחטיכלמנסעפצקרשת דמוף 0987654321 .,־:;?!()[]"„»«'*—§

בתחילה ניתנה תורה לישראל בכתב עברי ולשון הקודש. חזרה וניתנה להם בימי עזרא בכתב אשורית ולשון ארמי. ביררו להם לישראל כתב אשורית ולשון הקודש והניחו להדיוטות כתב עברית ולשון ארמי.

8

אבגדהוזחטיכלמנסעפצקרשת דמוף 0987654321 .,־:;?!()[]"„»«'*—§

בתחילה ניתנה תורה לישראל בכתב עברי ולשון הקודש. חזרה וניתנה להם בימי עזרא בכתב אשורית ולשון ארמי. ביררו להם לישראל כתב אשורית ולשון הקודש והניחו להדיוטות

10

אבגדהוזחטיכלמנסעפצקרשת דמוף 0987654321
.,־:;?!()[]"„»«'*—

בתחילה ניתנה תורה לישראל בכתב עברי ולשון הקודש. חזרה וניתנה להם בימי עזרא בכתב אשורית ולשוי ארמי. ביררו להם לישראל כתב

12

אבגדהוזחטיכלמנסעפצקרשת דמוף 321
0987654 .,־:;?!()[]"„»«'*—§

בתחילה ניתנה תורה לישראל בכתב עברי ולשון הקודש.
חזרה וניתנה להם בימי עזרא בכתב אשורית ולשון ארמי.

14

אבגדהוזחטיכלמנסעפצקרשת דם

16

אבגדהוזחטיכלמנסעפצקרשת

20

אבגדהוזחטיכלמנסעפצק

24

אבגדהוזחטיכלמנסעפ

28

אבגדהוזחטיכלמנ

36

אבגדהוזחטיכ

48

אבגדהוזחט

Jerualem Typefoundry Frank Rühl

אבגדהוזחטיכךלמםנןסעפףצץקרשת

אבגדהוזחטיכךלמםנןסעפףצץקרשת

אבגדהוזחטיכךלמםנןסעפףצץקרשת!?

טיפוגרפיה גופנים דפוס מעצבים
אף כל קשר לחץ זך

משקל: שמן גודל: 32 נקודות

טיפוגרפיה גופנים דפוס מעצבים
אף כל קשר לחץ זך

Top: Varityper Frank Rühl, Gilboa, Autologic Frank Rühl, Fontype Frank Rühl (2 weights)

Frank Rühl New (Shmuel Sela) in five weights. Top: Light, Book, Heavy

פרנק ריהל אוטולוג׳יק
אבגדהוזחטיכךלמםנןסעפףצץקרשת

פרנק ריהל אוטולוג׳יק
אבגדהוזחטיכךלמםנןסעפףצץקרשת

פרנק ריהל פונטביט
אבגדהוזחטיכךלמםנןסעפףצץקרשת

פרנק ריהל פונטביט
אבגדהוזחטיכךלמםנןסעפףצץקרשת

פרנק ריהל הגילדה
אבגדהוזחטיכךלמםנןסעפףצץקרשת

פרנק ריהל הגילדה
אבגדהוזחטיכךלמםנןסעפףצץקרשת

From top: Autologic Frank Rühl, Fontbit Frank Rühl, Hagilada Frank Rühl

Appendix H

Peninim Specimens (217, 220)

REGD. TRADE MARK
MONOTYPE

HEBREW: PENINIM 220

SYNOPSIS IN 7 POINT

אָאַאבגדהוזחטיכלמנסעפצקרשתךםןףץ

09876 *«»[]()—־״׳?!;:,·׳ 54321

7 PT. (7D) 7¼ SET CAST ON 11 PT.

אַיכה? איכם החיים? איכם חיי? קורא האדם בצר לן· יום ירדוף יום,
שבוע שבוע, ירח ירח ושנה שנה; מהי מהות כל אלה? — מה הוא
היסוד לכל אלה? החומר והצורה נתנו בבת אחת, האדם וזמנו, א־ין
סדר זמנים קודם לנפש ואין נפש בלי זמן, אין רוח בלי אחיזה
בעולם· הגירו נא לו, מי הוא האוחז ומה הוא הנאחז? ופתרו לו, מה
הוא התוך ומה הוא הבר? הראו לו את הגשר העולמי בין הנפש
ושרשה, הראו לו את המקור, את הנצח·
אתם יודעים להרבות מלים, בטויים ושמות נרדפים רבים אתם
ממציאים לכל נמצא ולכל חי, לכל אשר יעוף בשמים והולך על
הארץ; יודעים אתם להמציא מלים למושגי הנפש והרוח, לעולם
ולאדם, לאלוה ולמעשיו, לטוב ולרע, לחזק ולרפה, לנאמן בחיים
ולבלתי נאמן; אתם יודעים לדברמ, אלף׳ עד, תיו׳ ולצרף כלהשרשים
והפעלים והנטיות, השמות והמלים, איש איש לפי ערכו ודרכו, איש
איש לפי משפטו ובטויו, איש איש לפי קולו ובת־קולו; למדו הבין

5 PT. (5D) 5 SET CAST ON 8 PT.

ובדבר הזה אין אנו נבדלים מכל החי, מכל נפש ומכל נמצא· השאלה היא
מקור הבריאה וראשית הבריאה; השאלה היא הבאר העולמית, אשר ממנה
אנו כלנו שותים, אנו שותים וצמאים···
אל אלהי הרוחות! אתה יצרתנו, אתה נפחת באפנו נשמה, שעתיד אתה ליטלה
ממנו; אתה נוטלה בכל יום ואתה מחזירה לנו בכל יום, מה חקר פעולותיך
בנו כי נדע, מה פשר השגחתך עלינו··· ולבב נתת לנו, אלהים, לשמור את
הטוב ואת הישר, את החסד ואת השבועה, שהשבעת את בני־האדם לשמרם
בחייהם, במעשיהם, בכל אשר יפנו ובכל אשר יבוא לידם; ואתה ידעת את

6 PT. (6D) 5½ SET CAST ON 9 PT.

ובדבר הזה אין אנו נבדלים מכל החי, מכל נפש ומכל נמצא· השאלה
היא מקור הבריאה וראשית הבריאה; השאלה היא הבאר העולמית,
אשר ממנה אנו כלנו שותים, אנו שותים וצמאים···
אל אלהי הרוחות! אתה יצרתנו, אתה נפחת באפנו נשמה, שעתיד
אתה ליטלה ממנו; אתה נוטלה בכל יום ואתה מחזירה לנו בכל יום,
מה חקר פעולותיך בנו כי נדע, מה פשר השגחתך עלינו··· ולבב
נתת לנו, אלהים, לשמור את הטוב ואת הישר, את החסד ואת השבועה,
שהשבעת את בני־האדם לשמרם בחייהם, במעשיהם, בכל אשר יפנו

14 PT. DISPLAY MATRICES

ויענו אנשי המצבה את יונתן ואת נשא כליו ויאמרו עלו אלינו
ונודיעה אתכם דבר ויאתר יונמן אל נשא כליו עלה אחרי כי

18 PT. DISPLAY MATRICES

ויענו אנשי המצבה את יונתן ואת נשא כליו ויאמרו
עלו אלינו ונודיעה אתכם דבר ויאמר יונחן אל נשא

24 PT. DISPLAY MATRICES

ויענו אנשי המצבה את יונתן ואת נשא
כליו ויאמרו עלו אלינו ונודיעה אתכם

T BRITAIN BY THE MONOTYPE CORPORATION LIMITED AT THEIR WORKS, SALFORDS, REDHILL, SURREY, ENGLAND. REGISTERED ADDRESS: MONOTYPE HOUSE, 43 FETTER LANE, LONDON, E.C.4

REGD. TRADE MARK
MONOTYPE

HEBREW: PENINIM POINTED 217

SYNOPSIS IN 8 POINT

אַאָאבבּבגגּדדּהההּווּוֹזזּחטטּייּככּכללּממּנננּססּעפפּפצצּקקּרששׁשׂשּׁשּׂתתּךךּף

׳״וּוֹ$£/*»«–—()!?:;׳,.

0987654321 אבגדהוזחטיכלמנסעפצקרשתךםןףץ 0987654321

6 PT. (6D) 5 SET

וַיֵּרְדוּ כָל־יִשְׂרָאֵל הַפְּלִשְׁתִּים לִלְטוֹשׁ אִישׁ אֶת־מַחֲרַשְׁתּוֹ וְאֶת־אֵתוֹ וְאֶת־קַרְדֻּמּוֹ וְאֵת מַחֲרֵשָׁתוֹ: וְהָיְתָה הַפְּצִירָה פִים לַמַּחֲרֵשֹׁות וְלָאֵתִים וְלִשְׁלֹשׁ קִלְּשׁוֹן וּלְהַקַּרְדֻּמִּים וּלְהַצִּיב הַדָּרְבָן: וְהָיָה בְּיוֹם מִלְחֶמֶת וְלֹא נִמְצָא חֶרֶב וַחֲנִית בְּיַד כָּל־הָעָם אֲשֶׁר אֶת־שָׁאוּל וְאֶת־יוֹנָתָן וַתִּמָּצֵא לְשָׁאוּל וּלְיוֹנָתָן בְּנוֹ: וַיֵּצֵא מַצַּב פְּלִשְׁתִּים אֶל־מַעֲבַר מִכְמָשׂ:

7 PT. 5½ SET

וַיֵּרְדוּ כָל־יִשְׂרָאֵל הַפְּלִשְׁתִּים לִלְטוֹשׁ אִישׁ אֶת־מַחֲרַשְׁתּוֹ וְאֶת־אֵתוֹ וְאֶת־קַרְדֻּמּוֹ וְאֵת מַחֲרֵשָׁתוֹ: וְהָיְתָה הַפְּצִירָה פִים לַמַּחֲרֵשֹׁות וְלָאֵתִים וְלִשְׁלֹשׁ קִלְּשׁוֹן וּלְהַקַּרְדֻּמִּים וּלְהַצִּיב הַדָּרְבָן: וְהָיָה בְּיוֹם מִלְחֶמֶת וְלֹא נִמְצָא חֶרֶב וַחֲנִית בְּיַד כָּל־הָעָם אֲשֶׁר אֶת־שָׁאוּל וְאֶת־יוֹנָתָן וַתִּמָּצֵא לְשָׁאוּל וּלְיוֹנָתָן בְּנוֹ: וַיֵּצֵא מַצַּב פְּלִשְׁתִּים אֶל־מַעֲבַר מִכְמָשׂ:

8 PT. 7 SET

«אֲבָל אָבִי הֲלֹא נִבְחַר בַּיָּמִים הָרִאשׁוֹנִים, בִּהְיוֹת עוֹד הַמִּשְׂרָה לְכָבוֹד–עָנָה הָרִאשׁוֹן: וְזֶה לְךָ הָאוֹת כִּי יְקַר־עֶרְךָ הוּא וְחָשׁוּב מְאֹד». –לוּ עָזַב עַתָּה אֶת מִשְׁמַרְתּוֹ–עָנָה הַשֵּׁנִי–כִּי אָז יָכֹלְתָּ לְהִתְיַמֵּר בַּחֲשִׁיבוּתוֹ לְפָנִים, אֲבָל הוּא הֲלֹא בְּכָלֶה פְּצוֹ יִתְחַזֵּק עַל מִשְׁמֶרֶת פְּקֻדָּתוֹ, אִם כֵּן לֹא טוֹב הוּא מִשְּׁאָר רָאשֵׁי הַקָּהָל, אֲשֶׁר בְּיָמֵינוּ.

כזו. הַצַּיָּד הַנַּעַר.

הַמּוֹרֶה לְבֶן אַחַד־הַשָּׂרִים יָצָא עִם תַּלְמִידוֹ, כִּכְלוֹת לִמּוּדָיו, לָצוּד בַּשָּׂדֶה צָיִד. וַיַּרְא הַנַּעַר מֵרָחוֹק אַיָּלָה וַיְשַׁנֵּס מָתְנָיו וַיָּרָץ בְּכָל כֹּחוֹ וַיַּעֲבֹר אֶת הָאַיָּלָה וְעוֹד לֹא עָמַד, כִּי הוֹסִיף לָרוּץ.

Special points are available for the 7 and 8 point sizes for use when casting on 7 didot and 8 didot bodies respectively.

PRINTED IN GREAT BRITAIN BY THE MONOTYPE CORPORATION LIMITED AT THEIR WORKS, SALFORDS, REDHILL, SURREY, ENGLAND. REGISTERED ADDRESS: MONOTYPE HOUSE, 43 FETTER LANE, LONDON, E.C.4

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